OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

BOARD MEETING AGENDA

Friday July 28, 2023 9:00 a.m.		PERS 11410 SW 68th Parkway Tigard, OR
	ITEM	**PRESENTER**
A.	**Administration**	
1.	June 2, 2023, PERS Board Meeting Minutes	SHENOY
2.	Director's Report	SHENOY
	a. Forward-Looking Calendar	OLINECK
	b. OPERF Investment Report	
	c. Budget Execution Report	
B.	**Administrative rulemaking**	
1.	Introduction of policy coordinators	VAUGHN
2.	Notice of Retirement Benefit Rules	VAUGHN, CHANDLER
3.	Adoption of Self-Directed Brokerage Account Rule for OSGP	VAUGHN, YANG
4.	Adoption of Required Minimum Distribution Rules	VAUGHN, YANG
C.	**Action and discussion items**	
1.	Legislative session review and 2023-25 budget update	
	a. Session overview and 2024 preview	CASE
	b. 2023-25 budget	GABRIEL, HORSFORD
2.	SB 1049 update	ELLEDGE-RHODES
3.	Valuation methods and assumptions including assumed rate of return	MILLIMAN
4.	Notice of Assumed Rate OAR	VAUGHN

The PERS Board members, meeting presenters, and the public have the option to attend this meeting in person or remotely. Visit https://www.oregon.gov/pers/Pages/Board/PERS-Board-Information.aspx for options. This meeting will be recorded. An audio recording of the meeting will be available on the PERS website following the meeting.

Public testimony or comment will be taken on action items at the Chair's discretion. Written testimony/comment must be submitted to pers.board@pers.oregon.gov. Requests to provide oral testimony/comment must also be submitted to pers.board@pers.oregon.gov.

All written testimony/comment and requests to provide oral testimony/comment should be submitted three days or more in advance of the meeting. Three days allows testimony/comment to be processed by staff, included in the PERS board materials, and considered by board members.

***NOTE:** During its meetings, the PERS Board addresses the PERS program as a whole, not an individual member's benefits. If you have a specific concern about how PERS administers your individual benefits, please call PERS Member Services at 888-320-7277 or follow the PERS appeal process as outlined in OAR 459-001-0030.*

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

2023 Meetings: September 29, December 1*
2024 Meetings: February 2, April 1*, May 31, July 26*, October 4, December 6*
***Audit Committee planned for post-Board meeting**

July 28, 2023
PERS Board meeting agenda

Administration

1. June 2, 2023, PERS Board Meeting Minutes
2. Director's Report
   a. Forward-Looking Calendar
   b. OPERF Investment Report
   c. Budget Execution Report

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM BOARD MEETING MINUTES

June 2, 2023

Board members present:

Chair Sadhana Shenoy, Stephen Buckley, Jardon Jaramillo, Suzanne Linneen, and John Scanlan attended in the PERS Boardroom.

Staff present:

Kevin Olineck, Heather Case, Jake Winship, Katie Brogan, Neil Jones, Rebecca Craven, Sam Paris, and Yvette Elledge-Rhodes attended in the PERS Boardroom.

Abigail Churchill, Akiko Yoshida, Benjamin Cecka, Colin Campi, Daniel Rivas, David Larson, Elizabeth Rossman, Janice Ness, Janice Richards, Jason Stanley, Joel Mellor, Jonathan Yost, Jordan Masanga, Julie Coatney, Katie Davis, Karen Chavez, Matthew Graves, Melanie Chandler, Michael Duren, Michiru Farney, Phuongnam Tran, Richard Horsford, Rosanne Lurie, Shawn Harper, Stephanie Vaughn, Steven Cardinale, Susie Bodman, Tiffani Cairo, and Troy Phillips attended virtually.

Others present:

Matt Larrabee, Scott Preppernau, Jeff Gudman, Julie Nguyen, Jan Petrella, Erica Hedberg, Jen Stahel, and Sander Choffet attended in the PERS Boardroom.

Aaron Hunter, Alice Bibler, Andrea Bradbury, Anne Marie Vu, Anne Willis, Aruna Masih, Audrey Roberson, Carol Samuels, Cherry Chi, David Moore, David Randall, Debra Day, Dee-dra Kleve, Gary Smith, Gay Lynn Bath, Ian Peterson, Jacqueline King, Jeff Gudman, Jenna Grantham, Jeremy Whittlesey, Jessie Peterson, John Hershey, John Kevin Balaod, Julie Nguyen, Julie Rauch, Kali Leinenbach, Katie Kicza, Kevin Grainey, Leon Chin, Michelle Lisper, Nancy Brewer, Nate Carter, Nikki Mangnall, Noel Cruse, Patrick Weisgerber, Sara Collins, shannon Haas, Shauna Tobiasson, Steven Demarest, and Walker Phillips attended virtually.

Chair Shenoy called the meeting to order at 9:02 a.m.

ADMINISTRATION

A.1. MEETING MINUTES OF APRIL 3, 2023

Board Member Buckley moved to approve the minutes as presented from the April 3, 2023, PERS Board meeting as presented. Board Member Jaramillo seconded the approval of the minutes. The motion passed unanimously.

A.2. ELECTION OF VICE CHAIR, BOARD GOVERNANCE ASSIGNMENTS

Board Member Jaramillo moved to appoint Board Member Buckley to the position of Vice Chair. Board Member Scanlan seconded the motion. The motion passed unanimously.

Vice Chair Buckley moved to approve the PERS Board member governance assignments as presented. Board Member Scanlan seconded the motion. The motion passed unanimously.

A.3. DIRECTOR’S REPORT

Director Kevin Olineck presented the Director’s Report, which is a summary of items for the board to be aware of and the forward-looking calendar. He noted that the forward-looking calendar lists the 2024 PERS Board meeting dates.

The Oregon Public Employees Retirement Fund (OPERF) returns, for the period ending April 30, 2023, were 2.21%.

Operating expenditures for March, April, and preliminary expenditures for May are $4,253,991, $4,737,153, and $5,976,271, respectively.

Through May 12, 2023, the agency has expended a total of $108,326,841 or 85.6% of PERS' legislatively approved operations budget of $126,596,362. Currently, the agency's projected variance is $6,298,878 or 5.0%.

Olineck reviewed the meeting agenda. Chair Shenoy acknowledged the staff who were nominated as public service ambassadors for Public Service Recognition Week.

A.4. ANNUAL REPORT OF BOARD MEMBER TRAINING ACTIVITIES

Olineck presented the Annual Report of Board Member Training Activities. At the May 2020 board meeting, the board adopted the Board Education Policy. The Policy states the director will prepare a yearly report on the training activities of the PERS Board members. This report satisfies the requirement.

No board action was required.

A.5. BOARD SELF-EVALUATION

Based on a review of practices of peer organizations, PERS developed two documents to assist the PERS Board with conducting regular self-assessments. These documents will assist them in identifying where they are performing well as a board, as well as help them identify opportunities for improvement. The review will take place every two years.

Board Member Scanlan moved to adopt the new board evaluation documents, as presented. Board Member Jaramillo seconded the motion. The motion passed unanimously.

A.6. BOARD SCORECARD REPORT ON AGENCY PERFORMANCE MEASURES

Matt Rickard of the PERS Outcome-Based Management System (POBMS) Council presented the Board Scorecard Report on Agency Performance Measures, of which 66% of the reported measures are in the green range. The next Board Scorecard Report will be presented at the December meeting.

No board action was required.

ADMINISTRATIVE RULEMAKING

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

B.1. NOTICE OF OSGP SELF-DIRECTED BROKERAGE OPTION RULE

Vaughn presented Notice of Rulemaking Oregon Savings Growth Plan (OSGP) Self-Directed Brokerage Option Rule, OAR 459-050-0120, Self-Directed Brokerage Option.

A rulemaking hearing will be held remotely on June 28, 2023, at 2:00 p.m. The public comment period ends July 3, 2023, at 5:00 p.m.

B.2. NOTICE OF MINIMUM DISTRIBUTIONS ON PRERETIREMENT DEATH BENEFIT PAYOUT

Vaughn presented Notice of Required Minimum Distribution Rules, OAR 459-005-0560, Required Minimum Distributions, Generally, OAR 459-005-0570, Required Minimum Distributions, Individual Account Program (IAP), OAR 459-050-0300, Required Minimum Distribution Requirements.

A rulemaking hearing will be held remotely on June 28, 2023, at 2:00 p.m. The public comment period ends July 3, 2023, at 5:00 p.m.

B.3. ADOPTION OF OPSRP EARNINGS CREDITING RULE

Vaughn presented Adoption of Permanent Rulemaking to update Oregon Public Service Retirement Plan (OPSRP) earnings crediting rule, OAR 459-007-0340, Crediting Earnings for an OPSRP Pension Program Cash Out of Small Benefits or Withdrawal.

A rulemaking hearing was held remotely on April 27, 2023, at 2:00 p.m. The public comment period ended May 2, 2023, at 5:00 p.m. No public comments were received.

Board Member Scanlan moved to a adopt the changes to OAR 459-007-0340, as presented. Board Member Jaramillo seconded the motion. The motion passed unanimously.

ACTION AND DISCUSSION ITEMS

C.1. LEGISLATIVE UPDATE

Heather Case, Senior Policy Advisor, presented.

Case provided an update on the 2023 legislative session, PERS' agency bills, bills impacting PERS, the PERS budget presentations, and required reporting. An update will be provided at the July 28, 2023, PERS Board meeting.

No board action was required.

C.2. PERS MODERNIZATION PROGRAM UPDATE

Rebecca Craven, Modernization Program Director, presented.

Craven reviewed the background and current activities of the program. A request for $9,573,073 to continue modernization efforts during the 2023-2025 biennium is still progressing through the biennial budgeting process. An update on 2023-25 activity preparations was provided.

No board action was required.

C.3. PERS HEALTH INSURANCE PLAN ANNUAL UPDATE

Karen Chavez, PERS Health Insurance Program Manager, presented the PERS Health Insurance Program (PHIP) annual update. Chavez reviewed the mission, core operating principles, resources, consultants, membership, and health plans associated with the program.

No board action was required.

C.4. 2023 RETIREE HEALTH INSURANCE PLAN RENEWALS AND RATES

Karen Chavez, PERS Health Insurance Program Manager, presented.

Chavez presented the 2024 PHIP Plans and Rates. Board members discussed variables in the rate setting process.

Board Member Scanlan moved to approve the proposed PHIP request-for-proposal (RFP) contract renewals, benefits, and rates for the 2024 Plan Year as presented in Item C.4.Attachment 1: PHIP 2024 Proposed Rates. Board Member Buckley seconded. The motion passed unanimously.

C.5. OVERVIEW OF SIDE ACCOUNTS

Jake Winship, Actuarial Services Manager, presented an overview of side accounts including definitions, deposit criteria, validation process, calculation of rate offset, and expiration of accounts.

No board action was required.

C.5. OVERVIEW OF ACTUARIAL METHODS AND ECONOMIC ASSUMPTIONS

Scott Preppernau and Matt Larrabee of Milliman presented an overview of economic assumptions and system funding methods. The presentation reviewed inflation and system payroll growth, the assumed rate, and actuarial methods including amortization and collaring policy. At the July 2023 meeting, demographic assumptions will be discussed before asking for adoption of the assumptions and methods for the current and next year's advisory valuation. They will come back with the 2022 valuations results in October 2023.

No board action was required.

Director Olineck acknowledged the receipt of written public testimony on item C.5. from Douglas Berg on behalf of the PERS Board.

Chair Shenoy adjourned the PERS Board meeting at 11:45 a.m.

Respectfully submitted,

Kevin Olineck, Director

July 28, 2023
PERS Board meeting agenda

Administration

1. June 2, 2023, PERS Board Meeting Minutes
2. Director's Report
   a. Forward-Looking Calendar
   b. OPERF Investment Report
   c. Budget Execution Report

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Director’s Report

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM
Kevin Olineck, Director

Overview

This Director’s Report tries to encapsulate, at a high level, noteworthy changes that have taken place since the last board meeting, while highlighting staff accomplishments.

Highlights

I want to continue to highlight where PERS’ staff have not only made great progress with standard operational processes, but have also made significant progress on strategic initiatives. The following are undertakings that deserve to be highlighted, with staff publicly acknowledged for their efforts.

Agency initiatives and accomplishments

Launch of new website PERS launched a new and improved website at the end of June. The website, upgraded to the state’s newest platform, features a customized layout and appearance, along with updated and new information. The new site is designed to help members and employers find the information they need more easily.

Highlights:

- Links to the most-used information are on the homepage.
- Information is organized by category.
- If users cannot find what they want, they can check Popular Links, or use the search bar.
- New About PERS section includes expanded information about PERS benefits and programs.
- The Frequently Asked Questions section includes new questions.

continued on page 2

continued from page 1

PERS homepage

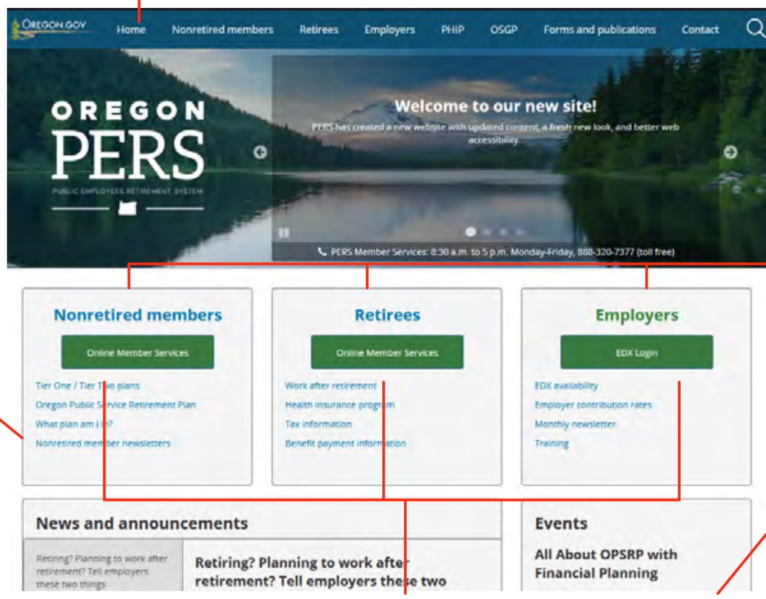
Quick access to main sections available at top

Carousel rotates through four screens

Click to enter a subsite

Most-popular info in each section listed for easy access

Scroll down for news, events, and videos



Access to OMS and EDX

Employers site

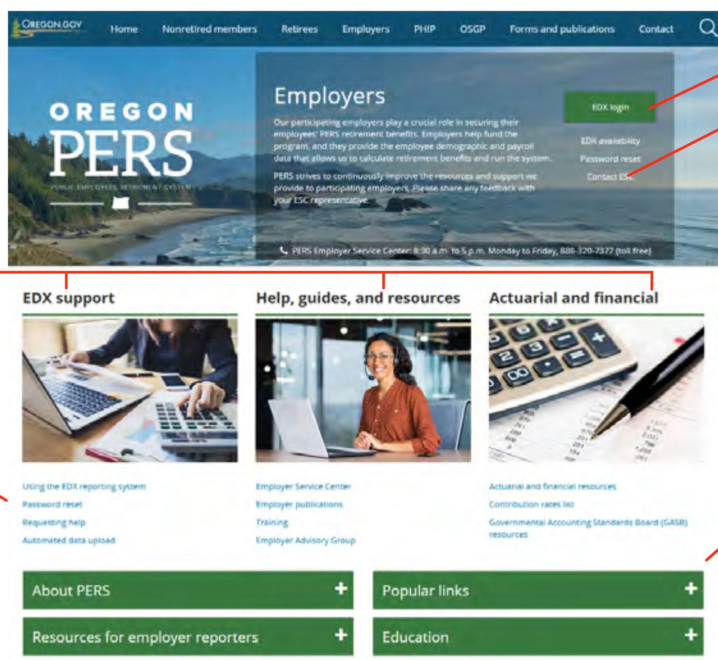
Quick access to EDX login

Click for ESC contact info

Employers' most-needed topics listed first

Find most-popular information for each topic listed here

Scroll down for lists of webpages about PERS benefits and programs, EDX reporting, actuarial and financial resources, FAQs, and more



2023 Income Replacement Ratio Study

Annually, our Actuarial Activities Section engages in a replacement ratio study based on the prior year's retirement data. This information will be published in the 2023 *PERS by the Numbers*. A summary is also provided here.

Summary of findings, 2023 Income Replacement Ratio Study

- Average age at retirement for applicable 2022 retirees: 61 years old
- Average years of service at retirement for applicable 2022 retirees: 27 years of service
- Average monthly retirement benefit:
  - For all retirees from 1990 – 2022, the average monthly retirement benefit at time of retirement was $2,515 per month, or about $30,175 annually.
  - For those retirees in the most recent year (2022), the average monthly retirement benefit was $3,474 per month, or about $41,692 annually.

Average salary replacement ratio

- For all retirees from 1990 – 2022, the final average salary at retirement was $58,320 annually.
- For 2022 retirees, the final average salary at retirement was $93,092 annually.
- For all retirees from 1990 – 2022, the average annual retirement benefit equaled 51% of final average salary at the time of retirement.
- For 2022 retirees, the average annual retirement benefit equaled 44% of final average salary.
- For all retirees from 1990 – 2022, there were 5.6% who received annual benefits more than 100% of final average salary. The average of years of service for this group was 31 years.
- For 2022 retirees, 0.7% received annual benefits more than 100% of final average salary. The average of years of service for this group was 37 years.
- For members who retired with 30 years of service:
  - From 1990 – 2022, the average retirement benefit for 30-year members equaled 74% of final average salary and the average monthly benefit was $3,756 per month.
  - The average replacement ratio for 30-year members peaked at 100% of final average salary in 2000 and their average monthly benefit was $4,200 per month.
  - For 2022 only, the average retirement benefit for 30-year members equaled 50% of final average salary and the average monthly benefit was $4,276 per month.
- 10.2% of retirees from 1990 – 2022 had 30 years of service.
- 10.4% of retirees in 2022 had 30 years of service.

Safety Committee As we move into the second year of our hybrid and remote work environment, our Safety Committee is reviewing how best to integrate safety processes into this new work setup. As part of our ongoing commitment to workplace safety, we are taking measures to create a secure environment for staff and visitors.

One step includes providing de-escalation training for staff and CPR and First Aid Training.

We also distributed glowsticks and whistles to all workstations for on-site and hybrid staff members. These safety tools have been carefully chosen to enhance our emergency preparedness measures.

Visitors to the PERS headquarters building will also notice that, as part of our deferred maintenance program, we recently made repairs to the entire parking lot, complete with full sealcoating and repainted lines.

Update on Governor's expectations

1. Performance reviews for agency directors

As noted in the Audit and Risk Committee Agenda, a 360-degree assessment is in process to evaluate the Director's performance for the past fiscal year. Going forward, in even numbered years, the board will continue to do an annual performance review, while in odd-numbered years going forward, PERS will engage with a vendor to conduct the 360-degree assessment with revised questions to ensure consistency across all state agencies.

2. Performance feedback for employees

PERS' managers are expected to conduct quarterly Performance Assessment and Feedback (PAF) sessions with all staff. While the expectation is to have 90% of these assessments completed on a quarterly basis, in the past two quarters, PERS' managers have completed 99% and 100% of the PAFs, respectively.

3. Measuring employee satisfaction

DAS has established a statewide agreement with Gallup Inc. to perform surveying services. This enables cross-agency comparisons and trend analysis. PERS has signed on to the statewide agreement for these services with the goal of having our survey take place later this summer, which is close to our regular timing. As PERS has used the Gallup questions over the past three years, there will not be many changes to our process, and we can continue to understand trends from previous surveys.

4. Supporting strategic planning and measuring agency performance

PERS submitted our 2023-28 PERS Strategic Plan to DAS. As it meets the newly established criteria, PERS will not have to update the plan but will provide DAS the same annual progress reports as we will provide to the board at the upcoming December board meeting.

5. Managing information technology process

PERS is in the process of updating our current Information Technology Strategic Plan to align with the new enterprise IT Strategic Plan template and will be providing a copy to DAS once complete.

continued on page 5

continued from page 4

6. Succession planning for the workforce

As noted in the June Director's Report, PERS recently finalized our succession plan and we are actively engaged in actioning the tactics within the plan. We will also be providing a copy of our plan to DAS.

7. State government commitment to diversity, equity, and inclusion (DEI)

PERS has submitted our strategy for the DEI plan which sets out how, by the end of this calendar year, PERS will develop a full Diversity, Equity, Inclusion, and Access Plan. We have been, and will continue, leveraging our PERS Diversity Committee to assist in both these efforts. Additionally, we submitted our Affirmative Action Plan earlier in the year.

8. Agency emergency preparedness

This expectation requires agencies to have in place and update annually a continuity of operations plan (COOP). Agencies must submit a copy of their current plan to the Oregon Department of Emergency Management no later than Sept. 30, 2023. PERS has had a COOP in place for quite a few years and so will be submitting this prior to the deadline.

9. Agency hiring practices

The expectation is that agencies should work within a recruiting cycle of 50 days. The start is calculated from the date the position posts in Workday. The clock stops on the date the offer is accepted or the filled date, whichever is first. Our Human Resources Section is working with our management staff to refine all the steps, as the 50-day cycle can only work where there is complete synchronization throughout the process. In the first quarter, the recruiting cycle for PERS averaged 65 days.

10. Audit accountability

Agencies are required to report to DAS on audit recommendation status twice a year— May 31 and November 30— with our first report due November 30, 2023. DAS has asked agencies to report information about the status of each open recommendation and their sub status (in progress, not yet started) and closed recommendations and their sub status (implemented, agency accepts risk, agency disagrees). Our internal audit group will be coordinating this reporting.

11. Developing new employees and managers

There are three components to this expectation:

1. Agencies will have their new managers complete the DAS Foundational training program and enroll into a cohort within five business days of their position start date.
2. Agencies must have a new employee orientation (NEO) program. All agencies must be able to demonstrate that 100% of their new employees participate in the agency NEO program within 60 days of hire. Additionally, agencies need to submit to DAS their agency NEO program for approval.
3. Agencies will have their new employees participate in the DAS customer service training within 60 days of hire. This is a new training module designed to ensure consistent customer service for all agencies.

Our Human Resources section is engaged in ensuring that we comply with these three components. PERS has established and run a NEO program for years and will review and update the curriculum to ensure compliance.

PERS BOARD MEETING
FORWARD-LOOKING CALENDAR

Friday, September 29, 2023
PERS Member and Employer Survey results
Legislative update or Legislative concepts — if needed
PERS Modernization Program update
Funding Policy review
Final Adoption of Valuation Methods and Assumptions including Assumed Rate of Return
Valuation Results — Advisory Employer Rates
Final Adoption of Assumed Rate Oregon OAR

Friday, December 1, 2023*
Board Scorecard Report on agency performance measures
Senate Bill 1049 update
PERS Strategic Plan update
Valuation update and financial modeling results
Adoption of Actuarial Equivalency Factor Tables

**Audit and Risk Committee planned for post-board meeting*

2024 PERS Board meeting dates
9:00 a.m. start times

- February 2
- April 1*
- May 31
- July 26*
- October 4
- December 6*

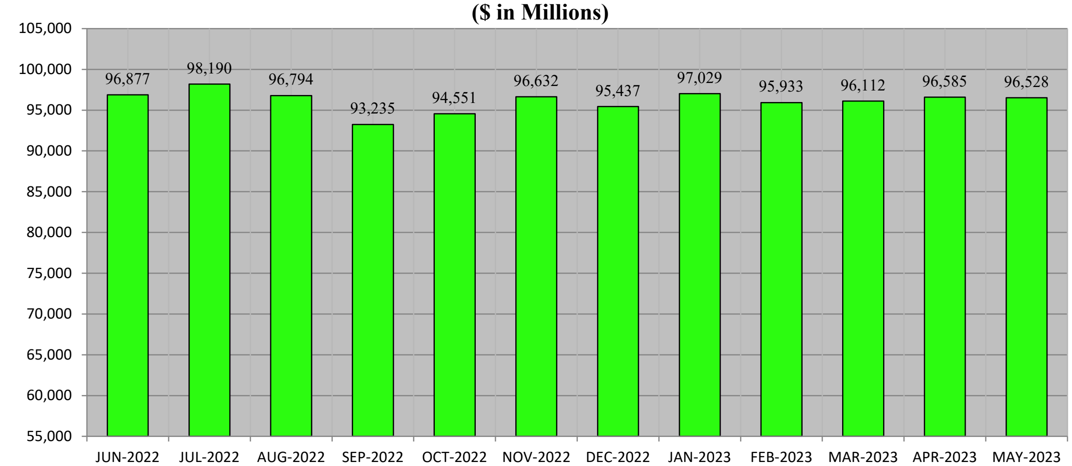
**Audit and Risk Committee planned for post-board meeting*

Returns for periods ending MAY-2023 **Oregon Public Employees Retirement Fund**

OPERF	Policy[1]	Target[1]	$ Thousands[2]	Actual	Year-To-Date[3]	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS	7 YEARS	10 YEARS
	Regular Account				Historical Performance (Annual Percentage)							
TOTAL OPERF Regular Account			**$ 92,890,761**		**2.48**	**0.11**	**4.51**	**11.24**	**8.93**	**7.83**	**8.79**	**8.21**
OPERF Policy Benchmark					*4.90*	*(1.42)*	*1.15*	*8.65*	*8.05*	*7.09*	*8.35*	*8.19*
Value Added					**(2.42)**	**1.53**	**3.36**	**2.59**	**0.89**	**0.73**	**0.43**	**0.01**
Oregon 70/30 Reference Benchmark					*5.62*	*(0.26)*	*(4.01)*	*5.95*	*6.07*	*4.93*	*6.50*	*5.97*
Public Equity	22.5-32.5%	27.5%	$ 15,441,485	16.6%	**4.53**	**(0.73)**	**(3.04)**	**11.16**	**8.77**	**6.20**	**8.93**	**7.96**
MSCI ACWI IMI Net					*7.00*	*0.27*	*(3.71)*	*10.04*	*8.59*	*6.31*	*8.70*	*7.68*
Private Equity	17.5-27.5%	20.0%	$ 25,702,482	27.7%	**3.31**	**(3.00)**	**10.52**	**20.36**	**15.60**	**15.29**	**15.35**	**14.39**
Russell 3000+300 Bps Qtr Lag					*13.61*	*(9.60)*	*4.05*	*17.95*	*14.77*	*13.17*	*15.18*	*16.06*
Total Equity	**45.0-55.0%**	**47.5%**	**$ 41,143,967**	**44.3%**								
Total Fixed	**20-30%**	**25.0%**	**$ 21,576,758**	**23.2%**	**3.11**	**(0.73)**	**(3.86)**	**(2.21)**	**0.30**	**1.41**	**1.50**	**1.74**
Oregon Custom Fixed Income Benchmark					*2.46*	*(2.14)*	*(5.16)*	*(3.30)*	*(0.53)*	*0.74*	*0.87*	*1.18*
Risk Parity	**0**	**0.0%**	**$ 4,722**	**0.0%**								
S&P Risk Parity - 12% Target Volatility					*6.99*	*(9.88)*	*(3.56)*	*7.93*	*6.85*	*6.30*	*7.23*	*6.67*
Real Estate	**9.0-16.5%**	**12.5%**	**$ 13,647,719**	**14.7%**	**(3.85)**	**2.56**	**14.11**	**11.92**	**10.13**	**9.48**	**9.34**	**10.05**
Oregon Custom Real Estate Benchmark					*(7.32)*	*(0.55)*	*11.56*	*7.96*	*6.98*	*6.94*	*7.22*	*8.65*
Real Assets	**2.5-10.0%**	**7.5%**	**$ 8,823,442**	**9.5%**	**5.13**	**10.18**	**16.00**	**15.69**	**9.70**	**7.55**	**8.68**	**5.64**
CPI +4%					*4.15*	*8.20*	*10.52*	*10.07*	*8.55*	*8.01*	*7.55*	*6.80*
Diversifying Strategies	**2.5-10.0%**	**7.5%**	**$ 4,986,152**	**5.4%**	**(1.40)**	**3.13**	**9.45**	**9.00**	**3.24**	**0.89**	**1.28**	**2.57**
HFRI FOF: Conservative Index					*1.07*	*1.59*	*1.59*	*6.37*	*4.35*	*3.75*	*3.94*	*3.31*
Opportunity Portfolio	**0-5%**	**0%**	**$ 2,686,663**	**2.9%**	**5.98**	**4.39**	**8.04**	**15.40**	**10.70**	**9.54**	**9.19**	**8.36**
Opportunity Custom Benchmark					*3.72*	*8.35*	*11.13*	*10.82*	*9.37*	*8.87*	*8.46*	*7.74*
Cash w/Overlay	**0-3%**	**0%**	**$ 21,339**	**0.0%**	**2.05**	**3.13**	**1.24**	**1.07**	**1.45**	**1.77**	**1.63**	**1.34**
91 Day Treasury Bill					*1.79*	*3.14*	*1.63*	*1.12*	*1.30*	*1.49*	*1.31*	*0.94*
Target Date Funds			**$ 3,392,907**									
TOTAL OPERF Variable Account			**$ 244,720**		**7.12**	**0.61**	**(3.60)**	**10.35**	**8.90**	**6.64**	**9.06**	**8.04**

Total OPERF NAV
(includes Variable Fund assets)
One year ending MAY-2023

($ in Millions)



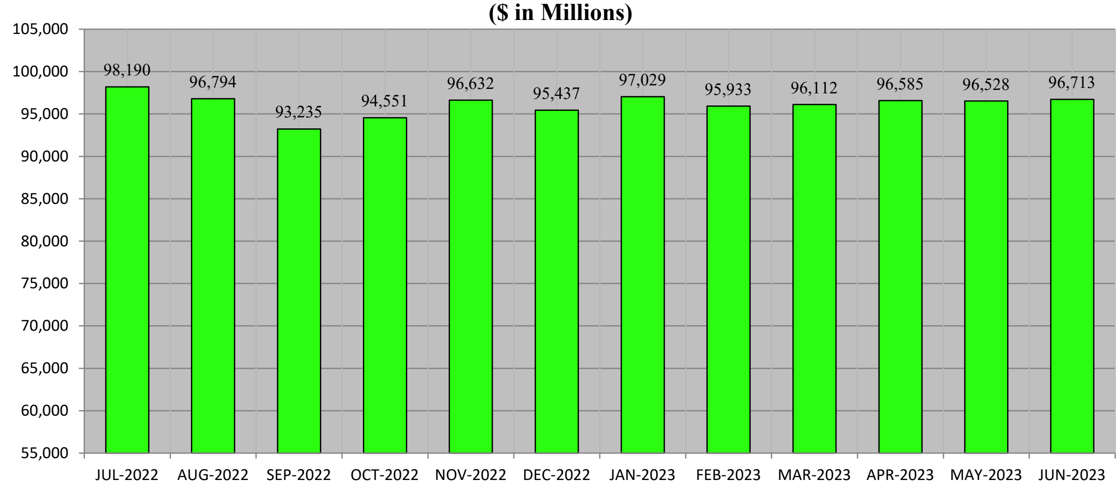
[1]OIC Policy revised April 2023.
[2]Includes impact of cash overlay management.
[3]For mandates beginning after January 1 (or with lagged performance), YTD numbers are "N/A". Performance is reflected in Total OPERF. YTD is not annualized.

Returns for periods ending JUN-2023 **Oregon Public Employees Retirement Fund**

	Regular Account				Historical Performance (Annual Percentage)							
OPERF	**Policy[1]**	**Target[1]**	**$ Thousands[2]**	**Actual**	**Year-To-Date[3]**	**1 YEAR**	**2 YEARS**	**3 YEARS**	**4 YEARS**	**5 YEARS**	**7 YEARS**	**10 YEARS**
TOTAL OPERF Regular Account			**$ 93,005,418**		**3.35**	**3.17**	**4.74**	**11.26**	**8.47**	**8.08**	**8.84**	**8.33**
OPERF Policy Benchmark					*6.99*	*3.73*	*1.51*	*9.35*	*7.62*	*7.54*	*8.54*	*8.37*
Value Added					**(3.64)**	**(0.56)**	**3.22**	**1.91**	**0.85**	**0.54**	**0.30**	**(0.04)**
Oregon 70/30 Reference Benchmark					*9.66*	*10.76*	*(2.71)*	*6.43*	*5.80*	*5.82*	*7.06*	*6.64*
Public Equity	22.5-32.5%	27.5%	$ 15,876,292	17.1%	**10.95**	**14.92**	**(0.21)**	**12.41**	**8.69**	**7.66**	**9.96**	**8.91**
MSCI ACWI IMI Net					*13.25*	*16.14*	*(1.54)*	*10.97*	*8.43*	*7.65*	*9.70*	*8.62*
Private Equity	17.5-27.5%	20.0%	$ 25,884,129	27.8%	**3.45**	**(1.84)**	**10.43**	**20.68**	**15.44**	**15.36**	**15.30**	**13.87**
Russell 3000+300 Bps Qtr Lag					*16.55*	*(5.81)*	*4.19*	*21.99*	*14.18*	*13.74*	*15.32*	*15.06*
Total Equity	**45.0-55.0%**	**47.5%**	**$ 41,760,421**	**44.9%**								
Total Fixed	**20-30%**	**25.0%**	**$ 21,263,735**	**22.9%**	**3.04**	**0.70**	**(4.30)**	**(2.48)**	**(0.01)**	**1.40**	**1.26**	**1.93**
Oregon Custom Fixed Income Benchmark					*2.09*	*(0.94)*	*(5.64)*	*(3.58)*	*(0.88)*	*0.68*	*0.58*	*1.34*
Real Estate	**9.0-16.5%**	**12.5%**	**$ 13,607,509**	**14.6%**	**(5.42)**	**(1.38)**	**13.06**	**11.41**	**9.66**	**8.89**	**8.77**	**9.69**
Oregon Custom Real Estate Benchmark					*(8.37)*	*(3.91)*	*10.58*	*7.46*	*6.56*	*6.56*	*6.75*	*8.25*
Real Assets	**2.5-10.0%**	**7.5%**	**$ 8,855,366**	**9.5%**	**5.20**	**9.54**	**16.15**	**15.49**	**9.59**	**7.60**	**8.63**	**5.62**
CPI +4%					*4.83*	*7.08*	*10.19*	*9.99*	*8.63*	*8.04*	*7.55*	*6.81*
Diversifying Strategies	**2.5-10.0%**	**7.5%**	**$ 4,972,944**	**5.3%**	**0.25**	**5.83**	**11.32**	**10.15**	**3.55**	**1.56**	**1.71**	**2.72**
HFRI FOF: Conservative Index					*1.78*	*3.47*	*1.77*	*6.01*	*4.35*	*3.89*	*4.11*	*3.45*
Opportunity Portfolio	**0-5%**	**0%**	**$ 2,543,948**	**2.7%**	**6.90**	**6.10**	**8.13**	**15.42**	**11.26**	**9.68**	**9.26**	**8.56**
Opportunity Custom Benchmark					*5.79*	*8.58*	*11.49*	*11.20*	*9.79*	*9.17*	*8.65*	*7.88*
Cash w/Overlay	**0-3%**	**0%**	**$ 1,494**	**0.0%**	**2.40**	**3.64**	**1.42**	**1.10**	**1.45**	**1.80**	**1.66**	**1.38**
91 Day Treasury Bill					*2.25*	*3.59*	*1.87*	*1.27*	*1.36*	*1.55*	*1.37*	*0.98*
Target Date Funds			**$ 3,455,481**									
TOTAL OPERF Variable Account			**$ 252,215**		**13.37**	**16.42**	**(1.23)**	**11.29**	**8.75**	**7.97**	**10.06**	**8.97**

Total OPERF NAV
(includes Variable Fund assets)
One year ending JUN-2023

($ in Millions)



[1]OIC Policy revised April 2023.
[2]Includes impact of cash overlay management.
[3]For mandates beginning after January 1 (or with lagged performance), YTD numbers are "N/A". Performance is reflected in Total OPERF. YTD is not annualized.

Oregon
Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

FROM: Gregory R. Gabriel, Budget Officer

SUBJECT: July 2023 Budget Report

2021-23 OPERATING BUDGET

Operating expenditures for May and preliminary expenditures for June are $4,523,912 and $6,719,620 respectively. Final expenditures for June closed in the Statewide Financial Management System on July 14 and will be included in the September 2023 report to the PERS Board.

- Through July 7, 2023, the agency has expended a total of $113,146,074 or 89.4% of PERS' legislatively approved operations budget of $126,596,362.
- At this time, the agency's projected variance is $6,456,445 or 5.1%.
- Core Retirement Systems Applications (CRSA) expenditures for May and preliminary expenditures for June are $490,196, and $1,513,732 respectively. As of July 7, the agency has expended $22,239,942 or 80.1% of the legislatively approved budget of $27,765,009.
- At this time, the CRSA projected variance is $2,780,040 or 10.0%.

2021-23 NON-LIMITED BUDGET

The adopted budget includes $12,886,613,593 in total estimated non-limited expenditures. Non-limited expenditures include benefit payments, health insurance premiums, and third-party administration payments for both the PERS Health Insurance Program (PHIP) and the Individual Account Program (IAP).

- Non-limited expenditures through July 7, 2023, are $12,296,653,040.

2023-25 LEGISLATIVELY ADOPTED BUDGET

The agency's Legislatively Adopted Budget for 2023-25 (House Bill 5033) has been finalized, but not yet signed by the Governor at the time of this publication. PERS' operating limitation totaling $166,910,377 was approved, which includes $20,131,772 to complete work on Senate

Bill (SB) 1049 related implementation and $9,573,073 to begin modernization efforts on the pension system.

The adopted budget also consists of $13,523,120,517 in non-limited budget, which represents benefit payments, health insurance premiums, and third-party administration payments for both the PERS Health Insurance Program and the Individual Account Program.

Further budget adjustments impacting PERS have been made in SB 5506 (End-of-Session Bill), which resulted in an increase of a Lottery Funds transfer of $7,310,000 related to the Employer Incentive Fund. More detailed information on the 2023-25 Legislatively Adopted Budget can be found in Item C.1.b.

A.2.c. Attachment – 2021-23, CRSA, Agency-wide Budget Execution Summary Analysis

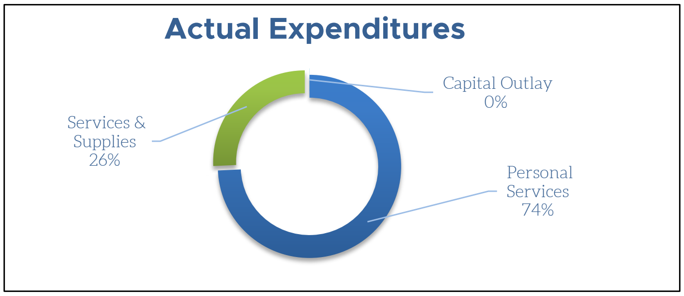
PERS Monthly Budget Report

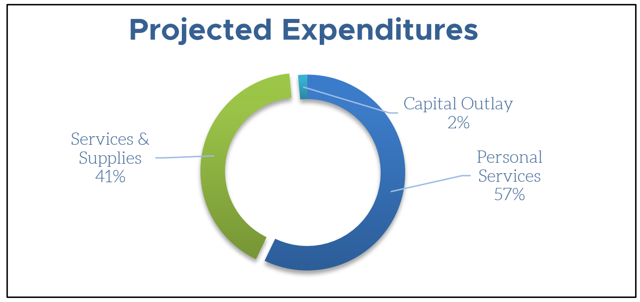
2021-23 Agency-Wide Budget Execution
Preliminary Summary for the Month of June 2023

Limited - Operating Budget

2021-23 Biennial Summary

Category	Actual Exp. To Date	Projected Expenditures	Total Est. Expenditures	2021-23 LAB	Variance
Personal Services	84,058,221	3,997,250	88,055,471	91,033,361	2,977,890
Services & Supplies	29,066,408	2,891,593	31,958,001	34,094,093	2,136,092
Capital Outlay	21,445	105,000	126,445	1,468,908	1,342,463
Unscheduled				0	0
Total	113,146,074	6,993,843	120,139,917	126,596,362	6,456,445





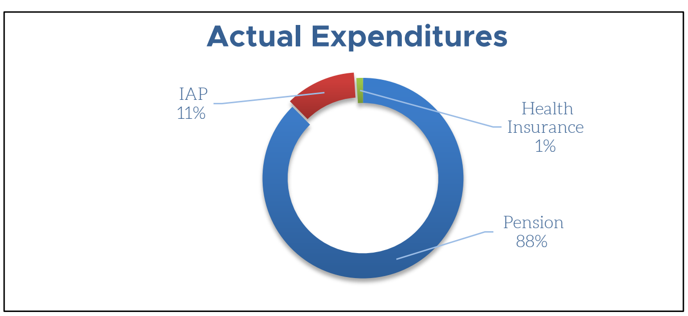
Monthly Summary

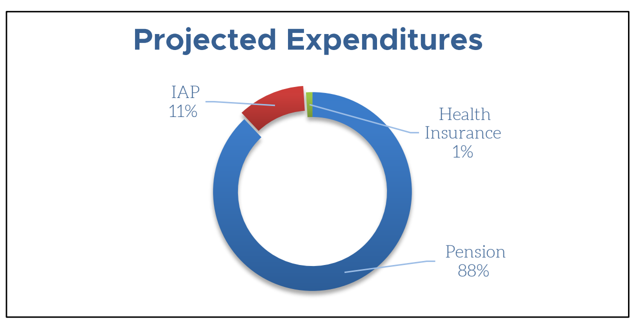
Category	Actual Exp.	Projections	Variance	Avg. Monthly Actual Exp.	Avg. Monthly Projected Exp.
Personal Services	3,857,346	3,997,250	139,904	3,620,435	3,966,667
Services & Supplies	2,760,949	2,861,087	100,138	1,318,502	1,259,021
Capital Outlay	101,325	105,000	3,675	1,129	75,000
Total	6,719,620	6,963,337	243,716	4,940,066	5,300,688

Non-Limited Budget

2021-23 Biennial Summary

Programs	Actual Exp To Date	Projected Expenditures	Total Est. Expenditures	Non-Limited LAB	Variance
Pension	10,772,011,471	445,546,887	11,217,558,358	11,215,517,678	(2,040,680)
IAP	1,394,370,312	4,523,561	1,398,893,874	1,298,603,848	(100,290,026)
Health Insurance	130,271,257	2,702,966	132,974,223	372,492,067	239,517,844
Total	12,296,653,040	452,773,415	12,749,426,455	12,886,613,593	137,187,138





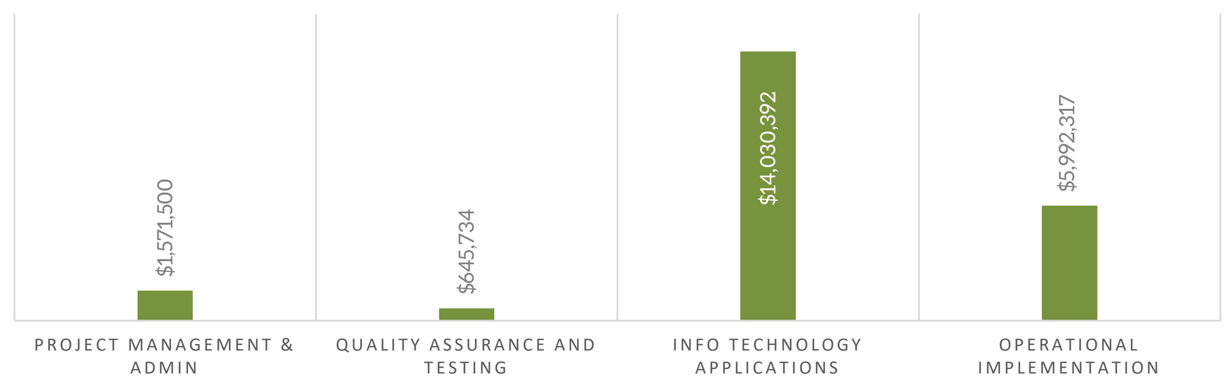
Core Retirement Systems Application

Summary Budget Analysis
Preliminary for the Month of June 2023

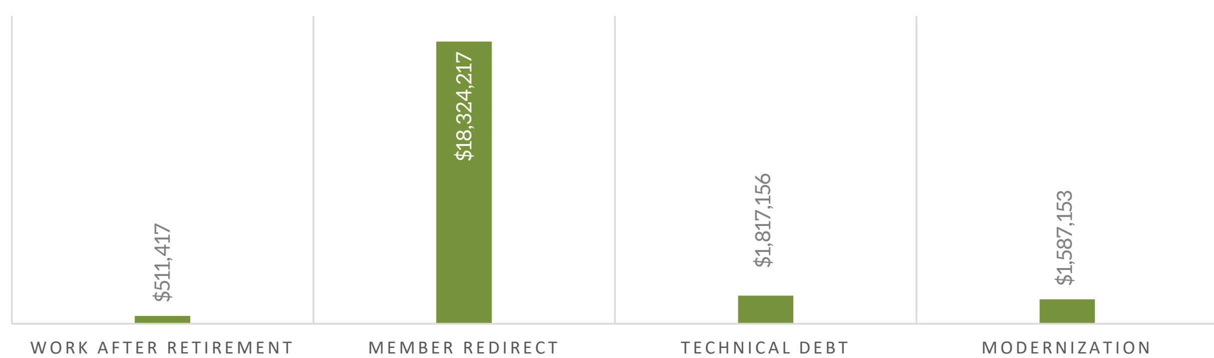
Biennial Summary

Category	Actual Exp. To Date	Projected Expenditures	Total Est. Expend.	2021-23 LAB	Variance
Personal Services	5,705,753	769,120	6,474,873	7,037,101	562,228
Services & Supplies	16,517,954	1,975,907	18,493,861	20,672,908	2,179,047
Capital Outlay	16,235		16,235	55,000	38,765
Total	22,239,942	2,745,027	24,984,969	27,765,009	2,780,040

EXPENDITURES BY PACKAGE



EXPENDITURES BY PROJECT



July 28, 2023
PERS Board meeting agenda

Administrative rulemaking

1. Introduction of policy coordinators
2. Notice of Retirement Benefit Rules
3. Adoption of Self-Directed Brokerage Account Rule for OSGP
4. Adoption of Required Minimum Distribution Rules

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Oregon
Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

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

SUBJECT: Introduction of Policy Analysis and Compliance Section (PACS) Policy Coordinators

The Policy Coordinators who work diligently to draft and edit PERS' Administrative Rules are members of the policy team within the Policy Analysis and Compliance Section (PACS). They research both federal and state law, consider agency policies and practices, and work with staff across the agency to ensure the amendments are clear and administrable. Each has a specific area of focus within PERS, as noted below.

In addition to working on Administrative Rules, they provide policy guidance to the agency, work with inside and outside stakeholders on policy issues, work on development of legislative concepts, provide legislative analysis during legislative session and implementation, track federal legislation as it relates to public retirement plans, and ensure compliance with federal law.

PACS Policy Coordinators:

Anne Marie Vu has served as a Research Policy Coordinator since 2012, with a focus on Membership and Eligibility. Originally from the Portland area, she attended the University of Portland and spent an academic year abroad at the Université de Paris IV – La Sorbonne. Prior to joining PERS, she worked as a securities litigator at Milberg LLP in New York, representing individuals and institutional investors.

Ms. Vu received a J.D. from the Benjamin N. Cardozo School of Law and a B.A. in Political Science and French Languages from the University of Portland.

Melanie Chandler has served as a Research Policy Coordinator since 2016, with a focus on Benefits, Disability, and Calculations and currently serves as the Policy Team Lead. Prior to joining the Policy side of PACS, she spent two years learning the PERS-ropes as a Legal Liaison on the Appeals team, handling disability and non-disability appeals and contested cases. Before her tenure at PERS, Ms. Chandler worked in the health care administration and legal fields.

Ms. Chandler received a J.D. from Seton Hall University School of Law and a B.S. in Finance-Law and Marketing from Portland State University.

Yong Yang has served as the Tax Policy Coordinator since 2011, with a focus on plan qualification and all matters related to state and federal tax. He is responsible for identifying and interpreting Internal Revenue Service and Oregon Department of Revenue tax laws and regulations with which PERS must comply. He also worked as a Business Rules Writer at PERS before stepping into the Tax Policy Coordinator position. Prior to joining PERS, Yong worked as a financial advisor for Merrill Lynch and was an associate attorney for Schwabe Williamson & Wyatt.

Mr. Yang received a J.D. from University of Oregon School of Law and a B.S. in Finance from University of Southern California.

July 28, 2023
PERS Board meeting agenda

Administrative rulemaking

1. Introduction of policy coordinators
2. Notice of Retirement Benefit Rules
3. Adoption of Self-Directed Brokerage Account Rule for OSGP
4. Adoption of Required Minimum Distribution Rules

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Oregon
Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

FROM: Melanie Chandler, Research Policy Coordinator, Policy Analysis and Compliance Section
Stephanie Vaughn, Manager, Policy Analysis and Compliance Section

SUBJECT: Notice of Rulemaking for Retirement Benefits Rules

OAR 459-013-0060 *Payment of Retirement Benefits*

OAR 459-075-0170 *Payment of OPSRP Pension Program Benefits*

OVERVIEW

- Action: None. This is notice that staff has begun rulemaking.
- Reason: Clarify how PERS administers the conversion of survivorship retirement benefits to single life (Option 1) retirement benefits in event of death or divorce.
- Policy Issue: None identified.

BACKGROUND

Tier One and Tier Two members have thirteen retirement options, including a one hundred percent survivorship option (Option 2) and a fifty percent survivorship option (Option 3). Options 2A and 3A provide similar benefits as Options 2 and 3, but provide that, if the member's beneficiary should die before the member, or the beneficiary is the member's spouse and they divorce after member's retirement, the member may elect to convert ("pop-up") their benefit to a single life benefit (Option 1). In both scenarios, the change to the higher Option 1 benefit is not processed until PERS has been notified in a format acceptable to PERS.

OPSRP members have five retirement options, including similar pop-up options. An OPSRP member who elects to receive a conditional joint and survivor pension may convert their benefit to the single life option if the member's beneficiary dies after the member retires or the marriage relationship with the beneficiary is terminated after the member retires.

Administration of pop-up requests is generally straightforward; however, staff has identified two aspects where clarification of PERS' application of the statutes would benefit members and beneficiaries. First, in order to convert a member's benefit to the higher paying Option 1 or Single Life Option, PERS must receive the member's request prior to the member's date of death. Second, in order for PERS to comport with federal law, in cases where the conversion is triggered by the termination of the member's marriage, a member is only eligible to convert their benefit if the member was married to the beneficiary on the member's date of retirement.

PUBLIC COMMENT AND HEARING TESTIMONY

A rulemaking hearing will be held remotely on August 29, 2023, at 2:00 p.m. The public comment period ends September 4, 2023, at 5:00 p.m.

LEGAL REVIEW

The attached rules were submitted to the Department of Justice for legal review and any comments or changes will be incorporated before the rules are presented for adoption.

IMPACT

Mandatory: No.

Benefit: Updates the rules to reflect current agency practice and provides clarification for members and employers.

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

RULEMAKING TIMELINE

July 28, 2023	Staff began the rulemaking process by filing Notice of Rulemaking with the Secretary of State.
July 28, 2023	PERS Board notified that staff began the rulemaking process.
August 1, 2023	Secretary of State publishes the notice in the Oregon Administrative Rules Database. Notice is sent to employers, legislators, and interested parties. Public comment period begins.
August 29, 2023	Rulemaking hearing to be held remotely at 2:00 p.m.
September 5, 2023	Public comment period ends at 5:00 p.m.
September 29, 2023	Staff will propose adopting the rule modifications, including any changes resulting from public comment or reviews by staff or legal counsel.

NEXT STEPS

A rulemaking hearing will be held remotely on August 29, 2023. The rule is scheduled to be brought before the PERS Board for adoption at the September 29, 2023, board meeting.

B.2. Attachment 1 – OAR 459-013-0060 *Payment of Retirement Benefits*
B.2. Attachment 2 – OAR 459-075-0170 *Payment of OPSRP Pension Program Benefits*

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 13 – Retirement Benefits

OAR 459-013-0060

Payment of Retirement Benefits

(1) Retirement benefits shall be payable each month as of the first day of the month following the effective date of retirement.

(a) When the first day of the month falls on a weekend or a PERS holiday, retirement benefits processed through electronic funds transfer shall be payable on the last PERS working day of the prior month.

(b) At the time of death, accrued benefits shall be payable as provided under OAR 459-014-0050(4).

(2) If a retiree elects to receive more than one installment payment as provided under ORS 238.305(4), the subsequent installment payments will be paid on the anniversary of the first day of the month that the initial installment payment was made.

(3) Notwithstanding section (1) of this rule, retirement benefits payable on January 1 shall always be paid in the month of January.

(4) A retired member who is eligible to convert their service retirement allowance as described in ORS 238.305(6), 238.305(7) or 238.325(3) must submit a request to convert their benefit before the retirement benefit can be increased to the higher paying Option 1 benefit. The request must be in a format approved by PERS and received by PERS prior to member's date of death. To be eligible to convert their benefit pursuant to the termination of a marriage, the member and the beneficiary must have been married on the member's effective date of retirement.

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 75 - OPSRP Pension Program

OAR 459-075-0170

Payment of OPSRP Pension Program Benefits

(1) Definitions. For purposes of this rule:

(a) "Benefit recipient" means an OPSRP Pension Program member, surviving beneficiary or alternate payee who is entitled to receive a retirement benefit under the OPSRP Pension Program.

(b) "Non-survivorship benefit" means a lifetime benefit that is paid to an eligible benefit recipient and ends after death.

(c) "Survivorship benefit" means a survivor monthly pension benefit that is paid to a surviving beneficiary after an OPSRP Pension Program member's death.

(2) An OPSRP monthly pension benefit **shall be payable each month as of the first day of the month following the effective date of retirement.** ~~accrues on the first day of the calendar month and shall be paid to the benefit recipient on the first day of the following month.~~

(a) When the first day of the month falls on a weekend or a PERS holiday, retirement benefits processed through electronic funds transfer shall be payable on the last PERS working day of the prior month.

(b) At the time of death, benefits accrued by the member or alternate payee before their death, less any outstanding invoice amounts, will be paid to the designated beneficiary pursuant to ORS 238A.190 or, in the event there is no designated

beneficiary at the time of member or alternate payee's death, to the member or alternate payee's estate.

(3) Notwithstanding section (2) of this rule, retirement benefits payable on January 1 shall always be paid in the month of January.

~~(3)~~ **(4)** ~~If~~ **When** a benefit recipient who is receiving an OPSRP pension dies ~~during a calendar month~~:

(a) ~~Non-survivorship benefits shall accrue on the first day of the month of death and shall be paid to the deceased member or deceased alternate payee on the first day of the following month.~~ **Benefit payments end on the first day of the month in which the benefit recipient dies pursuant to ORS 238A.180.**

(b) Survivorship benefits ~~shall accrue~~ **payable to a beneficiary are effective** on the first day of the month after the last payable OPSRP pension benefit to a deceased member or deceased alternate payee.

(5) Notwithstanding section (2) of this rule, retirement benefits payable on January 1 shall always be paid in the month of January.

~~(4)~~ **(6)** If the member or alternate payee is entitled to receive a cash-out of a small benefit under ORS 238A.195, the benefit accrues on the member's or alternate payee's effective retirement date and shall be paid to the member or alternate payee.

(7) A retired member who is eligible to convert their service retirement allowance as described in ORS 238A.190(3) must submit a request to convert their benefit before the retirement benefit can be increased to the higher paying Single Life Option benefit. The request must in a format approved by PERS and received by PERS

prior to member's date of death. To be eligible to convert their benefit pursuant to the termination of a marriage, the member and the beneficiary must have been married on the member's effective date of retirement.

Administrative rulemaking

1. Introduction of policy coordinators
2. Notice of Retirement Benefit Rules
3. Adoption of Self-Directed Brokerage Account Rule for OSGP
4. Adoption of Required Minimum Distribution Rules

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Oregon
Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

FROM: Stephanie Vaughn, Manager, Policy Analysis and Compliance Section
Yong Yang, Tax Policy Coordinator

SUBJECT: Adoption of Oregon Savings Growth Plan (OSGP) Self-Directed Brokerage Option Rule

OAR 459-050-0120, Self-Directed Brokerage Option

OVERVIEW

- Action: Adoption of changes to self-directed brokerage account requirements.
- Reason: Recommendation from both the OSGP Advisory Committee and the Oregon Investment Council

BACKGROUND

The self-directed brokerage option (SDBO) within OSGP has been available since 2011 and offers participants flexibility, increased diversification, and the ability to manage specific investments within their OSGP account. Currently, to take advantage of the SDBO, participants must have a minimum OSGP balance of $10,000, and can transfer a maximum of 50% of their account to the SDBO. With recommendation from both the OSGP Advisory Committee and the Oregon Investment Council, PERS staff is seeking to amend OAR 459-050-0120 to lower the minimum account balance requirement for trading into the self-directed brokerage option to $5,000 and increase the maximum percentage of account balance that can be traded into the self-directed brokerage option to 90%.

PUBLIC COMMENT AND HEARING TESTIMONY

A rulemaking hearing was held remotely on June 28, 2023, at 2:00 p.m. The public comment period ended July 3, 2023, at 5:00 p.m. No public comment was received.

LEGAL REVIEW

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

IMPACT

Mandatory: No. The board may choose to follow the advisory committee recommendations, choose other presented options, or to leave the rule as is.

Benefit: Allows greater flexibility for members who elect to manage a portion of their account themselves.

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

RULEMAKING TIMELINE

May 29, 2023	Staff began the rulemaking process by filing Notice of Rulemaking with the Secretary of State.
June 1, 2023	Secretary of State published the notice in the Oregon Administrative Rules Database. Notice was sent to employers, legislators, and interested parties. Public comment period began.
June 2, 2023	PERS Board notified that staff began the rulemaking process.
June 28, 2023	Rulemaking hearing was held remotely at 2:00 p.m.
July 3, 2023	Public comment period ended at 5:00 p.m.
July 28, 2023	Staff will propose adopting the rule modifications, including any changes resulting from public comment or reviews by staff or legal counsel.

BOARD OPTIONS

The PERS Board may:

1. Pass a motion to “adopt the changes to OAR 459-050-0120 as presented.”
2. Direct staff to make other changes to the rules or explore other options.

STAFF RECOMMENDATION

Staff recommends the PERS Board choose Option #1.

B.3. Attachment 1 – *OAR 459-050-0120, Self-Directed Brokerage Option*

B.3. Attachment 2 – *OSGP Advisory Committee Recommendations*

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 050 – DEFERRED COMPENSATION

459-050-0120

Self-Directed Brokerage Option

(1) For purposes of this rule:

(a) "Core Investment Option" means an investment alternative made available under ORS 243.421, but does not include the Self-Directed Brokerage Option.

(b) "Self-Directed Brokerage Option" means an investment alternative made available under ORS 243.421 that permits a participant to establish a brokerage account and participate in investment products other than core investment options.

(c) "Trade" has the same meaning as in OAR 459-050-0037.

(2) A participant may initiate participation in the Self-Directed Brokerage Option only by a trade from core investment options.

(a) The participant's combined Deferred Compensation and Designated Roth Accounts balance must be at least *[$10,000]* **<u>$5,000</u>** on the date of the trade.

(b) The amount of the trade may not exceed *[50]* **<u>90</u>** percent of the participant's combined Deferred Compensation and Designated Roth Accounts balance on the date of the trade.

(3) A participant in the Self-Directed Brokerage Option may not:

(a) Contribute to the Self-Directed Brokerage Option by any means other than a trade from a core investment option.

(b) Make a trade from a core investment option to the Self-Directed Brokerage Option if:

(A) The participant's balance in the Self-Directed Brokerage Option exceeds the balance in the participant's core investment options on the date of the trade; or

(B) The trade would cause the participant's balance in the Self-Directed Brokerage Option to exceed the participant's balance in the core investment options on the date of the trade.

(4) The Self-Directed Brokerage Option may not be included in any automatic account rebalancing function offered by the Program.

(5) Notwithstanding OAR 459-050-0080, funds in the Self-Directed Brokerage Option are not available for distribution.

(a) Funds in the Self-Directed Brokerage Option must be traded to a core investment option to be available for distribution under OAR 459-050-0080.

(b) A participant, beneficiary, or alternate payee subject to Required Minimum Distributions, as described in OAR 459-050-0300, must maintain a balance in the core investment options that will accommodate the timely distribution of the required amount.

(c) A participant, beneficiary, or alternate payee who fails to comply with subsection (b) of this section is solely responsible for any tax, penalty, or cost imposed by reason of a delayed or partial required minimum distribution.

(6) The Deferred Compensation Manager, if necessary to comply with restrictions imposed by a participating mutual fund, a contracted broker, or the Securities and Exchange Commission, may establish additional temporary restrictions for the Self-Directed Brokerage Option.

(7) Any action taken by the Deferred Compensation Manager under section (6) of this rule must be presented to the Board at its next scheduled meeting. The Board may

take action as authorized by ORS 243.401 to 243.507. If the Board does not act, the action(s) taken by the Deferred Compensation Manager shall expire on the first business day following the date of the meeting.

(8) The restrictions provided in this rule are not exclusive. The Board may establish additional restrictions or sanctions as authorized by ORS 243.401 to 243.507.

Stat. Auth.: ORS 243.470

Stats. Implemented: ORS 243.401 - 243.507

Oregon

Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

June 2, 2023

TO: Members of the PERS Board

FROM: Sam Paris, Chief Operations Officer

SUBJECT: Oregon Savings Growth Plan Advisory Committee Recommendations for the Self-Directed Brokerage Option

OVERVIEW

Currently, Oregon Administrative Rule (OAR) 459-050-0120 section (2) states as follows:

> (2) A participant may initiate participation in the self-directed brokerage option only by a trade from core investment options.
>
> (a) The participant's combined deferred compensation (DC) and designated Roth account balances must be at least $10,000 on the date of the trade.
>
> (b) The amount of the trade may not exceed 50% of the participant's combined DC and Designated Roth Account balances on the date of the trade.

BACKGROUND

The self-directed brokerage option (SDBO) was added to the Oregon Savings Growth Plan (OSGP) in 2011. OSGP had distributed a survey to state employees asking if they would be interested in having an SDBO account added to the OSGP investment line-up, and 84% were in favor of the addition. Oregon Investment Council's (OIC) approval of this addition, to be managed by Schwab, followed shortly thereafter. When originally added to the line-up, potential SDBO account participants had to have a minimum OSGP balance of $20,000. The maximum percentage allocation to the SDBO was 50% of the combined DC and Roth balances.

In early 2014, the OSGP Advisory Committee (AC) had requested to relax or eliminate the restrictions on the SDBO. At the March 2014 OIC meeting, Treasury staff stated that because participation in OSGP is completely elective, they recommended relaxing the limitations to provide participants greater flexibility with their OSGP investments and allocations. The OIC approved the recommendation to reduce the required minimum OSGP balance to $10,000 and maintain the maximum SDBO allocation at 50%.

Subsequently, in 2016, OSGP and Schwab staff presented information regarding the SDBO to the AC. The AC heard a proposal to reduce the dollar amount limit to access the brokerage window from $10,000 to $5,000 and a proposal to increase the percentage of total assets that somebody could invest in a brokerage window from 50% to 75%. The AC made a motion that OSGP staff research the feasibility of keeping the minimum contribution at $10,000 and increasing the percentage of total assets that somebody could invest in a brokerage window from 50% to 75%. The motion was approved unanimously.

Following the AC motion approval in 2016, Treasury staff presented to the OIC the following recommendation based on the AC's discussion to:

- Reduce the brokerage window access amount minimum to $5,000.
- Increase the percentage of total assets a participant could invest in a brokerage window to 90%.

It was acknowledged that these recommendations differed slightly from the AC's direction, and Treasury staff explained that they presented the $5,000/90% so that if the AC made additional recommendations in the future, staff would not have to return to the OIC for approval.

The OIC approved these recommendations; however, after OIC approval, no recommendations were presented to the PERS Board for approval. Therefore, the OAR was never updated. However, based on the OIC approval, the $5,000/90% standard was administratively implemented.

Subsequently, while reviewing the current OARs in late 2021, it was discovered that OSGP was not in compliance with the OAR. Participants were allowed to transfer up to 90% of their account balance and needed to have $5,000 in their account to do so. Once discovered, OSGP immediately implemented changes to be in compliance with the OAR. Participants submitted concerns about this change, which were discussed in the AC**.** In February 2023, OSGP considered four options:

1. Keep the current, most conservative limitations: $10,000 minimum balance; maximum percentage allocation set at 50%.

2. Switch to the Advisory Committee recommended limitations: $10,000 minimum balance; maximum percentage allocation set at 75%.

3. Switch to the OIC approved limitations: $5,000 minimum balance; maximum percentage allocation set at 90%.

4. Other option: switch to $5,000 minimum balance; maximum percentage allocation set at 75%.

After careful consideration, the AC passed a motion requesting the PERS Board update OAR 459-050-0120 to have a $5,000 minimum balance and maximum percentage allocation set at 90%. This option was chosen after consultation with partners; to bring OSGP closer to industry standards; after considering original public comment that voiced dissatisfaction with current rules; and to give brokerage account participants more autonomy.

Administrative rulemaking

1. Introduction of policy coordinators
2. Notice of Retirement Benefit Rules
3. Adoption of Self-Directed Brokerage Account Rule for OSGP
4. Adoption of Required Minimum Distribution Rules

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Oregon
Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

FROM: Stephanie Vaughn, Manager, Policy Analysis and Compliance Section
Yong Yang, Tax Policy Coordinator

SUBJECT: Notice of Required Minimum Distribution Rules.

OAR 459-005-0560 *Required Minimum Distributions, Generally*

OAR 459-005-0570 *Required Minimum Distributions, Individual Account Program (IAP)*

OAR 459-050-0300 *Required Minimum Distribution Requirements*

OVERVIEW

- Action: Adoption of changes to Required Minimum Distribution Requirement Rules.
- Reason: Implement provision of the federal Setting Every Community Up for Retirement Enhancement (SECURE) Act of 2019 that impacts PERS.
- Policy Issue: None identified.

BACKGROUND

The federal SECURE Act of 2019 modified the required minimum distribution (RMD) rules under the Internal Revenue Code (IRC) with respect to distributions of death benefits under defined contribution plans. Although the Individual Account Program (IAP) is qualified as a separate account within the defined benefit program under IRC §414(k) and is not a defined contribution plan, for purposes of the RMD rules, distributions from the IAP are treated as distributions from a defined contribution plan.

The new RMD rules establish a new term for eligible designated beneficiary (surviving spouse, minor child, disabled or chronically ill, etc.) as well as new standards for these beneficiaries regarding when they must receive distributions. The rules also vary depending on whether the member dies before or after the date they are required to begin receiving payments.

Staff have amended the existing RMD OAR 459-005-0560 to remove references to the IAP and created a new OAR 459-0005-0570 which outlines the new RMD rules specific to distributions from the IAP. The new RMD rules also apply to the Oregon Savings Growth Plan (OSGP), so staff have amended the OSGP RMD OAR 459-050-0300 with the new federal standards as well.

PUBLIC COMMENT AND HEARING TESTIMONY

A rulemaking hearing was held remotely on June 28, 2023, at 2:00 p.m. The public comment period ended July 3, 2023, at 5:00 p.m. No public comment was received.

LEGAL REVIEW

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

IMPACT

Mandatory: Yes. This change is required to comply with the Federal SECURE Act (2019).

Benefit: Will keep PERS compliant with Federal Law.

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

RULEMAKING TIMELINE

May 29, 2023	Staff began the rulemaking process by filing Notice of Rulemaking with the Secretary of State.
June 1, 2023	Secretary of State published the notice in the Oregon Administrative Rules Database. Notice was sent to employers, legislators, and interested parties. Public comment period began.
June 2, 2023	PERS Board notified that staff began the rulemaking process.
June 28, 2023	Rulemaking hearing held remotely at 2:00 p.m.
July 3, 2023	Public comment period ended at 5:00 p.m.
July 28, 2023	Staff will propose adopting the rule modifications, including any changes resulting from public comment or reviews by staff or legal counsel.

BOARD OPTIONS

The PERS Board may:

1. Pass a motion to "adopt the changes to OAR 459-005-0560; OAR 459-005-0570; OAR 459-050-0300 as presented."
2. Direct staff to make other changes to the rules or explore other options.

STAFF RECOMMENDATION

Staff recommends the PERS Board choose Option #1.

B.4. Attachment 1 – OAR 459-005-0560 *Required Minimum Distributions, Generally*

B.4. Attachment 2 – OAR 459-005-0570 *Required Minimum Distributions, Individual Account Program (IAP)*

B.4. Attachment 3 – OAR 459-050-0300 *Required Minimum Distribution Requirements*

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 005 – ADMINISTRATION

459-005-0560

Required Minimum Distributions, Generally

(1) Applicable Law. Distributions under the Public Employees Retirement System (PERS) shall be made in accordance with Internal Revenue Code (IRC) Section 401(a)(9), including IRC Section 401(a)(9)(G), and the Treasury Regulations and Internal Revenue Service rulings and other interpretations issued thereunder, including Treasury Regulation Sections 1.401(a)(9)-1 through 1.401(a)(9)-9. The provisions of this administrative rule and any other statute or administrative rule reflecting the required minimum distribution requirements of IRC Section 401(a)(9) shall override any distribution options that are inconsistent with IRC Section 401(a)(9).

(2) Distributions to Members. Each member's entire benefit under PERS shall be distributed to the member, beginning no later than the required beginning date, over the member's lifetime (or the joint lives of the member and a designated beneficiary), or over a period not extending beyond the member's life expectancy (or the joint life expectancies of the member and a designated beneficiary).

(a) Required Beginning Date. For purposes of this section, the "required beginning date" is April 1 of the calendar year after the later of the following:

(A) The calendar year in which the member reaches:

(i) 70-1/2 years of age in 2019 or earlier;

(ii) 72 years of age in calendar years 2020 through 2022;

(iii) 73 years of age in calendar years 2023 through 2032; and

(iv) 75 years of age beginning in 2033 and later; or

(B) The calendar year in which the member retires.

(b) Designated Beneficiary. For purposes of this section, a "designated beneficiary" means any individual designated as a beneficiary by the member. If the member designates a trust as a beneficiary, the individual beneficiaries of the trust shall be treated as designated beneficiaries if the trust satisfies the requirements set forth in Treasury Regulation Section 1.401(a)(9)-4.

(c) Calculation of Life Expectancies. For purposes of this section and Chapter 238 benefits and the Pension Program, which are part of the DB component of PERS, life expectancies shall not be recalculated after the initial determination, unless otherwise required by Treasury Regulation Section 1.401(a)(9)-5, Q&A-4 and Q&A-5. For purposes of this section and the Individual Account Program, life expectancies shall be recalculated but no more frequently than annually, unless otherwise required by Treasury Regulation Section 1.401(a)(9)-5, Q&A-5.

(d) Limitations on Benefit Changes. A retired member who has had a required beginning date shall not change a beneficiary designation, benefit option election, or any other designation or election except as permitted under Treasury Regulation Sections 1.401(a)(9)-4 and 1.401(a)(9)-6.

(e) Limitations on Conversion of Joint Annuity to Single Life Annuity Following Divorce. A retired member who has had a required beginning date may elect to convert a joint and survivor annuity under Option 2A or 3A under Chapter 238 to a single life annuity by reason of the member's divorce from the joint annuitant, subject to the provisions of Treasury Regulation Section 1.401(a)(9)-6. This section applies to ORS Chapter 238 benefits notwithstanding ORS 238.305(5) and 238.325(3).

(f) Limitations on Survivor Annuity Elections. Except as otherwise required by a domestic relation order under ORS 238.465, if a member elects a 100 percent (100%) joint and survivor annuity (Option 2 or 2A under ORS 238.305(1) and under

238A.190(1)(a)) and designates a nonspouse beneficiary who is more than ten years younger than the member as calculated under Treasury Regulation Section 1.401(a)(9)-6, Q&A-2, the benefit shall be actuarially adjusted to provide for a reduced survivor annuity benefit to the extent necessary to comply with federal requirements for qualified retirement plans.

(g) Limitation on Period-Certain Annuity Election (Chapter 238 only). If a member elects a 15-year certain option (Option 4 under ORS 238.305(1)), and attains age 85 or older during the calendar year in which the benefits commence, the benefit shall be actuarially adjusted to provide for a shorter payout period to the extent necessary to comply with federal requirement for qualified retirement plans.

(h) Limitation on Selection of IAP Benefit Options. Benefit payment options selected under the Individual Account Program shall be considered as payment options under a DC plan and must comply with the requirements of Treasury Regulation Section 1.401(a)(9)-5.

(3) Distributions to Beneficiaries of Retired Members. If a retired member dies after annuity benefit payments have begun under Chapter 238 or the Pension Program *[or other benefit payments]* are required to begin under section (2) of this rule, any death benefits shall be distributed at least as rapidly as under the distribution method being used at the member's death.

(4) Distributions to Beneficiaries of Active and Inactive Members. If an active or inactive member dies before annuity payments have begun under Chapter 238 or the Pension Program *[or other benefit payments]* are required to begin under section (2) of this rule, any death benefits shall be distributed by December 31 of the calendar year that contains the fifth anniversary of the member's death, except as provided in the

following: (a) Distributions to Designated Beneficiaries. The five-year rule shall not apply to any death benefit that is payable to a member's designated beneficiary, if:

(A) The benefit is distributed over the designated beneficiary's lifetime or over a period not extending beyond the designated beneficiary's life expectancy; and

(B) The distributions begin no later than December 31 of the calendar year that contains the first anniversary of the member's death.

(b) Distributions to Spouse Designated Beneficiaries. Notwithstanding subsection (a) of this section, if the designated beneficiary is the member's surviving spouse as defined by the Internal Revenue Code:

(A) The commencement of distributions under subsection (a)(B) of this section may be delayed until December 31 of the calendar year in which the member would have reached the age specified in section (2)(a)(A) of this rule; and

(B) If the surviving spouse dies after the member's death but before the distributions to the spouse have begun, the rules of this section shall apply to any death benefit payable to any contingent beneficiary as if the spouse were the member. Notwithstanding the foregoing, however, this subsection shall not apply to any death benefit payable to a surviving spouse of the deceased member's surviving spouse.

(5) The provisions of this rule are effective on January 1, 2003.

Stat. Auth.: ORS 238.630, 238.650, 238A.130, 238A.170 & 238A.410

Stat. Implemented: ORS 238.005 - 238.715

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 005 – ADMINISTRATION

459-005-0570

Required Minimum Distributions, Individual Account Program (IAP)

(1) Definitions. The following definitions apply for the purposes of this rule:

(a) "Designated Beneficiary" means:

(A) A natural person designated as a beneficiary by the member and who is not an eligible designated beneficiary; or

(B) A trust that satisfies the requirements in section (2) of this rule.

(b) "Eligible Designated Beneficiary" means a natural person designated as a beneficiary by the member and who is determined on the date of the member's death as:

(A) The surviving spouse;

(B) A child of the plan participant who has not reached majority;

(C) Disabled (within the meaning of section IRC 72(m)(7));

(D) A chronically ill individual within the meaning of section IRC 7702B(c)(2); or

(E) Any other individual who is not more than 10 years younger than the plan participant.

(c) "Required Beginning Date" means the same as defined in OAR 459-005-0560(2)(a).

(2) A trust as beneficiary. If a trust is designated as a beneficiary, the individual beneficiaries of the trust will be treated as designated beneficiaries as defined in paragraph (1)(a)(B) if by December 31 of the calendar year following the death of a person who designated a trust as beneficiary, the trust satisfies the following conditions:

(a) The trust must be irrevocable, or become irrevocable by its terms at the time of the person's death;

(b) The trust's beneficiaries must be natural persons who are identifiable from the trust instrument; and

(c) One of the following must be provided to PERS:

(A) A list of all beneficiaries of the trust, including contingent beneficiaries, along with a description of the portion to which they are entitled and any conditions on their entitlement, all corrected certifications of trust amendments, and a copy of the trust instrument if requested by PERS; or

(B) A copy of the trust instrument and copies of any amendments after they are adopted.

(3) Distributions to Beneficiaries of Retired Members under the IAP. If a retired member dies after the required beginning date, the remaining account balance distributed to:

(a) An eligible designated beneficiary must be at least as rapidly as under the distribution method being used at the member's death; and

(b) A designated beneficiary must be completed by December 31 of the calendar year containing the tenth anniversary of the member's death.

(4) Distributions to designated beneficiaries and eligible designated beneficiaries of Active and Inactive Members under the IAP. If an active or inactive member dies before the required beginning date, any death benefits shall be distributed by no later than December 31 of the calendar year that contains the tenth anniversary of the member's death.

(5) Distributions under the IAP when there is no eligible designated beneficiary or designated beneficiary are as follows:

(a) If a member dies before the required beginning date with no eligible designated beneficiary or designated beneficiary as defined in section (1) of this rule, the total account balance must be distributed by December 31 of the calendar year containing the fifth anniversary of the member's death.

(b) If the member dies after the required beginning date with no eligible designated beneficiary or designated beneficiary as defined in section (1) of this rule, the total account balance must be distributed no longer than the member's life expectancy and the distribution must begin no later than December 31 of the calendar year immediately following the calendar year of the member's death.

Stat. Auth.: ORS 238A.450 & 238A.410

Stat. Implemented: ORS 238A.005 – 238A.410

OREGON ADMINISTRATIVE RULE
PUBLIC EMPLOYEES RETIREMENT BOARD
CHAPTER 459
DIVISION 050 – DEFERRED COMPENSATION

459-050-0300

Required Minimum Distribution Requirements

(1) Definitions. The following definitions apply for the purposes of this rule:

(a) **“Eligible Designated Beneficiary” means a natural person designated as beneficiary by the participant as provided in OAR 459-050-0060 who is determined on the date of the plan participant’s death as:**

(i) the surviving spouse,

(ii) a child of the plan participant who has not reached majority,

(iii) disabled (within the meaning of section IRC 72(m)(7)),

(iv) a chronically ill individual within the meaning of section IRC 7702B(c)(2), or

(V) any other individual who is not more than 10 years younger than the plan participant.

(b) “*Designated Beneficiary” means*:

(A) A natural person designated as a beneficiary by the participant*[, alternate payee, or surviving beneficiary]* as provided in OAR 459-050-0060; **who is not an eligible designated beneficiary** or

(B) If a trust is designated as a beneficiary, the individual beneficiaries of the trust will be treated as designated beneficiaries if the trust satisfies the requirements in section (2) of this rule. *[and applicable Treasury Regulations, including but not limited to Proposed Treasury Regulation Section 1.401(a)(9)-1, Q&A-D-5]*

(C) If the beneficiary is not a person or a trust satisfying these requirements, the participant, alternate payee, or surviving beneficiary will be deemed to have no designated beneficiary only for purposes of required minimum distributions under IRC 409(a)(9), and distribution shall be made in accordance with section (11) of this rule.

(*[b]* **c**) “Life Expectancy” means the length of time a person of a given age is expected to live as set forth in Treasury Regulation Section 1.72-9. Required minimum distributions shall be calculated so as to satisfy the requirements of Section 401(a)(9) using the life expectancy tables provided in Treasury regulations. Life expectancies may not be recalculated after the initial determination, except as otherwise required under Oregon or federal law.

(*[c]* **d**) “Required Beginning Date” means April 1 of the calendar year following the later of:

(A) The calendar year in which the participant reaches:

(i) 70-1/2 years of age in 2019 or earlier,

(ii) 72 years of age in calendar years 2020 through 2022,

(iii)73 years of age in calendar years 2023 through 2032, and

(iv) 75 years of age beginning in 2033 and later, or

(B) The calendar year in which the participant retires.

(*[d]* **e**) “Required Commencement Date” means the date that the deferred compensation plan must begin to distribute all or part of an account to a surviving beneficiary.

(2) A trust as beneficiary. If a trust is designated as a beneficiary, the individual beneficiaries of the trust will be treated as designated beneficiaries as defined in paragraph (1)(c)(B) if by December 31 of the calendar year following the death of a person who designated a trust as beneficiary, the trust satisfies the following conditions:

(a) The trust must be irrevocable, or become irrevocable by its terms at the time of the person’s death;

(b) The trust's beneficiaries must be natural persons who are identifiable from the trust instrument; and

(c) One of the following must be provided to the Deferred Compensation Program:

(A) A list of all beneficiaries of the trust, including contingent beneficiaries, along with a description of the portion to which they are entitled and any conditions on their entitlement, all corrected certifications of trust amendments, and a copy of the trust instrument if requested by the Deferred Compensation Program; or

(B) A copy of the trust instrument and copies of any amendments after they are adopted.

(3) Applicable law. Distributions under the Deferred Compensation Program shall be made in accordance with Internal Revenue Code (IRC) Section 401(a)(9), Treasury regulations, Internal Revenue Service rulings and other interpretations issued, including Proposed Treasury Regulation Section 1.401(a)(9)-2. IRC Section 401(a)(9) overrides the provisions of this rule and any other statute or rule pertaining to the required minimum distribution requirements and any manners of distributions, if they are found to be inconsistent with IRC Section 401(a)(9).

(a) If a participant, alternate payee, or surviving beneficiary has not begun distribution or elected a minimum distribution by the beginning date or commencement date required in this rule and IRC Section 401(a)(9), the Deferred Compensation Program shall begin distribution of the minimum amount required as provided under OAR 459-050-0080(2)(e) or, if required, the entire account. Distribution under this subsection is subject to the provisions of OAR 459-050-0120(5).

(b) The required minimum distribution amount may never exceed the entire account balance on the date of distribution.

(4) Minimum distribution requirements for participants. Distributions must begin no later than the participant's required beginning date.

(a) The participant's entire account balance shall be distributed over the participant's life expectancy or over a period not extending beyond the participant's life expectancy without regard to the designated beneficiary's age unless the designated beneficiary is a spouse who is more than 10 years younger than the participant.

(b) If the designated beneficiary is a spouse and is more than 10 years younger than the participant, the entire account balance shall be distributed over the joint lives of the participant and the designated beneficiary.

(c) The participant's entire account(s) balance in the Deferred Compensation Program shall be distributed first from the Deferred Compensation Account unless the participant indicates otherwise.

(5) Minimum distribution requirements for alternate payees. The minimum distribution requirements applicable to an alternate payee are determined by whether a Qualified Domestic Relations Order (QDRO) allocates a separate account to the alternate payee or provides that a portion of a participant's benefit is to be paid to the alternate payee.

(a) If a separate account is established in the name of the alternate payee under OAR 459-050-0210, required minimum distributions to the alternate payee must begin no later than the participant's required beginning date. The alternate payee's entire account balance shall be distributed over the alternate payee's life expectancy or over a period not extending beyond the alternate payee's life expectancy.

(b) If no separate account is established in the name of the alternate payee and the alternate payee is paid a portion of a participant's benefit, the alternate payee's portion of the benefit shall be aggregated with the amount distributed to the participant and will be treated, for purposes of meeting the minimum distribution requirement, as if it had been distributed to the participant.

(6) Manners of distribution available to surviving designated beneficiaries. A surviving designated beneficiary may choose a manner of distribution and apply for a distribution as provided for in OAR 459-050-0080. If the distribution to a participant *[or alternate payee]* has begun in accordance with section 401(a)(9)(A)(ii) and the participant dies before the entire account has been distributed or after distributions are required to begin under section (4) of this rule, distributions **to the surviving eligible designated beneficiary must be made at least as rapidly as under the manner of distribution used before the participant's death, and distribution to the surviving designated beneficiary must be completed by December 31 of the calendar year containing the tenth anniversary of the participant's death.**

(7)(a) Distributions treated as having begun. Distributions from an individual account are not treated as having begun to a participant in accordance with section 401(a)(9)(A)(ii) until the participant's required minimum distribution beginning date, without regard to whether distributions from an individual account have been made before the required beginning date.

(b) If distribution has been made before the required beginning date in the form of an irrevocable annuity, the distributions are treated as having begun if a participant dies after the annuity starting date but before the required beginning date. The annuity starting date will be deemed the required minimum distribution beginning date.

(8) Required commencement date for a surviving designated beneficiary. If a participant dies before distributions are required to begin or are treated as having begun, the entire account balance must be distributed **to a designated beneficiary or eligible designated beneficiary** by December 31 of the calendar year containing the *[fifth]* **tenth** anniversary of the participant's death**.** *[unless the beneficiary makes the following distribution election in the manner prescribed by the Deferred Compensation Plan:*

(a) Distributions must begin no later than December 31 of the calendar year following the year of the participant's or alternate payee's death; and

(b) Distribution of payments over the designated beneficiary's lifetime or over a period not exceeding the designated beneficiary's life expectancy

(A) The beneficiary's life expectancy is calculated using the age of the beneficiary in the year following the year of the participant's death, reduced by one for each subsequent year.

(B) If the participant has more than one designated beneficiary as of December 31 of the calendar year following the year of the participant's death and the account has not been divided into separate accounts for each beneficiary, the beneficiary with the shortest life expectancy is treated as the designated beneficiary.

(9) Required commencement date for a spousal beneficiary. If distributions have not begun before the participant's death and if the sole designated beneficiary is the participant's surviving spouse, distributions to the surviving spouse must commence on or before the later of the dates set forth in subsections (a) and (b) below:

(a) December 31 of the calendar year immediately following the calendar year in which the participant died; or

(b) December 31 of the calendar year in which the participant would have reached their required beginning date.

(c) The distribution period during the surviving spouse's life is the spouse's single life expectancy.]

(*[10]***9**)(a) Required commencement date for a surviving spouse's beneficiary. If the surviving spouse dies after the participant's death but before distributions to the spouse have begun, any death benefits payable to the surviving spouse's beneficiary will be applied as if the surviving spouse were the participant. The date of death of the surviving spouse will be substituted for the date of death of the participant.

(b) A death benefit payable to the surviving spouse of the deceased participant's surviving spouse shall be distributed as provided in section (8) of this rule. *[The provisions of section (9) of this rule do not apply to a death benefit payable to a surviving spouse of the deceased participant's surviving spouse.]*

(**10***[11]*)(a) Required commencement date if no designated beneficiary **or eligible designated beneficiary**: If a participant dies before the required beginning date with no designated beneficiary **or eligible designated beneficiary** as defined in **section** *[paragraph]* (1)*[(c)(C)]* of this rule the total account balance must be distributed *[as provided for in OAR 459-050-0060,]* by December 31 of the calendar year containing the fifth anniversary of the participant's *[or alternate payee's]* death.

(b) If a participant dies after the required beginning date with no designated **or eligible designated beneficiary** as defined in **section** *[paragraph]* (1)*[(c)(C)]* of this rule, the applicable distribution period must not be longer than the participant's life expectancy.

[(12) Determining the designated beneficiary. The designated beneficiary will be determined based on the beneficiary(s) designated as of December 31 of the calendar year following the calendar year of the participant's, alternate payee's, or surviving beneficiary's death.

(a) A participant may change beneficiaries after his or her required beginning date.

(b) A beneficiary may be changed after a participant's death, such as by one or more beneficiaries disclaiming benefits.]

(**11***[13]*) Notwithstanding any other sections of this rule and pursuant to the Coronavirus Aid, Relief, and Economic Security Act of 2020, required minimum distribution under IRC 401(a)(9) is waived for calendar year 2020, including 2019 required minimum distribution that would be made between January 1 and April 1, 2020.

Stat. Auth.: ORS 243.470

Stats. Implemented: ORS 243.401 - 243.507, Pub. L. No. 116-136

July 28, 2023
PERS Board meeting agenda

Action and discussion items

1. Legislative session review and 2023-25 budget update
   a. Session overview and 2024 preview
   b. 2023-25 budget
2. SB 1049 update
3. Valuation methods and assumptions including assumed rate of return
4. Notice of Assumed Rate OAR

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Oregon

Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

FROM: Heather Case, Senior Policy Advisor

SUBJECT: Legislative Update

2023 LEGISLATIVE SESSION- BILLS IMPACTING PERS

The 2023 legislative session began on January 17 and concluded on June 25. During this session, over 2,800 bills were introduced for consideration. The following bills were passed by the Legislature and signed by the Governor (or expected to be signed). The agency is in the process of implementing these changes to our statutes. Information will be provided to members and employers as we resolve the details of implementing these changes.

Additional information about all legislation is available on the legislative website: www.oregonlegislature.gov

Bill Number	**Brief Summary**
	Technical Changes
Senate Bill (SB) 141	*Relating to connection to federal tax law* — Updates connection date to federal Internal Revenue Code and other provisions of tax law to December 31, 2022.
	Program Changes
SB 128	*Relating salary under the Public Employees Retirement System* — Treats the housing allowance afforded to prison chaplains as if it were included in PERS members' taxable income.
SB 308	*Relating to decedent's estates* — Changes the title of "small estate affidavit" to "simple estate affidavit."
SB 951	*Relating to certified parole and probation officers employed by the State Board of Parole and Post-Prison Supervision* — Includes in the definition of "police officer" for PERS purposes certified parole and probation officers employed by the State Board of Parole and Post-Prison Supervision. This gives this group Police and Fire (P&F) PERS benefits.
House Bill (HB) 2032	*Relating to domestic partnerships* — Expands the eligibility for domestic partnership under Oregon Family Fairness Act to partners of any sex.
HB 2054	*Relating to the status of district attorneys in the Public Employees Retirement System* — Includes in the definition of "police officer" for PERS purposes deputy district attorneys. This gives this group P&F PERS benefits.

HB 2283	*Relating to public employee retirement* — Housekeeping fixes to align standards and reflect agency practice in advance of PERS' modernization efforts.
HB 2284	*Relating to alternate payees in the Public Employees Retirement System* — Raises fee relating to creation of alternate payee account (typically in cases of divorce) from $300 to $1,300 to accurately reflect current administrative costs. Ties fee to Consumer Price Index beginning 2025 and after.
HB 2285	*Relating to the Social Security Revolving Account* — Removes obsolete provisions relating to PERS social security administration.
HB 2296	*Relating to reemployment of retired members of the Public Employees Retirement System* — Extends the sunset of SB 1049 (2019) Work After Retirement (WAR) provisions from 2024 to 2034.
HB 2740	*Relating to part-time faculty* — Modifies method of calculation for hours of employment for academic employees of community colleges and public universities for purposes of PERS reporting.
HB 3485	*Relating to the State Fire Marshal* — Provides State Fire Marshal with additional discretionary authority; establishes exception to hourly work after retirement limits (when applicable), revises definition of firefighter to include possibility of multiple chief deputy fire marshals.
Budget Bill	
HB 5033	*Relating to the financial administration of the Public Employees Retirement System* — Limits certain biennial expenditures from fees, moneys, or other revenues, including miscellaneous receipts but excluding lottery funds and federal funds, collected, or received by Public Employees Retirement System.

<u>PERS BUDGET BILL</u>

HB 5033, the PERS budget bill, is awaiting signature by the Governor. When signed, the bill will be effective on July 1, 2023.

Meeting videos and materials are available at:

https://olis.oregonlegislature.gov/liz/2023R1/Measures/Testimony/HB5033

The budget bill also brings with it three new budget notes, which include instructions to the agency to report to the legislature.

The first directs PERS to review the healthcare insurance marketplace and report to the Joint Committee on Ways and Means during the 2024 Legislative Session on whether the pre-Medicare population within PHIP should be combined with other groups in acquiring healthcare coverage that may be more cost effective.

The second directs PERS to report to the Joint Committee on Information Management and Technology during the 2024 legislative session on the implementation of SB 1049 (2019).

The third directs PERS to report to the Joint Committee on Information Management and Technology during the 2024 legislative session with updates on the agency's modernization program progress.

The agency will be adding these reporting requirements to our legislative activities for 2024.

<u>2023 LEGISLATIVE INTERIM</u>

Interim legislative committees (typically the "emergency board") will meet in mid-September, November, and January before the 2024 legislative session is convened. The agency will be prepared to appear before committees as invited. The agency will be prepared to present the above reports during the 2024 legislative session. In the fall, PERS will begin planning to bring the board legislative concepts for the 2025 legislative session. We will present those for the board's consideration in the Spring of 2024.

Oregon
Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 503-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

FROM: Gregory R. Gabriel, Budget Officer

SUBJECT: 2023-25 PERS Agency Budget Update (House Bill (HB) 5033)

The following budget was passed on June 24, 2023, and is awaiting final signature by the Governor.

- Operating Budget (Limited) $166,910,375
- Benefits/Health Payments (Non-Limited) $13,523,120,517
- State Government Service Charge Reduction ($1,423,881 in Senate Bill (SB) 5506)
- Employer Incentive Fund, Lottery Fund (Employer Incentive Fund) $21,217,388 (Additional $7.3M in SB 5506)
- School Districts Unfunded Liability Fund (SDULF) $1
- Employer Incentive Fund (EIF) $1
- Positions 439
- Full Time Equivalent (FTE) 436.69

The 2023-25 Legislatively Approved Budget (LAB) is $12.5 million (or 8.1%) above the 2021-23 LAB of $154.4 million. This increase can be attributed to increased program staffing, associated payroll costs, and funding to complete the implementation of SB 1049 (2019).

The Non-Limited Budget for benefit payments increased by $636.5 million or 4.9% more than the 2021-23 Legislatively Approved Budget. This increase is due to growing retirements and benefit payments in all programs: Tier One, Tier Two, Oregon Public Service Retirement Program (OPSRP), and the Individual Account Program (IAP).

The agency received approval for the following policy packages related to operations for the 2023-25 biennium:

Agency requested packages:

Package 101 – SB 1049 Implementation ($20,131,772 / 20.00 FTE)

Package 102 – SB 1049 Staffing ($1,887,761 / 9.00 FTE)

Package 103 – Modernization ($9,573,073 / 14.41 FTE)

Package 105 – IT Hardware and Subscriptions ($2,156,000 / 0.0 FTE)

Package 106 – PERS Health Insurance ($367,960 / 0.00 FTE)

Package 107 – Maintain Service Levels ($90,585 / 4.40 FTE)

Package 108 – Retirement Workload ($161,205 / .88 FTE)

Package 109 – Qualifying/Non-Qualifying ($523,653 / 3.00 FTE)

Package 110 – Position Reclassification ($58,744 / 0.00 FTE)

Package 111 – Increase Agency Support Services ($365,613 / 1.88 FTE)

Legislative Fiscal Office packages:

Package 801 – Increases Lottery Fund expenditure limitation by $4,425,149 for allocation of net sports betting revenue dedicated to the Employer Incentive Fund.

Below is the agency overview of the Legislatively Adopted Budget for 2023-25 separated by operating division:

	CENTRAL ADMIN	FINANCIAL SERVICES	INFORMATION SERVICES	OPERATIONS	COMPLIANCE AUDIT & RISK	CRSA	TOTAL
BUDGET	19,740,974	23,900,400	34,216,261	48,877,505	10,470,390	29,704,845	**166,910,375**
SB 5506	(99,942)	(1,220,406)	(9,333)	(10,953)	(83,247)	0	**(1,423,881)**
FINAL	19,641,032	22,679,994	34,206,928	48,866,552	10,387,143	29,704,845	**165,486,494**
POSITIONS	54	34	89	205	21	36	**439**
FTE	54.00	34.00	88.40	204.88	21.00	34.41	**436.69**

July 28, 2023
PERS Board meeting agenda

Action and discussion items

1. Legislative session review and 2023-25 budget update
   a. Session overview and 2024 preview
   b. 2023-25 budget
2. SB 1049 update
3. Valuation methods and assumptions including assumed rate of return
4. Notice of Assumed Rate OAR

Oregon

Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7766
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

FROM: Yvette Elledge-Rhodes, Deputy Director

SUBJECT: Senate Bill 1049 Implementation Update

BACKGROUND

Senate Bill (SB) 1049 was signed into law by the Governor on June 11, 2019. PERS staff continue to focus on completing work in an efficient and effective manner.

PROGRAM AND PROJECT IMPLEMENTATION

The SB 1049 Implementation Program is being managed as one comprehensive program, with the following six individual projects. All projects go through the Enterprise Information Services (EIS) stage-gate process.

Project	Effective Date	Project Health and Status (as of 7/7/23)
SB 1049 Program		Program health: Red • The program continues to be in red status because the Member Redirect Project has determined that two work packages cannot be completed within the current baselined schedule. Once Member Redirect is re-baselined, the program schedule will be updated and rebaselined. This is expected to change the end date of the program to June 2025. • Cross Project Effort (CPE) health continues to be in red status due to delays in Work Package (WP) 6. Development of the tool was completed on 2/28/23, but user acceptance testing ran into a higher number of defects than acceptable.
Employer Programs Project	Effective 7/1/2019	Project ended 7/16/21.
Salary Limit Project	Effective 1/1/2020	Project ended 5/28/21.
Work After Retirement Project	Effective 1/1/2020	Project ended 2/24/22.

Member Redirect Project	Effective 7/1/2020	Project health: Red • The Member Redirect Project status continues to be in red status due WP 8 (EPSA Death) and WP 11 (EPSA Adjustments) schedule uncertainty. Change requests for schedule changes, as well as incorporation of SB 111A, were approved and the schedule continues to be in process of rebaselining. This will impact the deployment dates of WP 8, WP 10, and WP 11. • Successful deployment of WP 9.1 (EPSA Withdrawal) and WP 9.2 (Alter OPSRP Withdrawal) on 6/29/23. • All other project activities are progressing as expected.
Member Choice Project	Effective 1/1/2021	Project ended 8/4/21.
Technical Debt		Project health: Red • The Technical Debt Project is in red status due to rebaselining WP 5 to align with the Member Redirect deployments. • Successful deployment of WP 6 (General Ledger Reversals) on 6/29/23. • Construction expected to continue for W P5 (Side Account Reversals) through 8/9/23.

HIGHLIGHTED ACTIVITIES

Program and project activities

- iQMS activities
    - Periodic Quality Status Report for May 2023 received 6/19/23.
    - Expecting a draft Quarterly QA Status and Improvement Report (July 2023) on 7/21/23.

Budget reporting

- Next bi-monthly meeting with the Chief Financial Office, Legislative Fiscal Office, and the Governor's Office is scheduled for 7/26/23.

PROGRAM/PROJECT BUDGET

The high-level budget information is contained within page two of the attachment to agenda item A.2.c. The detailed budget can be viewed in the attached Monthly Status Report.

The 2023-2025 SB 1049 budget was approved by the Legislature as part of the PERS budget bill, House Bill 5033, and is awaiting the Governor's signature. We will continue to update the board as program implementation continues throughout the year.

C.2. Attachment 1 – *Monthly Project Status Report and Road Map*

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Senate Bill (SB) 1049 Implementation Road Map

2019-2021 Biennium

2019: JUL AUG SEP OCT NOV DEC | 2020: JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC | 2021: JAN FEB MAR APR MAY JUN

Employer Programs

- **7/1/19 – Effective Date**
- 9/3/19 – Employer Incentive Fund (EIF) Application #1 Opens
- 11/27/19 – EIF Application #1 Closes
- 12/2/19 – EIF Application #2 Opens
- 8/6/20 – Employer Rate Projection Tool (ERPT) Assessment Complete
- 12/1/20 – EIF Application #2 Closes
- 3/30/21 – Work Package (WP) 1 Migrate and Adapt ERPT
- 6/30/21 – WP2 ERPT Stakeholder Acceptance and Deployment

Salary Limit

- 12/24/19 – Work Package (WP) 1 – Short Term
- **1/1/20 – Effective Date**
- 1/24/20 – WP2 Post 2020 Salary Limit
- 11/19/20 – WP3 User Screens to Record Annual Salary Limit
- 5/13/21 – WP4 Proration Reports and Workflow
- 5/28/21 – Project Close

Work After Retirement

- 12/19/19 – Work Package (WP) 1 Retiree Wages Suspended – Short Term
- **1/1/20 – Effective Date**
- 11/19/20 – WP2 New Wage Codes with General Ledger (GL) Integration
- 5/13/21 – WP3 Retro Rate Change

Member Redirect

- 6/18/20 – Work Package (WP) 1 Employee Pension Stability Account Set Up/Batch/General Ledger – Short Term
- **7/1/20 – Effective Date**
- 9/22/20 – Voluntary Contributions Initial Functionality
- 10/30/20 – WP2.2 IAP Forecaster Tool – non-jClarety
- 11/19/20 – Voluntary Contributions Final Functionality Release
- 1/21/21 – WP5.2 Online Member Services User Interface
- 1/26/21 – WP2 TIED SSIS – Non-jClarety
- 3/23/21 – WP3 EPSA Earnings
- 6/24/21 – WP4.2 EPSA Display, and WP12 Full EPSA Set up Screen

Member Choice

- 10/23/19 – Project Kick Off
- 5/15/20 – Member Annual Statements (MAS) Flyer Communication
- 8/19/20 – Member Choice Notification
- 8/20/20 – Work Package (WP) 1 Online Member Services (OMS) Changes Deployed
- 9/1-30/20 – Election Period
- **1/1/21 – Effective Date**
- 3/23/21 – WP2 OMS & jClarety Enhancements
- 5/1/21 – Member Choice reflected in MAS
- 6/24/21 – WP3 Online Member Services (OMS) Election and Bugs

PROGRAM INITIATIVE

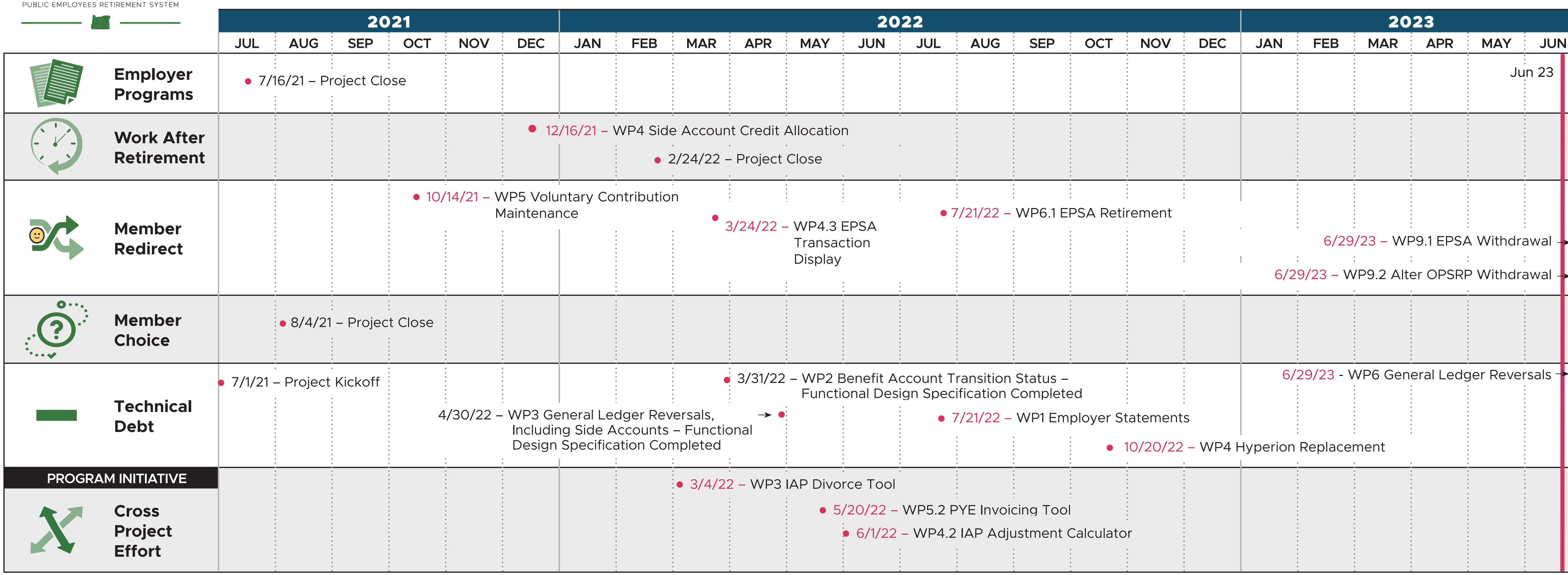
Cross Project Effort

- 9/17/20 – WP1.1 IAP Validator Tool (short-term)
- 1/26/21 – WP2.1 IAP Payment Recon (short-term)
- 3/18/21 – WP1.2 IAP Validator Tool
- 4/27/21 – WP2.2 IAP Payment Recon
- 5/13/21 – WP7.2 Employer Information Actuarial Extract
- 6/18/21 – WP5.1 PYE Invoicing Tool
- 6/24/21 – WP7.1 Non-Retired Census Actuarial Extract
- 6/28/21 – WP4.1 IAP Adjustment Calculator

Revised: June 13, 2023

Senate Bill (SB) 1049 Implementation Road Map

2021-2023 Biennium



Revised: June 14, 2023

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Senate Bill (SB) 1049 Implementation Road Map

2023-2025 Biennium

PROJECTS	2023						2024												2025					
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN

Member Redirect

- 2/8/24 – WP8.1 EPSA Death
- 8/8/24 – WP11.1A EPSA Retirement Cancellation and Adjustment
- 8/8/24 – WP11.2B Death Excess EPSA
- 5/9/25 – Project Close
- 2/8/24 – WP10 Mid-Project Clean up
- 1/16/25 – WP11.1C EPSA Death Cancellation and Adjustments
- 1/16/25 – WP11.2A Retirement Excess EPSA
- 1/16/25 – WP11.1B Withdrawal Cancellation and Adjustment

Technical Debt

- 2/8/24 - WP5 Side Account Reversals
- 5/15/24 – Project Close

PROGRAM INITIATIVE

Cross Project Effort

- 7/11/23 – WP6 IAP Balance Comparison Tool
- 3/28/24 – WP7.3 Tier One/Tier Two/OPSRP Payouts Actuarial Extract

Revised: June 14, 2023

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Program information:

Program start: July 1, 2019 **| Program end:** June 30, 2025
Note: The Program end date has been updated to reflect the extension approved by the SB 1049 Steering Team. Rebaseline activities will begin soon.

Program statement:

SB 1049 is comprehensive legislation intended to address the increasing cost of funding Oregon's Public Employees Retirement System (PERS), reduce system Unfunded Actuarial Liability (UAL) obligations, and provide relief to escalating contribution rate increases for public employers. Implementation will occur across six subprojects.

Subprojects:

Project 1: Employer Programs
Project start: July 1, 2019 | Project end: July 16, 2021
Project status: **Complete**

Project 2: Work After Retirement (WAR)
Project start: July 1, 2019 | Project end: February 24, 2022
Project status: **Complete**

Project 3: Salary Limit
Project start: July 1, 2019 | Project end: May 28, 2021
Project status: **Complete**

Project 4: Member Redirect
Project start: July 1, 2019 | Project end: May 9, 2025
Project status: Red

Project 5: Member Choice
Project start: October 23, 2019 | Project end: August 4, 2021
Project status: **Complete**

Project 6: Technical Debt
Project start: June 22, 2021 | Project end: April 29, 2024
Project status: Red

Overall program status: Red

The program status remains red while the Member Redirect and Technical Debt teams complete their replanning efforts. Schedule updates are nearly complete and review cycles are well underway. Once approved, the project schedules will be re-baselined, and the SB 1049 team will re-evaluate the overall health status for the entire program and component projects. Re-baselining is planned to be complete by the end of July.

User Acceptance Testing (UAT) was completed for the next major release, which will occur on 6/29/2023, and includes both Member Redirect and Technical Debt components. UAT results were excellent, with zero outstanding defects at the end of UAT. The production deployment is on track for 6/29/2023.

All required 2023-2025 SB 1049 Work Order Contract amendments have been approved and executed.

Member Redirect and Technical Debt have activities planned into the 2023-2025 biennium, and that budget has not been approved. Should no budget be passed, a Continuing Resolution by the Governor is in place to provide funding at current levels through 9/15/2023.

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Budget health: Yellow

The budget health is yellow because work for Member Redirect and Technical Debt will extend beyond the 2021-2023 biennium and that budget has not been approved yet.

Should no budget be passed, a Continuing Resolution by the Governor is in place to provide funding at current levels through 9/15/2023.

29560- SB 1049 Implementation Program by Project					
Other Funds Lmt	**21-23 Budget**	**Actual to Date**	**Projections**	**21-23 Total**	**Variance**
Work After Retirement	$ 1,127,741	$ 527,076	$ -	$ 527,076	$ -
Variance from WAR	$ -	$ -	$ -	$ -	$ 600,665
Member Redirect	$ 19,473,730	$ 18,151,431	$ 1,803,029	$ 19,954,460	$ (480,730)
Technical Debt	$ 2,565,741	$ 1,815,656	$ 66,554	$ 1,882,210	$ 683,530
				$ -	$ -
Total	$ 23,167,212	$ 20,494,164	$ 1,869,583	$ 22,363,747	$ 803,464

29560- SB 1049 Implementation Program by POP					
Other Funds Lmt	**21-23 Budget**	**Actual to Date**	**Projections**	**21-23 Total**	**Variance**
Project Management & Admin	$ 2,044,800	$ 1,632,788	$ (788)	$ 1,632,000	$ 412,800
Quality Assurance and Testing	$ 812,500	$ 645,734	$ 166,766	$ 812,500	$ -
Info Technology Applications	$ 13,337,000	$ 12,226,397	$ 1,522,741	$ 13,749,138	$ (412,138)
Operational Implementation	$ 6,972,912	$ 5,989,245	$ 180,866	$ 6,170,111	$ 802,801
Total	$ 23,167,212	$ 20,494,164	$ 1,869,585	$ 22,363,747	$ 803,464

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Schedule health: Red

Schedule updates are in process to incorporate SB 1049 Steering Team approved change requests for the Member Redirect and Technical Debt projects. Once all changes are approved, these schedules will be re-baselined. This is planned to be complete in July 2023.
The Cross Project Effort is red due to delays in UAT activities for WP 6 (IAP Balance Comparison Tool), and due to impacts from the Member Redirect change requests on WP 7.3 (Payouts Actuarial Extract).

Scope health: Green

The current project scope is well understood.

Quality Assurance activities:

- iQMS Deliverable 4.1.13 Quarterly QA Status and Improvement Report started 3/10/2023, completed 6/5/2023.
- iQMS Deliverable 3.3.13 Periodic Quality Status Report starts 4/26/2023, due 6/29/2023.
- iQMS Deliverable 4.1.14 Quarterly QA Status and Improvement Report starts 6/8/2023, due 8/18/2023.

Emerging concerns/needs/impacts:

- All project schedules are in the process of being updated and re-baselined due to change requests approved by the SB 1049 Steering Team
  - Member Redirect is about 75% done with their updates and punch list reviews.
  - Technical Debt has completed their updates and punch list reviews. They expect to submit their schedule for Quality Check Point review (final approval) the week of 6/26/2023.
  - The Cross Project Effort schedule is being updated to recognize the UAT delay for WP 6 (IAP Balance Comparison Tool). Additional changes will be required for WP 7.3 (Payouts Actuarial Extract) in the future. WP 7.3 has dependencies on Member Redirect work packages and will be finalized once Member Redirect is re-baselined.
  - The Program schedule has been updated to reflect the Member Redirect project extension. This schedule will be re-baselined after all project schedules are complete and re-baselined.

- There is a continued concern that non-SB 1049 projects could have a negative impact to SB 1049:
  - Resources, both people and technical, may be negatively impacted. The SB 1049 team continues to monitor resource allocations for SB 1049 resources across all projects (where data is available) and mitigate impacts where issues are found. The SB 1049 Project Managers proactively manage their schedules to ensure major milestones are kept on track.
  - Staff could transfer off of SB 1049, requiring backfill and training of new resources.
  - jClarety production deployments (both SB 1049 and non-SB 1049) are stacked very tightly for the foreseeable future. There is little room to accommodate schedule slippage for any release without impacting subsequent SB 1049 releases.

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Program Risks and Mitigation

Listed below are the most critical risks for this project.
For the complete Risk Log, please see the Risk Log tab in the most recent weekly status report: SB 1049 Program Weekly Status Report

#	Risk Description	Mitigation and/or Contingency Plan	Notes
39	**Critical Resources Allocated to non-SB 1049 Work:** Critical SB 1049 resources are allocated to non-SB 1049 work, impacting availability for SB 1049 potentially causing schedule delays.	➢ Coordinate with non-SB 1049 projects to identify and resolve resource conflicts ➢ Reassign non-SB 1049 work to operational resources not working on SB 1049	
120	**Impact of non-SB 1049 projects to SB 1049:** Non-SB 1049 projects running concurrent with SB 1049 could negatively impact SB 1049 resource availability and/or SB 1049 project timelines.	➢ Careful coordination with non-SB 1049 project managers ➢ Escalate when conflicts cannot be avoided	The SB 1049 Product Owner has accepted a position on the Modernization Program. Transition planning is in process, with SB 1049 continuing to be the priority through at least September, 2023. A backfill has not been identified yet.

Program Issues and Action Plans

Listed below are the most critical issues for this project.
For the complete Issue Log, please see the Issue Log tab in the most recent weekly status report: SB 1049 Program Weekly Status Report

No	Issue	Resolution / Notes	Estimated Resolution Date
22	**Technology Risk: Complex, New or Untried Process:** The project solution is complex, new, untried in the market or not aligned with best practices.	➢ PowerApps is being used for Cross Project Effort (CPE) WP 6 (IAP Balance Comparison Tool), but this tool is new to PERS, and the learning curve has been significant. ➢ CPE WP 6 UAT will not be completed on 6/30/2023 per the current schedule. Replanning of the outstanding UAT work is in process.	7/31/2023
23	**Schedule Capacity or Re-Baseline Planning:** The project schedule does not have capacity for all scope needed and is delayed or requires a re-baseline.	➢ Schedule updates and reviews due to approved change requests are in process. Re-baseline of project schedules is planned by the end of July, 2023.	7/31/2023

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Program information: Cross Project Effort (CPE)

Start: May 28, 2020 **| End:** TBD *(likely early 2025)*
Project Manager: Susan K. Mundell

Cross Project Effort objective:

The Cross Project Effort (CPE) is focused on technical tools, and extracts that are used across multiple SB 1049 projects. Originally, these efforts were included as Work Packages within the individually impacted projects. The scope of this effort has not changed, but the work has been restructured to ensure it receives an appropriate level of coordination and ensure the success of the necessary inter-project integrations.

Overall status: Red

Narrative: WP 6 (IAP Balance Comparison Application) Quality Assurance Testing and User Acceptance Testing (UAT) is in process, due 6/30/2023. The team has determined that it will not be able to achieve the UAT success criteria by 6/30/2023 and is developing an approach to resolve the remaining work. This will delay both the UAT end date and the planned 7/11/2023 production deployment date.

CPE WP 7.3 (Payouts Actuarial Extract) is dependent upon the release of Member Redirect WP 11.2B (Death Excess Employer Pension Stability Account (EPSA)). Development for CPE WP7.3 will not begin until late 2024. The schedule for CPE WP 7.3 is being updated and should be rebaselined in July. Note that the changes to CPE WP 7.3 do not impact CPE scope or budget, just the timing of when the work can be executed.

Once the project teams and SB 1049 Steering Committee approve the updated schedule and WP 6 is deployed to production, the project can return to a green status.

Schedule Deliverables and Milestones

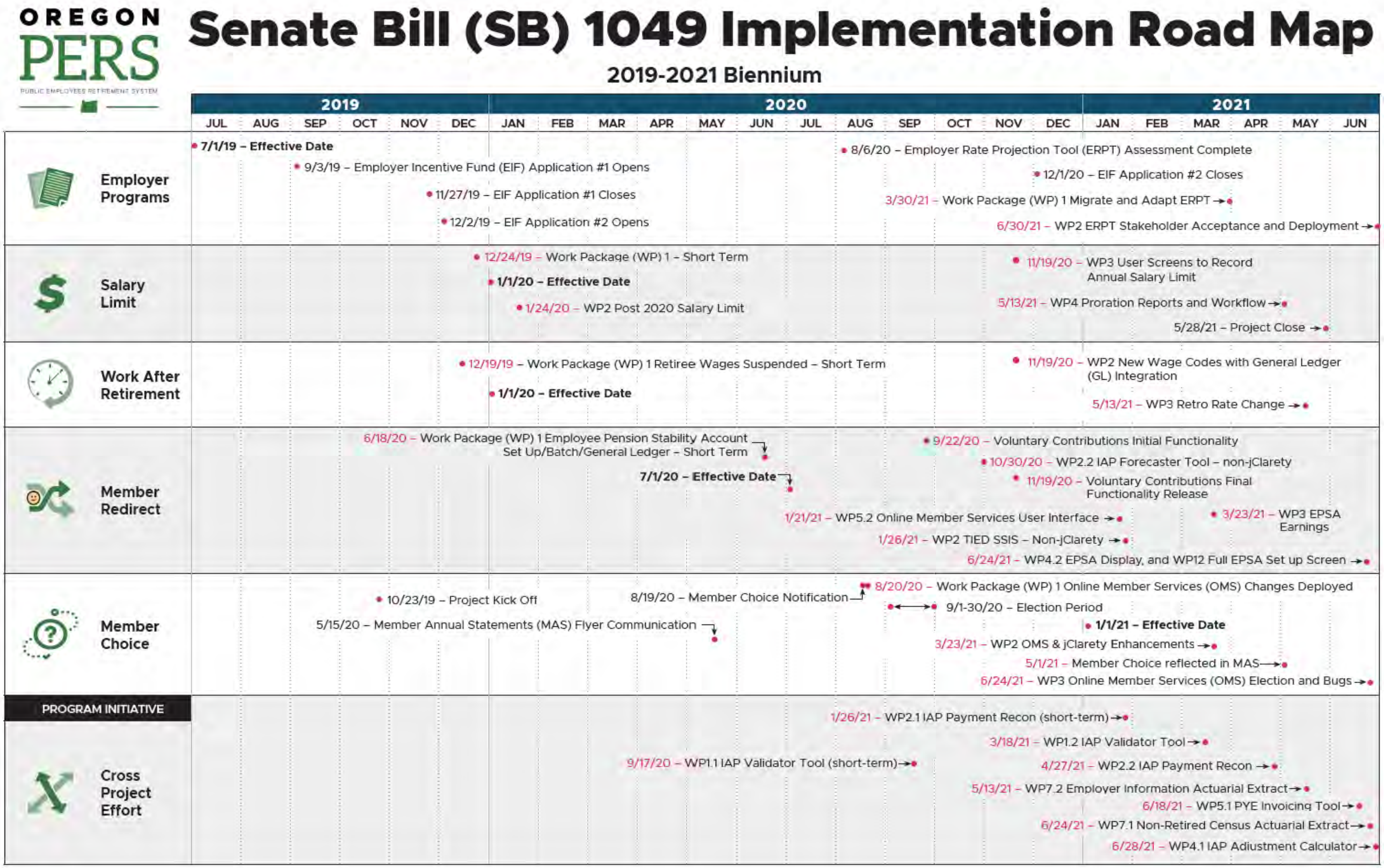
Milestones Schedule				
Milestone	Percent Complete	Baseline Finish Date	Actual / Forecast Finish Date*	Status/ Notes
WP 6: IAP Balance Comparison UAT Complete	0%	09/26/2022	6/30/2023	UAT replanning in process
WP 6: IAP Balance Comparison Production Release	0%	10/04/2022	7/11/2023	Deployment replanning in process
WP 7.3: Payouts Actuarial Extract Production Release	0%	2/22/2024	TBD	Schedule update in progress
Cross Project Effort Closure	0%	5/13/2024	TBD	Schedule update in progress

*Finish Date Color: Green = on Schedule, Yellow = in Jeopardy, Red = Late

SB 1049 Implementation Program

Status Report for June 23, 2023

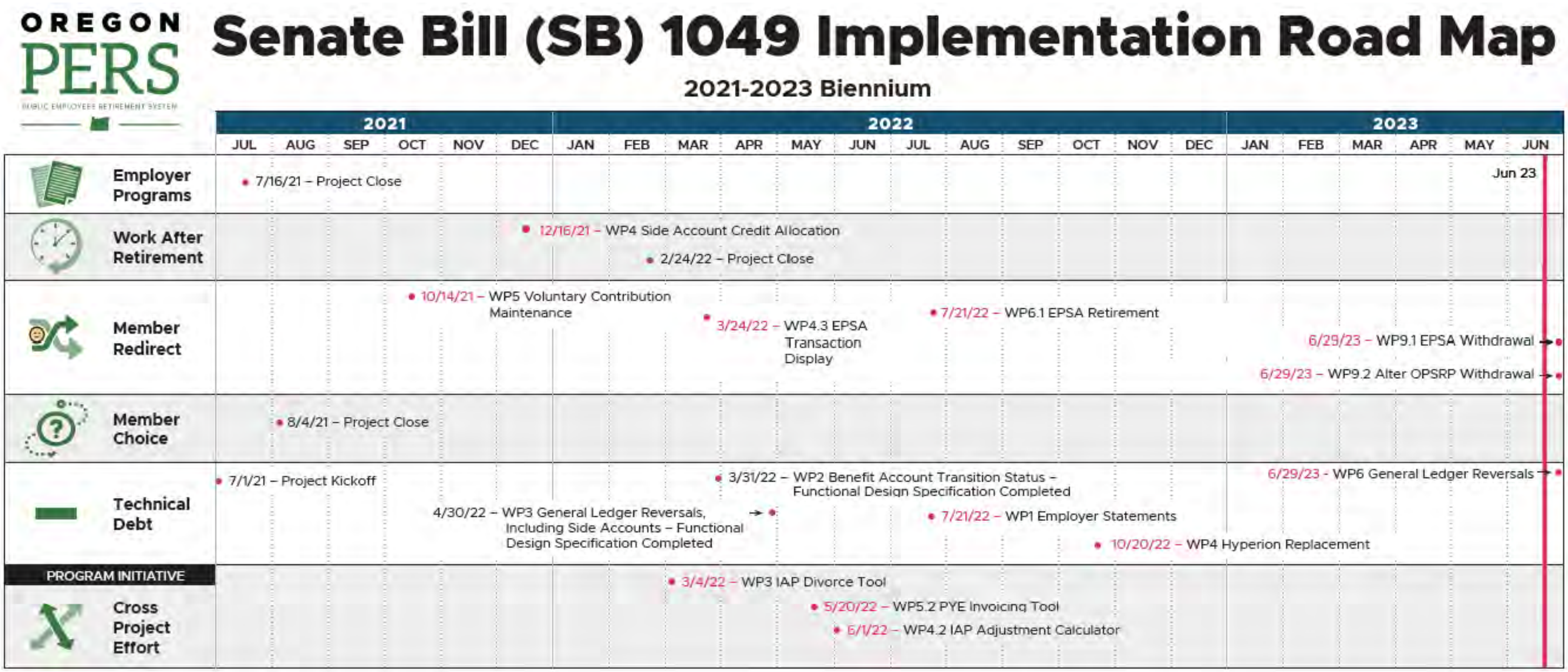
Executive Sponsor: Kevin Olineck
Program Manager: James Allen



SB 1049 Implementation Program

Status Report for June 23, 2023

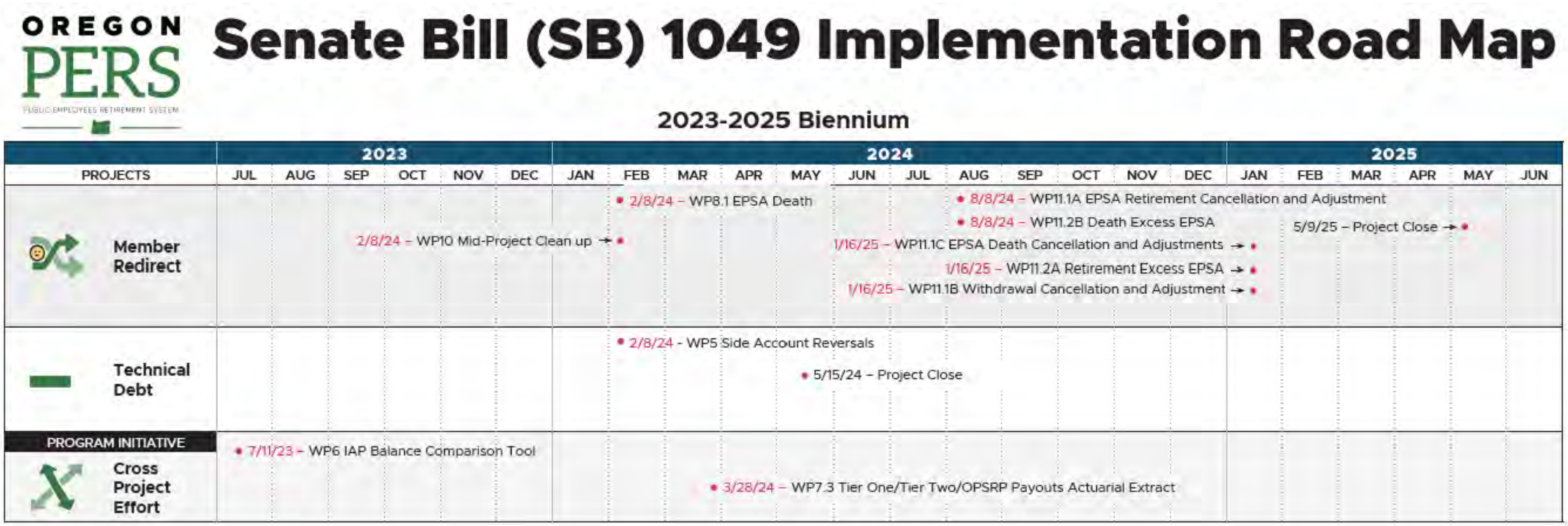
Executive Sponsor: Kevin Olineck
Program Manager: James Allen



SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen



SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project information: Member Redirect

Project start: July 1, 2019, | **Project end:** May 9, 2025
Project Manager: Chris Yu

Project objective:

Effective July 1, 2020, this section of the bill redirects a portion of member contributions to a new Employee Pension Stability Account (EPSA) when the funded status of the plan is below 90% and the member's monthly salary is more than $2,500.

Overall project status: Red

Project Narrative: The project health status remains red while we update and review the project schedule. The final release schedule will be submitted to punch list review on 6/30/2023. The Member Redirect schedule is projected to be re-baselined in July.

WP 9.1 (EPSA Withdrawal) and WP 9.2 (Alter OPSRP Withdrawal) completed User Acceptance Testing on 6/7/2023. Both work packages are on track for the 6/29/2023 deployment. The final results of UAT were 100% Tested and 100% Passed. Zero defects are outstanding.

Change Request-013 (Remove WP11.2-A Retirement Excess EPSA from SB 1049 Scope) was approved by the SB 1049 Steering Team on 5/23/2023.

Construction for WP 8.1 (EPSA Death) continues towards the 8/1/2023 completion date.

Note: The dates in this report have been updated to reflect the schedule that is in review to be re-baselined. They are subject to change until the re-baseline occurs but reflect the most accurate information we have at this time.

Work Package 9.1 EPSA Withdrawal

- Production Deployment Date: 6/29/2023
- Business Functional Testing was completed on 11/30/2022
- 1st User Acceptance Testing (UAT) was completed on 3/9/2023
- Final UAT, including the DAS P&D Check File fix was completed on 6/7/2023

Work Package 9.2 Alter OPSRP Withdrawal

- Production Deployment Date: 6/29/2023
- Business Functional Testing was completed on 11/30/2022
- 1st User Acceptance Testing was completed on 3/9/2023
- Final UAT was completed on 6/7/2023.

Work Package 8.1 EPSA Death

- Production Deployment Date: 2/15/2024
- Construction will be completed on 8/1/2023
- Business Functional Testing will begin on 8/2/2023
- User Acceptance Testing will begin on 10/20/2023

Work Package 10 Mid-Project Clean up

- Production Deployment Date: 2/15/2024
- Construction will be completed on 8/1/2023
- Business Functional Testing will begin on 8/2/2023
- User Acceptance Testing will begin on 10/20/2023

Additional long-term work packages exist. See the Milestones Schedule for a complete list of work packages

SB 1049 Implementation Program

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Budget health: Green

There will need to be additional funding for 2023-2025, which will be tracked at the program level.

29560 SB1049 - Member Redirect Project					
Expenses	**Budget**	**Actual to Date**	**Projections**	**Total**	**Variance**
*Personal Services - PERS	$ 1,658,226	$ 912,643	$ 745,583	$ 1,658,226	$ -
Personal Services - SB1049	$ 5,956,112	$ 5,318,752	$ 637,360	$ 5,956,112	$ -
Services and Supplies	$ 1,686,960	$ 1,450,146	$ 126,429	$ 1,576,575	$ 110,385
IT Professional Services	$ 12,326,323	$ 11,365,846	$ 1,044,078	$ 12,409,924	$ (83,601)
IT Expendable Property	$ 50,000	$ 16,687	$ -	$ 16,687	$ 33,313
Data Processing Hardware	$ 55,000	$ -	$ -	$ -	$ 55,000
SB1049 Total Expenses	$ 20,074,395	$ 18,151,431	$ 1,807,867	$ 19,959,298	$ 115,097
Project Total	**$ 21,732,621**	**$ 19,064,074**	**$ 2,553,450**	**$ 21,617,524**	**$ 115,097**
Average Monthly Spend (Burn Rate)		$ 756,309.64	$ 75,327.78		
*Not included in SB1049 Expenses					

Schedule Health: Red

The project schedule is being updated to be re-baselined. The final release schedule will be submitted for punch list review on 6/23/2023, with re-baseline planned by the end of July 2023.

Scope health: Green

Project scope is understood. CR-013 (Remove WP11.2-A Retirement Excess EPSA from SB 1049 scope) was approved by the SB 1049 Steering Team on 5/23/2023.

Quality Assurance activities:

- The move to Production Quality Gate for WP 9.1 and WP 9.2 was approved on 6/9/2023.
- The Monthly Release Management Report will be submitted for Quality Check Point review on 6/30/2023.

Emerging concerns/needs/impacts:

- The current priority is to finish the re-planning effort and re-baseline the project schedule. The final release review will to be submitted for punch list review on 6/30/2023, followed by a final Quality Check Point review. Once approved, this is expected to return Member Redirect's health to green.

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

High Level Project Risks and Mitigation

Listed below are the most critical risks for this project.
For the complete Risk Log, please see the Risk Log tab in the most recent weekly status report: Member Redirect Weekly Status Report

#	Risk Description	Mitigation and/or Contingency Plan	Notes
4	**Internal Staffing:** Resource shifting, competing priorities, or over allocation impact the availability of dedicated project resources, or a key resource leaves PERS or is out for an extended period, and/or staff experience levels are inadequate and meet quality needs	➢ Work with other SB 1049 and non-SB 1049 Project Managers during bi-weekly resource allocation meeting to manage resources and schedule ➢ Confirm back-up resources and communicate with team Managers	There are several key resources that are expected to retire or transition out of the Member Redirect Project. The Project Manager is confirming back-up resources and awaiting managers to provide more details.
4	**WP11.1B/WP11.1C Development timeline:** Due to Change Request 012 (WP8.1 and WP10 Release Date Change), the overall development duration was compressed, which could add risk to the overall projected schedule.	➢ The Project Manager will review the punch list updates and have a review session with the project team. ➢ See if other tasks can be compressed to add time to development	

Project Issues and Action Plans

Listed below are the most critical issues for this project.
For the complete Issue Log, please see the Issue Log tab in the most recent weekly status report: Member Redirect Weekly Status Report

No	Issue	Resolution / Notes	Estimated Resolution Date
18	**DAS P&D unable to process new WP9.1 check files:** DAS Publishing & Distribution is unable to process two new SB 1049 fiduciary check files.	➢ This solution passed User Acceptance Testing with no outstanding defects on 6/7/2023 ➢ Production deployment is on track for the scheduled 6/29/2023 release date	6/29/2023

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project Schedule Deliverables and Milestones

Note: Schedule re-baseline is in process. Expected re-baseline dates are listed in the Forecast Finish Date column.

Milestones Schedule				
Milestone	**Percent Complete**	**Baseline Finish Date**	**Actual / Forecast Finish Date***	**Status/ Notes**
WP 5.1 - Voluntary Contribution maintenance	100%	10/14/2021	10/14/2021	
WP 4.3 – EPSA Correct Member Account	100%	3/24/2022	3/24/2022	
WP 6.1 – EPSA Retirement	100%	7/21/2022	7/21/2022	
WP 9.1 – EPSA Withdrawal	0%	2/23/2023	6/29/2023	This date change has been approved by the SB 1049 Steering Team
WP 9.2 – Alter OPSRP Withdrawal	0%	2/23/2023	6/29/2023	This date change has been approved by the SB 1049 Steering Team
WP 8.1 – EPSA Death	0%	7/21/2023	2/15/2024	Efforts to re-baseline all remaining milestones are expected to be complete in July 2023
WP 10 – Mid-Project Clean up	0%	7/21/2023	2/15/2024	
WP 11.1A – EPSA Retirement Cancelation and Adjustments	0%	12/21/2023	8/8/2024	
WP 11.2B – Death Excess EPSA	0%	12/21/2023	8/8/2024	
WP 11.1B – Withdrawal Cancelation and Adjustments	0%	12/21/2023	1/16/2025	
WP 11.1C - EPSA Death Cancelation and Adjustments	0%	12/21/2023	1/16/2025	
Project Complete	0%	4/25/2024	5/9/2025	

*Finish Date Color: Green = on Schedule, Yellow = in Jeopardy, Red = Late

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project information: Technical Debt

Project start: June 22, 2021 | **Project end:** April 29, 2024 (tentative)
Project Manager: Susan Mundell

Project objective:

The SB 1049 Technical Debt Project will address areas of technical debt which have been encountered and identified in the SB 1049 Implementation Program and prioritized for resolution. Resolution of technical debt will be limited to those items that are created by SB 1049, are exacerbated by SB 1049, or inhibit PERS' ability to complete SB 1049 requirements.

Overall project status: Red

Project Narrative:

Technical Debt WP 6 (General Ledger Reversals) is being prepared for the 6/29/2023 production release. UAT for this work package concluded with 100% tested and 100% passed.

Technical Debt WP 5 (Side Account Reversals) is in development which is planned to continue until 8/9/2023. A backlog requirement from Technical Debt WP 1 that gives employers new functionality to download their statements is also included in this development and deployment effort. The tentative deployment date for this work package is 2/15/2024.

The updated schedule is in final team review in preparation for Quality Check Point review. After the review is approved, the schedule will be re-baselined, and the project health status is expected to return to green. This is expected by the end of July, 2023.

Work Packages:

Work Package 1: Employer Statements

- Production Deployment Date: 7/21/2022 (complete)

Work Package 2: Benefit Account Status Transition

- Functional Design Specification 3/31/2022 (complete)

Work Package 3: General Ledger and Side Account Reversals

- Functional Design Specification 4/30/2022 (complete)

Work Package 4: Hyperion Replacement

- Production Deployment: 10/20/2022 (complete)

Work Package 5: Side Account Reversals

- Production Deployment Date: 2/15/2024 (tentative)
- Elaboration completed 3/17/2023
- Development will be completed 8/9/2023

Work Package 6: General Ledger Reversals

- Production Deployment Date: 6/29/2023

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

CR or WP#	Description	Status	SB 1049 Technical Debt Qualification	Other Considerations/Notes
WP 1	Employer Statements	Closed	**Exacerbated by SB 1049**: New financial components from Member Redirect and WAR projects have made employer statements inaccurate and difficult for employers to understand and reconcile.	The enhancements will make statements easier to read- like a bank statement- and correct the inaccurate information
WP 2	Benefit Account Status Transition	Closed	**Exacerbated by SB 1049**: SB 1049 introduced changes to the way employers report retiree salary and downstream inconsistent activity in recipient and benefit accounts was discovered.	The functional design specification document identified which statuses are correct and information has been updated for developers to utilize in future programming
WP 3	General Ledger and Side Account Reversals	Closed	**Exacerbated by SB 1049**: Two issues impacting General Ledger were discovered during the WAR project related to transaction reversals. Although these issues existed before SB 1049, the additional functionality added to implement the WAR project have exacerbated these issues.	Through the functional design specification document, it has been determined that although these issues are both related to reversals, the solutions will be different. A decision was made to develop two change requests (CR006 & CR007) to explore adding solutions to these issues to the project scope in future work packages.
WP 4	Hyperion Replacement	Closed	**Inhibit PERS' ability to complete SB 1049**: Oracle Hyperion is end of life and a decision was made to discontinue developing new reports in a deprecated product. Member Redirect WP 9.1 has a dependency on the reporting features of Hyperion so the solution must be in place to support this WP. The scope of this WP delivers the solution in SSRS, a Microsoft product, as well as one report to be used as a test case for developers when addressing other reports used by the agency.	There are two other non-SB 1049 work streams to complete the Hyperion replacement: • A Maintenance and Enhancement effort to convert approximately 80 reports • A Central Data Management effort to convert BRIO based reports which are utilized by the Financial Services Division. This work must be completed by 6/30/22 to comply with Oracle's mandate.

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

CR or WP#	Description	Status	SB 1049 Technical Debt Qualification	Other Considerations/Notes
WP 5	Side Account Reversals	In Process	**Exacerbated by SB 1049**: Issues impacting Side Account Reversals were discovered during the WAR project.	Through the As-Is documentation produced in WP 3, we have found that Side Account Reversals are a complex issue to address. Development for this work package is planned to continue until 8/9/2023.
WP 6	General Ledger Reversals	In Process	**Exacerbated by SB 1049**: Issues impacting General Ledger transaction reversals were discovered during the WAR project.	Through the As-Is documentation produced in WP 3, we have found that the issues causing incorrect General Ledger is a technical debt item which should be addressed by SB 1049 Technical Debt Project. This work package is planned for production deployment on 6/29/2023.

*__Note__: Change requests will be transitioned to work packages if/when the CR is approved by the SB 1049 Steering Team. No more change requests are anticipated for this project.

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Budget health: Green

There will need to be additional funding for 2023-2025, which will be tracked at the program level.

29560 SB1049 - Technical Debt Project					
Expenses	Budget	Actual to Date	Projections	Total	Variance
*Personal Services - PERS	$ 500,000	$ 479,352	$ 20,648	$ 500,000	$ -
Personal Services - SB1049	$ 200,000	$ 128,277	$ 71,723	$ 200,000	$ -
Office Expenses	$ 105,000	$ 2,887	$ 6,113	$ 9,000	$ 96,000
IT Professional Services	$ 1,555,000	$ 1,015,832	$ 6,623	$ 1,022,455	$ 532,545
Professional Services - QA + PM	$ 685,741	$ 652,425	$ 97,318	$ 749,743	$ (64,002)
IT Expendable Prop	$ 20,000	$ 16,235	$ -	$ 16,235	$ 3,765
SB1049 Expenses	$ 2,565,741	$ 1,815,656	$ 181,777	$ 1,997,433	$ 568,308
Project Total	**$ 3,065,741**	**$ 2,295,008**	**$ 202,425**	**$ 2,497,433**	**$ 568,308**
Average Monthly Spend (Burn Rate)		$ 75,652.33	$ 7,574.06		
*Not included in SB1049 Expenses					

Schedule Health: Red

WP 5 release date has been approved for extension to maintain alignment with Member Redirect WP 8.1 (EPSA Death).
Schedule updates are complete and in review. Once finalized, the schedule will be re-baselined, and the Schedule Health will return to green.

Scope health: Green

The current project scope is well understood.

Quality Assurance activities:

- A Quality Check Point review for the Final Design Specification WOC_DASPS-1812-21_D2.7.1 was completed on 5/22/2023.
- A Punch List Review of the Technical Debt WP5 (Side Account Reversals) Schedule was completed on 6/6/2023.
- The Move to Production Quality Gate for WP 6 was approved on 6/9/2023.
- A Quality Check Point review for the Contractor Support Log was completed on 6/12/2023.

Emerging concerns/needs/impacts:

- The schedule for WP 5 (Side Account Reversals) will extend into the 2023-2025 biennium. PERS has not yet received legislative approval for the 2023-2025 Budget Request.

High Level Project Risks and Mitigation

Listed below are the most critical risks for this project.
For the complete Risk Log, please see the Risk Log tab in the most recent weekly status report: Technical Debt Weekly Status Report

#	Risk Description	Mitigation and/or Contingency Plan	Notes
3	**Internal Staffing- Limited, Loss of or Inexperienced Resources:** Limited specialized resources, resource shifting and competing priorities pull dedicated project resources, a key resource leaves PERS or is out for an extended period, and/or staff experience levels are inadequate.	➢ Ensure that project knowledge is shared so that others can pick up is a resource is shifted. ➢ Hire or move knowledgeable staff for replacement, backup or fill in as additional help.	The Product Owner is moving to the Modernization Program. Negotiations have her as primary in SB 1049 through September 2023.
5	**Technology Risk- Complexity and fragility of jClarety system** jClarety, PERS primary system of record, is a nineteen-year-old application that has had four pension plans integrated into the functionality with multiple cross tentacles between pension plans which are governed by over 1000 business rules. Each and every change on the surface may seem small, but at times can have far reaching impact to the application. New code changes could require refactoring of primary processes which can greatly increase the scope of work for both development and testing.	➢ Iteratively develop more complex code structure; Add necessary technical debt fixes to project scope; Regression Test to ensure technical issue do not negatively affect new code.	The focus of Technical Debt WP 5 and WP 6 is general ledger and side accounts- two areas where we have known gaps in documentation and system knowledge. The Functional Design Specification developed in WAR and Technical Debt WP 3 will assist.

Project Issues and Action Plans

Listed below are the most critical issues for this project.
For the complete Issue Log, please see the Issue Log tab in the most recent weekly status report: Technical Debt Weekly Status Report

No	Issue	Resolution / Notes	Estimated Resolution Date
4	**Realized Risk 23: Release Delay** - Other projects or agency priorities cause a delay in a planned Technical Debt Work Package release.	➢ Member Redirect CR-011 authorized a release date change for Technical Debt WP 6 to 6/29/2023. ➢ Technical Debt CR-010 was approved on 5/16/23 by SB 1049 Steering Team to extend the WP 5 release date to maintain alignment with Member Redirect WP 8.1 (EPSA Death) in Feb 2024.	7/31/2023

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project Schedule Deliverables and Milestones

Milestones Schedule				
Milestone	**Percent Complete**	**Baseline Finish Date**	**Actual / Forecast Finish Date***	**Status/ Notes**
WP 6 - Development Complete	100%	12/30/2022	12/30/2022	
WP 6 - Business Functional Testing complete	100%	2/14/2023	2/14/2023	
WP 6 - User Acceptance Testing complete	0%	5/19/2023	6/7/2023	
WP 6 - Release to production Quality Gate complete	0%	5/24/2023	6/12/2023	
WP 6 - Production Deployment complete	0%	6/8/2023	6/29/2023	This date change has been approved by the SB 1049 Steering Team
WP 5 - Development Complete	0%	8/9/2023	8/9/2023	
WP 5 - Business Functional Testing complete	0%	9/21/2023	9/21/2023	
WP 5 - User Acceptance Testing complete	0%	11/22/2023	1/22/2024	The finish dates in red are tentative until the schedule is rebaselined.
WP 5 - Release to production Quality Gate complete	0%	11/30/2023	1/25/2024	
WP 5 - Production Deployment complete	0%	1/18/2024	3/15/2024	
Project Closure Quality Gate	0%	3/11/2024	4/29/2024	
Project ends	0%	3/11/2024	4/29/2024	

*Finish Date Color: Green = on Schedule, Yellow = in Jeopardy, Red = Late

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project information: Salary Limit

Project start: 7/01/ 2019 **| Project end:** 5/28/2021
Project Manager: Bruce Rosenblatt

Project objective:

The Salary Limit Project is necessary because SB 1049 redefined "salary," which changes the calculation method for Final Average Salary, and contributions for members with subject salary greater than $195,000. This limit is on salary for plan purposes, and is not a salary cap. The Salary Limit was adjusted for the Consumer Price Index, on 1/04/2021. The redefinition impacts the data and business processes used by diverse teams at PERS, including Benefit Calculations, Member Estimates, Data Verifications, Employer Data Reporting, and Account Data Reviews and Reporting.

Overall project status: Complete

Project Narrative: The Salary Limit Project was successfully closed on 5/28/2021.

Work Packages:

Work Package 1: Short-term Minimum Viable Product (MVP)

- Production Deployment Date: 12/24/2019 (Complete)

Work Package 2: Annual Implementation of New Salary Limit

- Production Deployment Date: 1/23/2020 (Complete)

Work Package 3: Adding self-service screens to jClarety system to record annual changes and effective dates – Long-term

- Production Deployment Date: 11/19/2020 (Complete)

Work Package 4 – Enhances proration work processes when partial year calculations may apply – Long-term

- Production Deployment Date: 5/13/2021 (Complete)

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project information: Employer Programs

Project start: July 1, 2019 | **Project end:** July 16, 2021
Project Manager: Joli Whitney

Project objective:

The Employer Programs section of SB 1049 expands the requirements for the Employer Incentive Fund (EIF); and appropriates $100 million from the General Fund to the Employer Incentive Fund; directs net proceeds from Oregon Lottery Sports betting to the Employer Incentive Fund; allows participating public employers who make larger than $10 million deposits to side accounts to determine when they wish to have these funds included in their employer rate assessment; and requires all public employers to participate in the Unfunded Actuarial Liability Resolution Program (UALRP).

Overall project status: Complete

Project Narrative: The Employer Programs project was successfully closed on 7/16/2021.

Work Packages:

WP1 Migrate and Adapt ERPT

- Acceptance Quality Gate: 3/23/2021 (this WP was not released to production) (Complete)

WP2 ERPT Stakeholder Acceptance and Deployment to Cloud

- Production Deployment Date: 6/3/2021 (Complete)

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project information: Member Choice

Project start: October 23, 2019 | **Project end:** August 4, 2021
Project Manager: Joli Whitney

Project objective:

The Member Choice sections of SB 1049 give members a say in how their Individual Account Program (IAP) accounts will be invested. Members' regular IAP accounts are currently allocated to Target-Date Funds (TDF) based on their year of birth. Beginning with calendar year 2021, members will be able to elect a TDF other than the default TDF.

Overall project status: Complete

Project Narrative: The Member Choice project was successfully closed on 8/4/2021.

Work Packages:

WP1.1 Online Election

- Production Deployment Date: 8/20/2020 (Complete)

WP1.2 Voya's updates to website and nightly sweep program

- Production Deployment Date: 1/19/2021 (Complete)

WP1.3 PERS paper form election process including workflow

- Production Deployment Date: 8/12/2020 (Complete)

WP1.4 Development of new reports (to Voya and internal)

- Production Deployment Date 9/29/2020 (Complete)

WP2- Refining TDF Processes – Long-term

WP2.1 –Online Member Services and jClarety Enhancements

- Production Deployment Date: 3/23/2021 (Complete)

WP2.2 -Central Data Management Reports

- Production Deployment Date: 6/15/2021 (Complete)

WP3- Online Member Services Election and Bugs

- Production Deployment Date: 6/24/2021 (Complete)

SB 1049 Implementation Program

Status Report for June 23, 2023

Executive Sponsor: Kevin Olineck
Program Manager: James Allen

Project information: Work After Retirement (WAR)

Project start: July 1, 2019 | **Project end:** 2/24/2022
Project Manager: Susan K. Mundell

Project objective:

Effective January 1, 2020, the Work After Retirement (WAR) sections of SB 1049 allow most service retirees to work unlimited hours for PERS participating employers in calendar years 2020-2024 while retaining their retirement benefit. It also requires employers to pay employer contributions on retirees' salary during that period.

Overall project status: Complete

Project Narrative: The Work After Retirement Project was successfully closed on 2/24/2022.

Work Packages:

Work Package 1: Suspend DTL2-07 Retiree Wage Codes – Short-term

- Production Deployment Date: 12/19/2019 (Complete)

Work Package 2: New Wage Codes with General Ledger Integration – Long-term

- Production Deployment Date: 11/19/2020 (Complete)

Work Package 3: Retro Rate Change – Long-term

- Production Deployment Date: 5/13/2021 (Complete)

Work Package 4: Side Account Credit Allocation

- Production Deployment Date: 12/16/2021 (Complete)

July 28, 2023
PERS Board meeting agenda

Action and discussion items

1. Legislative Session Review and 2023-25 Budget Update
   a. Session Overview and 2024 Preview
   b. 2023-25 Budget
2. SB 1049 Update
3. Valuation methods and assumptions including assumed rate of return
4. Notice of Assumed Rate OAR

Milliman

Valuation Methods & Assumptions

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

Presented by:

Matt Larrabee, FSA, EA
Scott Preppernau, FSA, EA

July 28, 2023

Today's Agenda

- Background
- Recap of economic assumptions and actuarial methods
  - Includes long-term investment return assumption
  - Reviewed in detail at last Board meeting
- Overview of demographic assumptions
- Estimated effect of assumptions

Executive Summary

- Since last meeting, we analyzed PERS member census data and are recommending updates to certain demographic assumptions
  - Largest impact comes from update to individual member salary increase assumptions, including a projection of increases in excess of the long-term assumption for the next two years
  - Combined, those recommendations are estimated to have a:
    - 1.1% increase in the accrued liability and increase the UAL by $1.1 billion (rounded to the nearest $100 million)
    - 1.4% of payroll increase in the system-average advisory 2025-2027 uncollared rate
- We recommend adopting the revised amortization methodologies for side accounts and Pre-SLGRP amounts described in this presentation
  - Better positions PERS to handle expiring amortizations
- While the median result from both OIC's outlook and Milliman's are above the current 6.90% long-term future investment return assumption, **we recommend leaving the assumption unchanged**
  - Consistent with practice of other large pension systems, we recommend being cautious before reacting to higher outlooks that are driven by recent changes in market conditions that may be temporary

Background

Four-Meeting Process – Assumptions & Methods

- April 3: Summary of process, background, and areas of focus

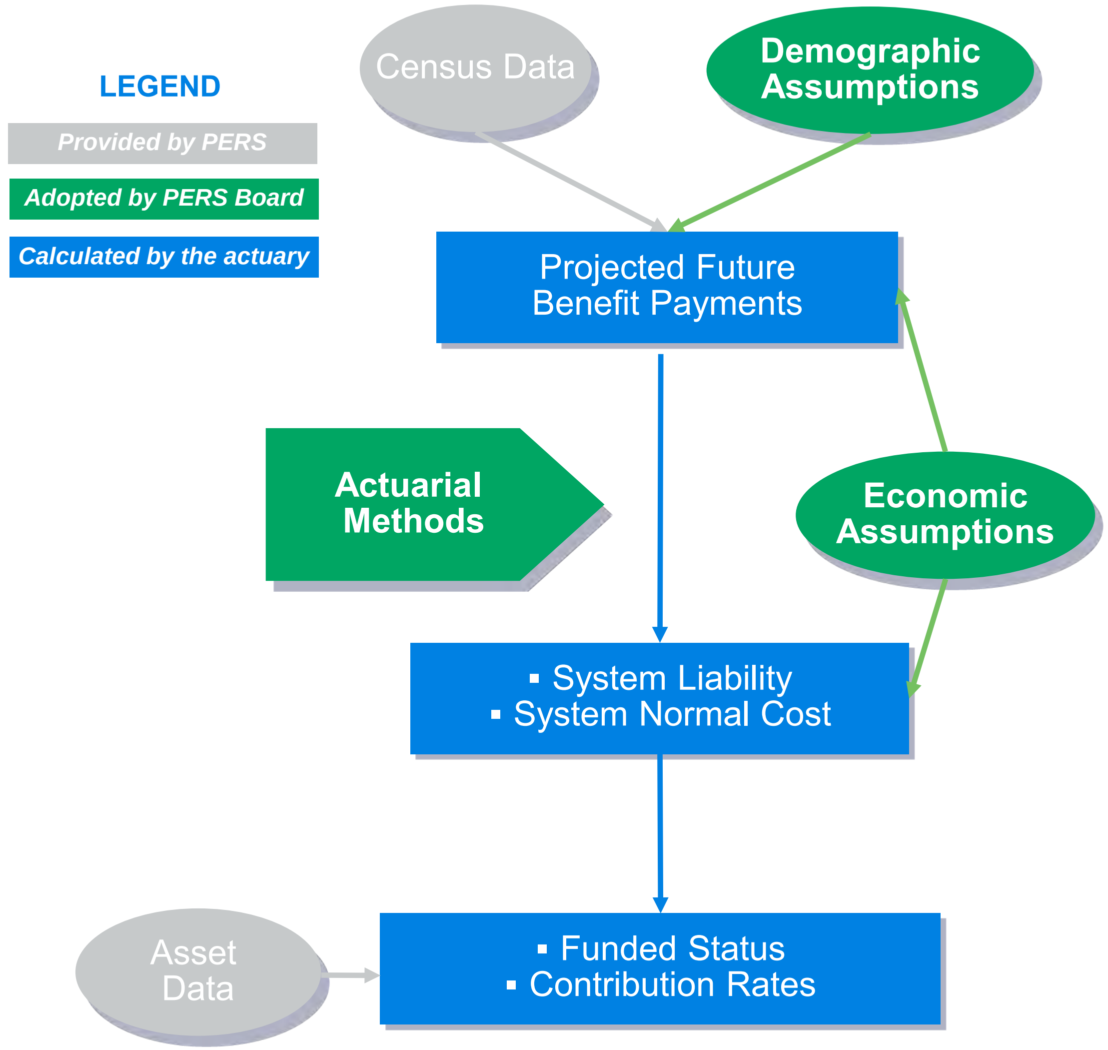
- May 31: Joint meeting with Oregon Investment Council (OIC)
  - Assumed rate – outlooks from OIC's consultants, Milliman

- June 2: Economic assumptions, system funding methods
  - Inflation and system payroll growth
  - Actuarial methods, including amortization and rate collaring policy

- **July 28: Demographic assumptions, Board direction to actuary**
  - **Member-specific assumptions based on study of recent PERS experience**
  - **Assumptions and methods adopted for use in:**
    - **12/31/2022 actuarial valuation with advisory 2025-2027 contribution rates**
    - **12/31/2023 actuarial valuation with proposed final 2025-2027 contribution rates**

Two-Year Rate-Setting Cycle

- **July 2023: Assumptions & methods adopted by Board in consultation with the actuary**
- September 2023: System-wide 12/31/22 actuarial valuation results
- December 2023: Advisory 2025-2027 employer-specific contribution rates
- July 2024: System-wide 12/31/23 actuarial valuation results
- September 2024: Disclosure & adoption of employer-specific **2025-2027 contribution rates**



Valuation Process and Timeline

- Actuarial valuations are conducted annually
  - Alternate between "rate-setting" and "advisory" valuations
  - This valuation as of 12/31/2022 is <u>advisory</u>
- Board adopts contribution rates developed in rate-setting valuations, and those rates go into effect 18 months after the valuation date

Valuation Date	Employer Contribution Rates
12/31/2019 →	July 2021 – June 2023
12/31/2021 →	July 2023 – June 2025
12/31/2023 →	July 2025 – June 2027

Summary of Assumptions and Methods to Review

Economic Assumptions	Actuarial Methods	Demographic Assumptions

▪ Inflation
▪ Real wage growth
▪ System payroll growth
▪ Long-term investment return
▪ **Healthcare cost trend**
	▪ Actuarial cost method
	▪ Amortization policy
	    ▪ UAL (shortfall) amortization
	    ▪ Side account / Pre-SLGRP rate adjustments
	▪ Rate collar
	▪ Contribution lag adjustment
		▪ **Mortality**
		▪ **Retirement**
		▪ **Pre-retirement termination**
		▪ **Disability**
		▪ **Individual salary increases**
		▪ **Final average salary adjustments**
		▪ **Member redirect offsets**
		▪ **RHIA & RHIPA assumptions**

*Topics in **bold** discussed in today's slides*

Guiding Objectives - Methods & Assumptions

- Transparent
- Predictable and stable rates
- Protect funded status
- Equitable across generations
- Actuarially sound
- GASB compliant

Some of the objectives can conflict, particularly in periods with significant volatility in investment return or projected benefit levels. Overall system funding policies should seek an appropriate balance between conflicting objectives.

Governance Structure

- Benefits:
  - Plan design set by Oregon Legislature
  - Subject to judicial review
- Earnings:
  - Asset allocation set by OIC
  - Actual returns determined by market
- Contributions:
  - Funding, including methods & assumptions, set by PERS Board
  - Since contributions are the balancing item in the fundamental cost equation, PERS Board policies primarily affect the **timing** of contributions
  - Different actuarial methods and assumptions produce different projected future contribution patterns

The Fundamental Cost Equation

- Long-term program costs are the contributions, which are governed by the "fundamental cost equation":

BENEFITS =

CONTRIBUTIONS +

EARNINGS

Economic Assumptions (Other Than Investment Return) and Actuarial Methods

Economic Assumptions and Actuarial Methods

- At the June 2, 2023 meeting, the Board reviewed
  - Non-investment economic assumptions
  - Actuarial methods (including amortizations)
  - Investment return assumption
- Our recommendations regarding economic assumptions and actuarial methods are unchanged since the June meeting

Details of these recommendations are included in our June 2023 presentation

Non-Investment Economic Assumptions to Be Reviewed

	12/31/2021 Valuation Assumptions	12/31/2022 Valuation Proposed* Assumptions
Inflation	2.4%	2.4%
Real Wage Growth	1.0%	1.0% or lower
System Payroll Growth	3.4%	3.4% or lower
Administrative Expenses	$59 million	$64 million

No explicit assumption is made for investment-related expenses, which are accounted for implicitly in the analysis of the long-term investment return assumption.

Key Actuarial Methods

	12/31/2021 Valuation Methods	12/31/2022 Valuation Proposed* Methods
Cost Allocation Method	Entry Age Normal	No change
UAL (Shortfall) Amortization Method	Level percent of pay, layered fixed periods: *Tier One/Tier Two:* • Reamortized over 22 years as of 12/31/2019 per SB 1049 • 20 years as ongoing Board policy *OPSRP:* 16 years *RHIA/RHIPA:* 10 Years	No change
Rate Collar	UAL contribution rate for a rate pool is limited to a collared range based on prior biennium's rate. Limit is: • *Tier One/Tier Two:* 3% of payroll for large rate pools, 4% (with overrides) for Independent Employers • *OPSRP*: 1% of payroll Decreases to UAL rate are restricted if pool's funded status <90%	No change

Key Actuarial Methods (continued)

	12/31/2021 Valuation Methods	12/31/2022 Valuation Proposed Methods
Contribution Lag	No adjustment is made to UAL Rate, side account rate adjustments, or Pre-SLGRP rate adjustments for the lag time between the December 31 rate-setting valuation date and when those rates go into effect 18 months later.	No change to UAL Rate methodology. Add lag adjustment to side account and Pre-SLGRP amortizations.
Amortization of Side Accounts	Amortization calculated as level percent of projected pay through December 31 of scheduled end year. Majority of current side accounts amortize to December 31, 2027.	Continue to amortize to Dec. 31. Add lag adjustment; PERS to manage expiring amortizations
Amortization of Pre-SLGRP Amounts	Amortization calculated as level percent of projected pay through December 31 of scheduled end year. (Currently set at 18 years from date employer joins the SLGRP.) Pre-SLGRP pool liability and large majority of Transition Liabilities / Surpluses amortize to December 31, 2027.	Amortization to July 1 after the scheduled end date to align with rate change timing. Add lag adjustment

Long-Term Investment Return Assumption

Summary - Investment Return Assumption

- Capital market outlooks currently show higher expected returns than last assumption review
  - Results are heavily influenced by point-in-time measurements at prior year end
- While the median result from both OIC's outlook and Milliman's are above the current 6.90% long-term future investment return assumption, **we recommend leaving the assumption unchanged**
  - The lowering of the assumption was due to a decade-long trend in market conditions; we advise caution in reacting to a quite recent reversal of that trend
  - Using an assumption that is in the lower part of a reasonable range provides for some conservatism in the rate-setting process
  - Consistent with current practice for other large pension systems, which generally have not increased their return assumption in response to recent events

Long-Term Investment Return Assumption

- Uses of the investment return assumption
  - As a "discount rate" for establishing the:
    - Actuarial accrued liability, which is a net present value
    - Associated unfunded actuarial liability, also called the UAL or actuarial shortfall
  - Guaranteed crediting level for regular Tier One active member account balances
  - Annuitization rate for converting member account balances to lifetime money match monthly benefits

Reflecting expectations for both investment earnings and benefit levels for certain members, the assumption helps set a reasonable and appropriate budgeting glide path for projected employer contribution rates

Use of the Assumed Rate

B = C + E

BENEFITS =	**CONTRIBUTIONS** +	**EARNINGS**
present value of earned benefits	employer and member funds to pay pension benefits	future returns on invested funds
Design set by: Oregon Legislature	**Set by:** PERS Board	**Managed by:** Oregon Investment Council Oregon State Treasury

- “B” is predictable with a relatively high degree of certainty
- “E” is the unpredictable **actual** future investment return on PERS assets
- “C” is the balancing item --- it must provide to “B” what “E” fails to cover

- The **assumed rate** is the Board’s estimate of “E” to prudently set “C”
- The Board’s decision on “E” does **not** affect actual future earnings

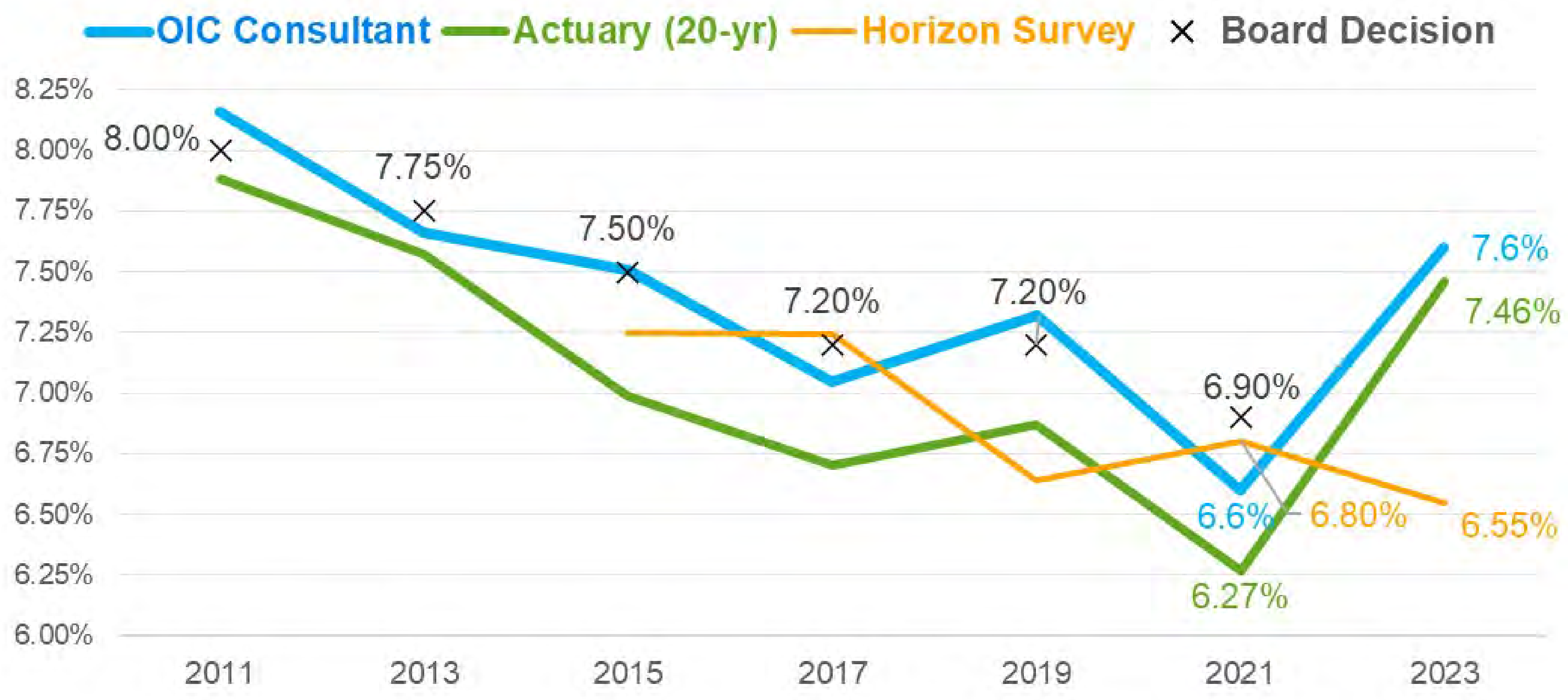
Investment Return 50th Percentile Outlooks

- We applied a standard mean/variance model to calculate 50th percentile return estimates based on capital market outlook assumptions from three sources
  - OIC assumption – reflects consensus among OST staff and consultants Meketa & Aon
  - Milliman
  - 2022 Horizon survey of 10-year capital market assumptions (survey of 40 advisors)
    - The Horizon survey was published in August 2022, based on outlooks from the first half of 2022
- Estimates do not reflect any possible "alpha" due to selected managers potentially outperforming market benchmarks over the long term, net of fees
- Today's speakers are not credentialed investment advisors
  - We are presenting Milliman capital market outlook model results based on assumptions developed by Milliman's credentialed investment professionals

Details on Milliman and Horizon outlook assumptions are in the Appendix

Investment Return 50th Percentile Outlooks

Geometric Returns from Outlook Models in Current and Prior Six Reviews



Horizon survey was published in August 2022, based on outlooks from the first half of 2022

Historical Actual Returns vs. Assumed Returns

- Comparison of trailing average historical returns through end of 2022:
  - Actual – from *PERS By the Numbers*
  - Assumed – based on PERS' actuarial assumption for each year

Period Ending December 2022	Actual Return	Assumed Return
Trailing 25 years	7.7%	7.7%
Trailing 20 years	8.6%	7.7%
Trailing 15 years	6.5%	7.5%
Trailing 10 years	8.4%	7.3%

Returns are geometric annualized average returns over the periods indicated
The specific starting and ending points matter (example: trailing 15 years starts with 2008 return)

Investment Return 50th Percentile Outlooks

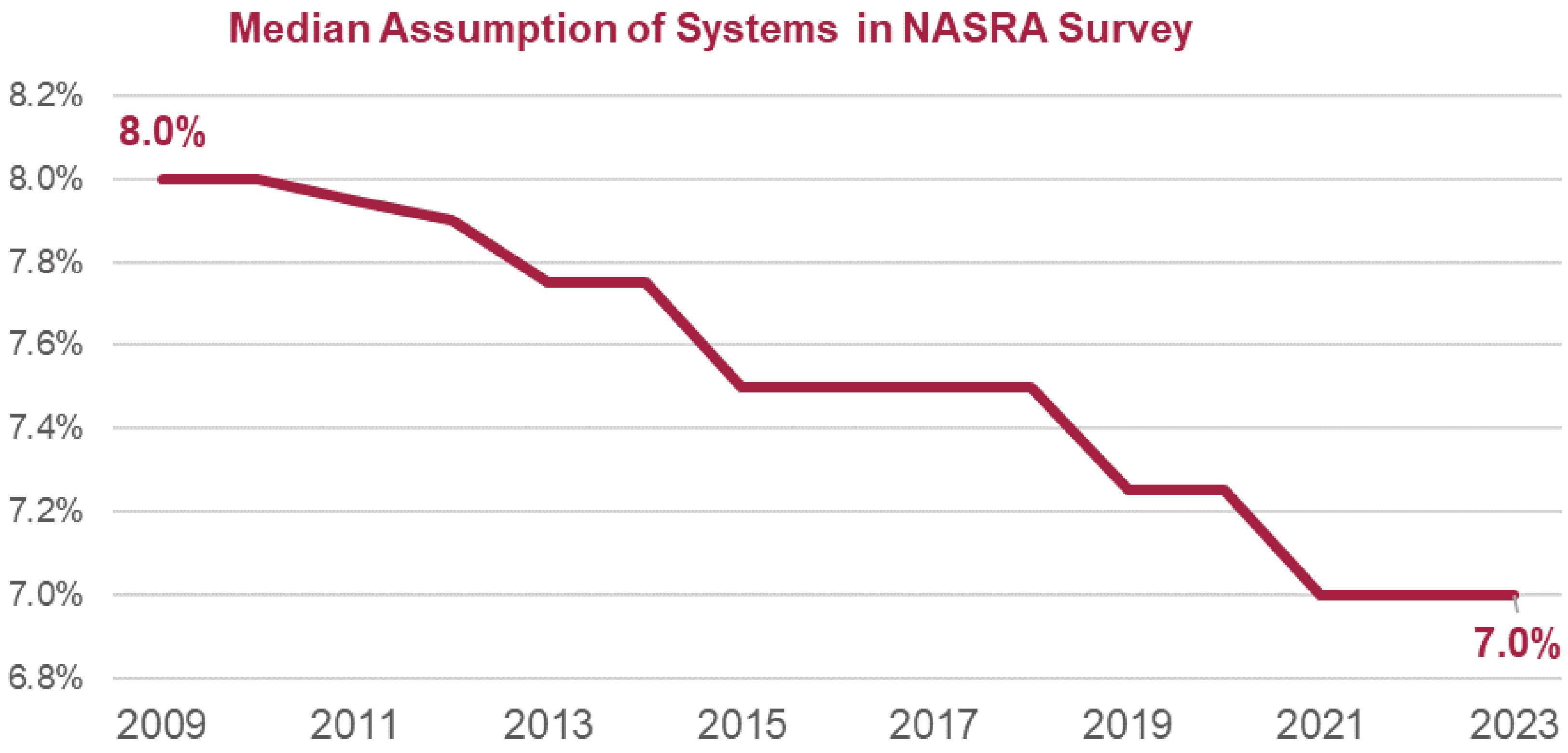
- Estimates are shown based on the OIC's long-term asset allocation

	OIC Consultant	Milliman 10-Year	Milliman 20-Year	Horizon Survey
Median Annualized Return	**7.6%**	**7.11%**	**7.46%**	**6.55%**
Assumed Inflation	2.5%	2.40%	2.35%	2.46%
Timeframe Modeled	20 years	10 years	20 years	10 years

The median returns shown above are geometric annualized average returns over the timeframes indicated above for each provided set of capital market assumptions

Comparison to Peer Systems

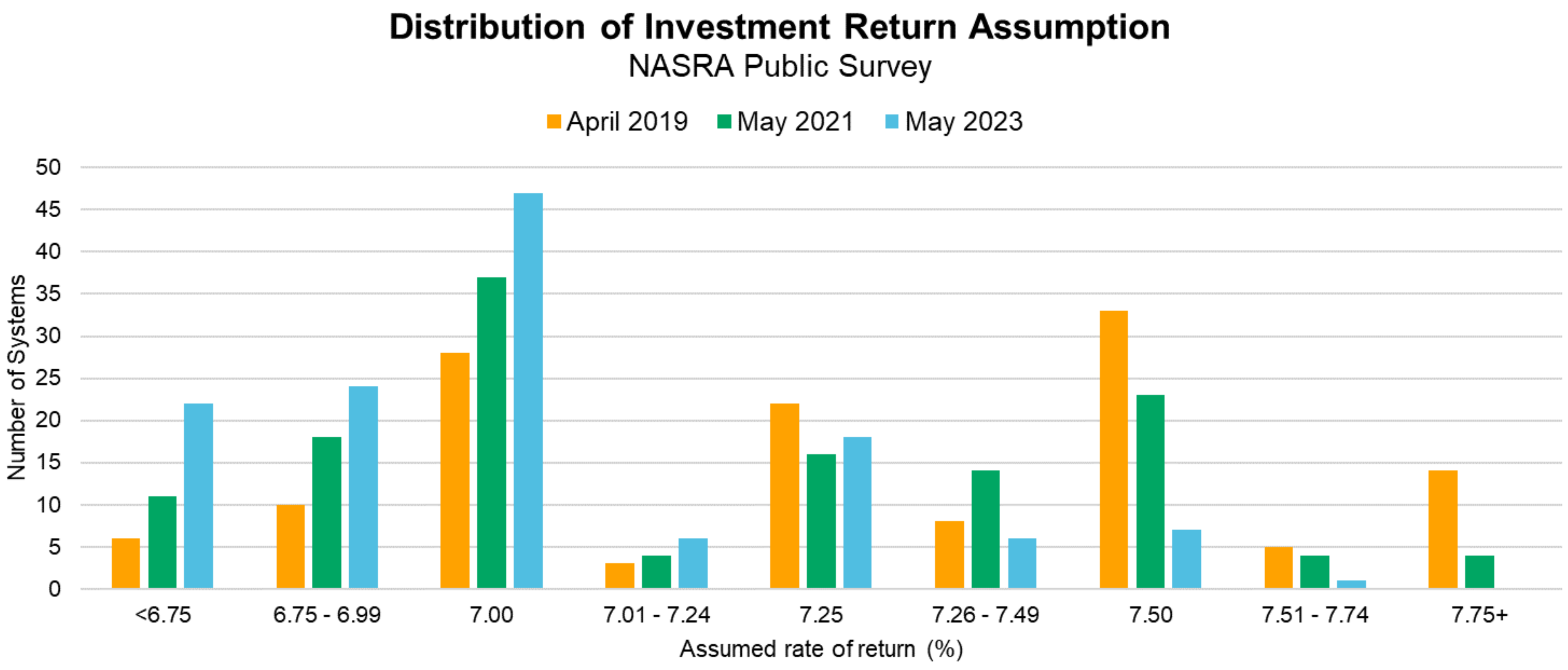
- There has been a downward trend in public plan return assumptions, with a current median assumption for large public systems of 7.00%
  - While capital market expectations have increased recently, so far large systems have not responded with increased return assumptions



Source: NASRA (May 2023)

Comparison to Peer Systems

- The distribution of about 130 systems tracked by the NASRA Public Fund Survey is shown below
- Four years ago, the most common assumption was 7.50%; now the most common assumption is 7.00% and over 70% of all plans have an assumption of 7.00% or lower



Source: NASRA (May 2023)

Effects of Changing the Assumed Return

- A higher investment return assumption would produce lower calculated liabilities and uncollared contribution rates as of the actuarial valuation date, while a lower investment return assumption would have the opposite effect
  - The effect on final collared contribution rates would be determined in accordance with the Board's policy
- Liabilities are net present values, as of the valuation date, of a benefit payment projection that stretches far into the future
  - Changing the assumption modifies the projected balance of the fundamental cost equation between future investment earnings and future contributions
    - The actual balance will depend on actual investment earnings, not on the assumed return adopted by the PERS Board
- For PERS, such an assumption change would also change benefits for future retirements calculated under Money Match

Considerations in Setting the Return Assumption

- Due to recent changes in financial markets, capital market outlooks currently show higher expected returns than last assumption review
  - Results based on a different date (such as the Horizon Survey published in August 2022) may look significantly different due to the speed with which markets changed
- While median forward-looking expectations are above the current 6.9% investment return assumption, the Board should consider leaving the assumption unchanged
  - Lowering the assumed rate for evolving expectations took a decade; it remains to be seen if the December 31, 2022 market conditions are temporary or enduring
  - If 2023 returns are strong, expectations may be lower at the rate-setting actuarial valuation date of December 31, 2023
  - Actuarial Standards of Practice allow assumptions to reflect a margin for adverse deviation, if desired

Overview of Demographic Assumptions

Demographic Assumptions

- We statistically analyzed member census data provided by PERS
  - Six years of experience data analyzed for most demographic assumptions
  - Ten years of experience data analyzed for individual member salary increase assumptions
- Recommended assumptions were developed based on our statistical analysis
- Full details of the analysis are in our formal experience study report
- We reviewed the effect of 2020 and later experience on our analysis, while taking into account that the pandemic and subsequent events may mean recent experience is not the optimal basis for setting certain forward-looking, long-term assumptions
  - In general, we extended the usual experience observation period by two years so that 2020-2022 experience data would have a somewhat lesser relative weight in the study
  - For mortality, we ultimately included 2020-2022 experience in our analysis, but took the approach of making minimal adjustments to our assumptions based on higher recent death rates
  - For school district salary increase, we adjusted for 2020 experience that was noticeably lower than other years and was affected by pandemic-related furloughs

Summary of Demographic Assumptions

- Mortality assumptions mostly unchanged and continue to use base mortality tables specific to current and former governmental employees in public sector pension plans
  - Also incorporate two additional years of data in assumption for projected future mortality improvement
- Adjust likelihood of retirement assumption at some ages where recent experience differed from current assumption
- Increase merit component of individual member salary assumption for all three groups, including additional increases for the next two years
- Adjust pre-retirement likelihood of termination assumptions for two groups
- Adjust disability incidence assumptions
- Updates to assumed final average salary adjustments for factors such as unused vacation and sick leave for most groups for Tier One/Tier Two members eligible under those provisions
- Eliminate Tier One/Tier Two partial lump sum assumption (utilization <2% and decreasing)
- Adjustments to post-retirement medical program assumptions
  - Participation levels (RHIA & RHIPA)
  - Healthcare inflation assumption for RHIPA program

Mortality Assumption

- For each group, the mortality assumption consists of two parts:
  - A ***base table*** – for a given age, lists a probability of death at that age
  - A ***projection scale*** – modifies base table entries to reflect anticipated continued mortality improvement over time
    - Reflects the long-term historical trend that a new retiree today will have a longer life expectancy than a new retiree 25 years ago… and that a new retiree 25 years from now is reasonably anticipated to have a longer life expectancy than a new retiree today
- We recommend continuing to use "Pub-2010" family of base mortality tables from the Society of Actuaries (SOA) Public Plans Mortality Study published in January 2019
- While actual mortality in the study period has been above the current assumption, this is likely driven by recent post-pandemic experience and may not be predictive of long-term experience
  - As a result, we recommend leaving the base mortality table unchanged for almost all groups

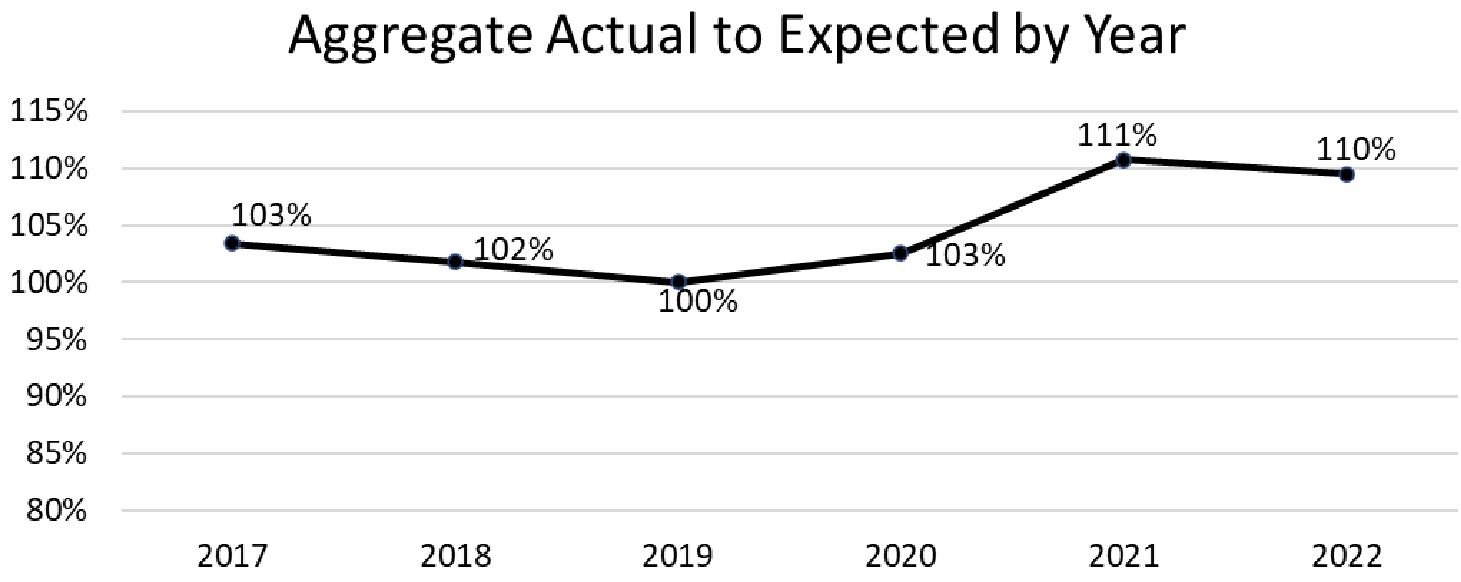
Mortality Assumption

- ORS 238.607: adopted actuarial equivalency factors *must use the best actuarial information on mortality available at the time*
  - We separately reviewed police and fire mortality per ORS 238.608
- We matched PERS experience to the SOA's Public Plans ("Pub-2010") base tables
  - PERS was one of the systems that contributed data to the study; in general, the tables fit experience well
  - Calibrated to PERS experience as needed with "age set-backs" or other adjustments to standard table
- For mortality improvement projection scale, maintained approach adopted in prior experience study of using a projection scale based on 60-year average annual improvement from Social Security mortality experience
  - Updated to reflect information available through 2019
  - This update leads to slightly more projected mortality improvement (longer life expectancy) at most ages

Technical details on our recommendation and more information on the mortality assumption are in our formal Experience Study report

Mortality Assumption

- Graphs show benefits-weighted ratio of actual compared to expected deaths for healthy annuitants in aggregate across all assumption groups
  - Typically want to target an “A/E ratio” (actual deaths to expected deaths) of about 100%
  - Deviations from that target are driven by recent experience that is likely pandemic-influenced
- Choosing not to adjust the assumption based on recent increased mortality is conservative and reduces the potential for liability losses if experience reverts to pre-pandemic levels



Mortality Assumption

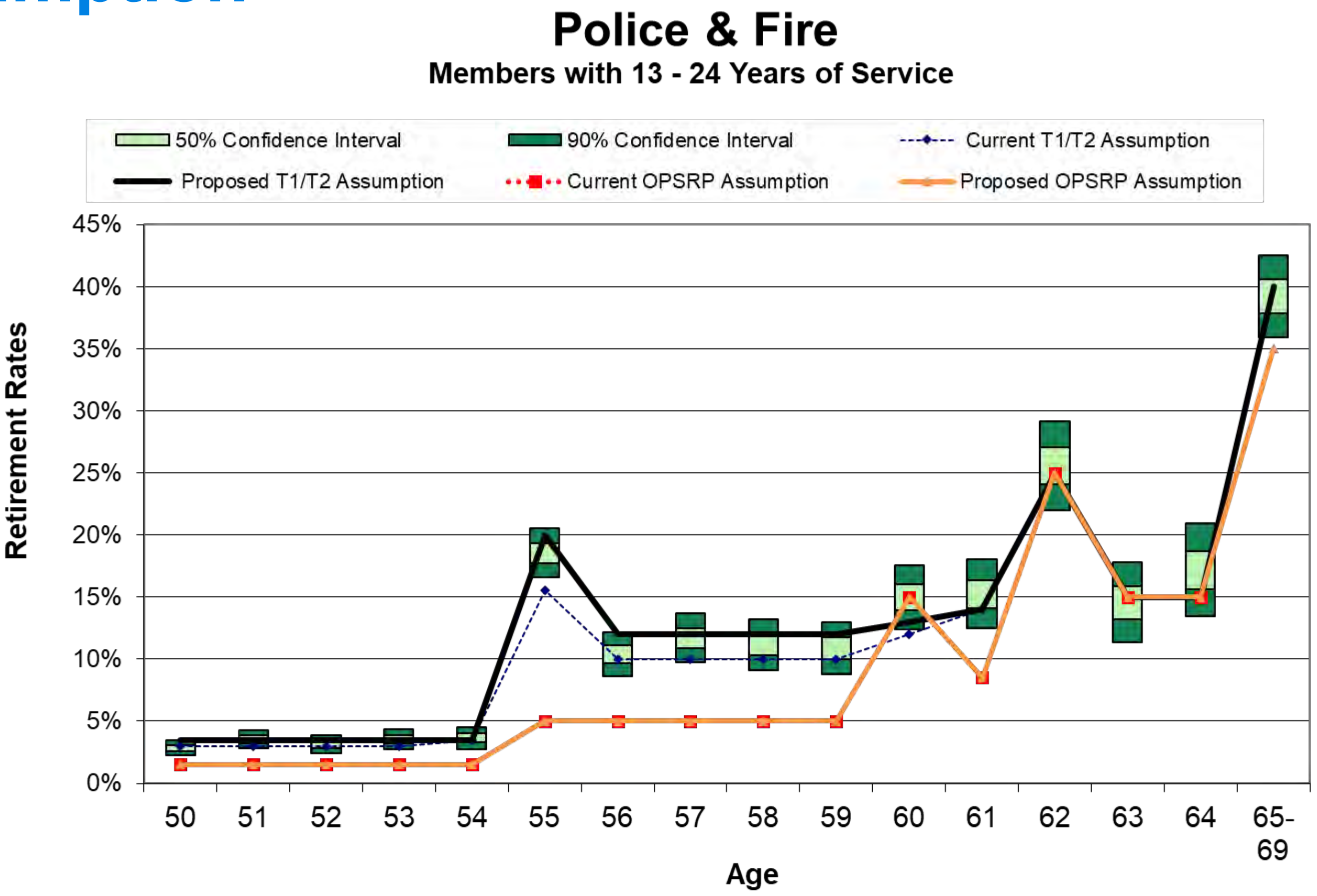
- Illustrative example of assumptions for non-disabled current and future retirees:

Future Life Expectancy (in years)	Retires at Age 60 in	
	2023	2043
School District Male	27.8	29.1
General Service Male	27.4	28.9
Police & Fire Male	26.1	27.6
School District Female	30.3	31.5
General Service Female	29.0	30.3
Police & Fire Female	29.0	30.4

- The update to mortality improvement projection scale did not materially alter these values
- The table above has three assumed preconditions, all of which serve to increase the life expectancy:
  - The individual is assumed to have already survived to age 60
  - The individual is assumed to have served in PERS-covered employment
  - The individual is assumed to not be disabled as of age 60

Rate of Retirement Assumption

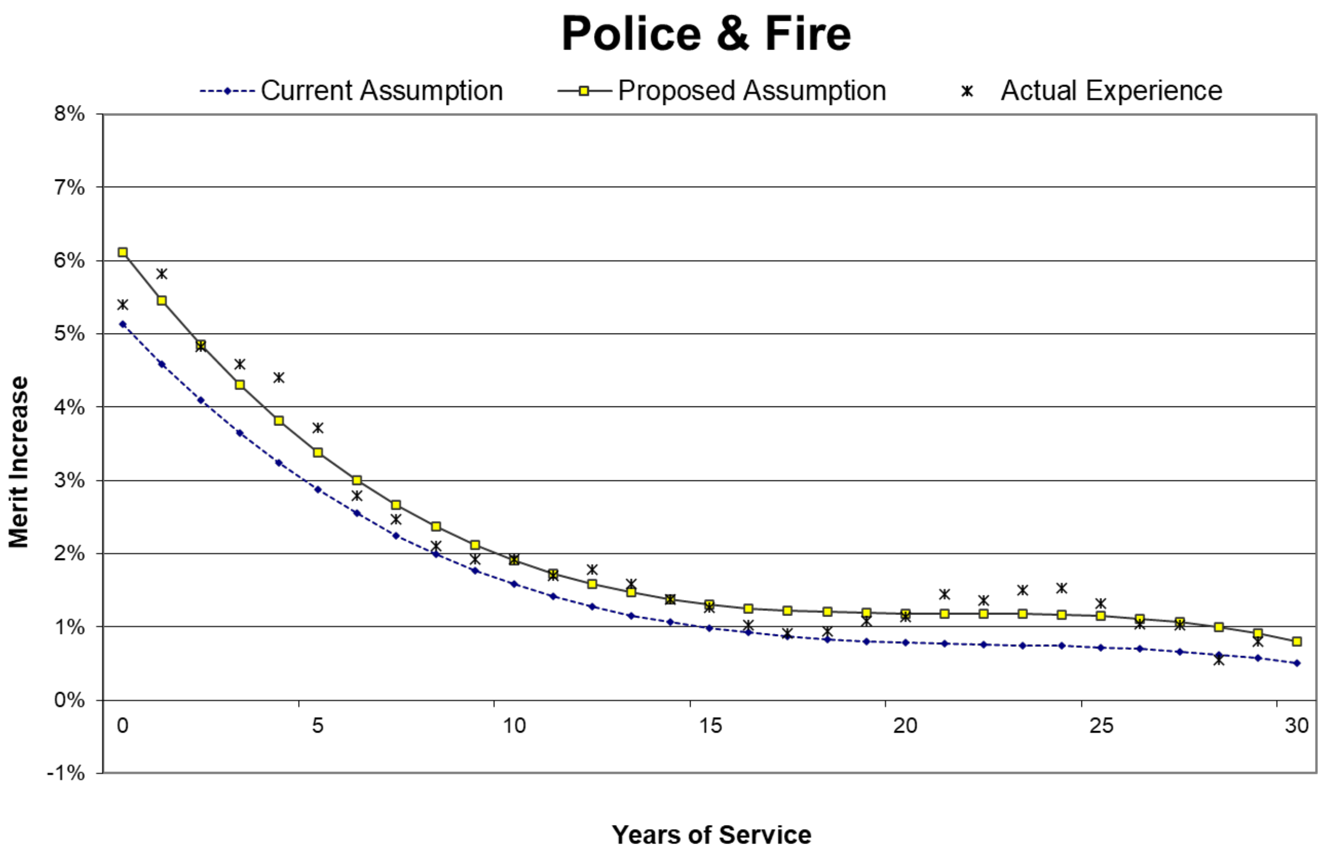
- The likelihood that an eligible member retires at a given age
- Structure:
  - School District
  - Other General Service
  - Police & Fire
  - Divided into 3 service bands
  - Tier One/Tier Two vs. OPSRP
- Modifications made to assumptions at certain ages to more closely align with recent experience
  - Increased retirement rates for certain School District and Police & Fire age and service groups



Example shown above. Recommendations for other groups shown in detailed Experience Study report.

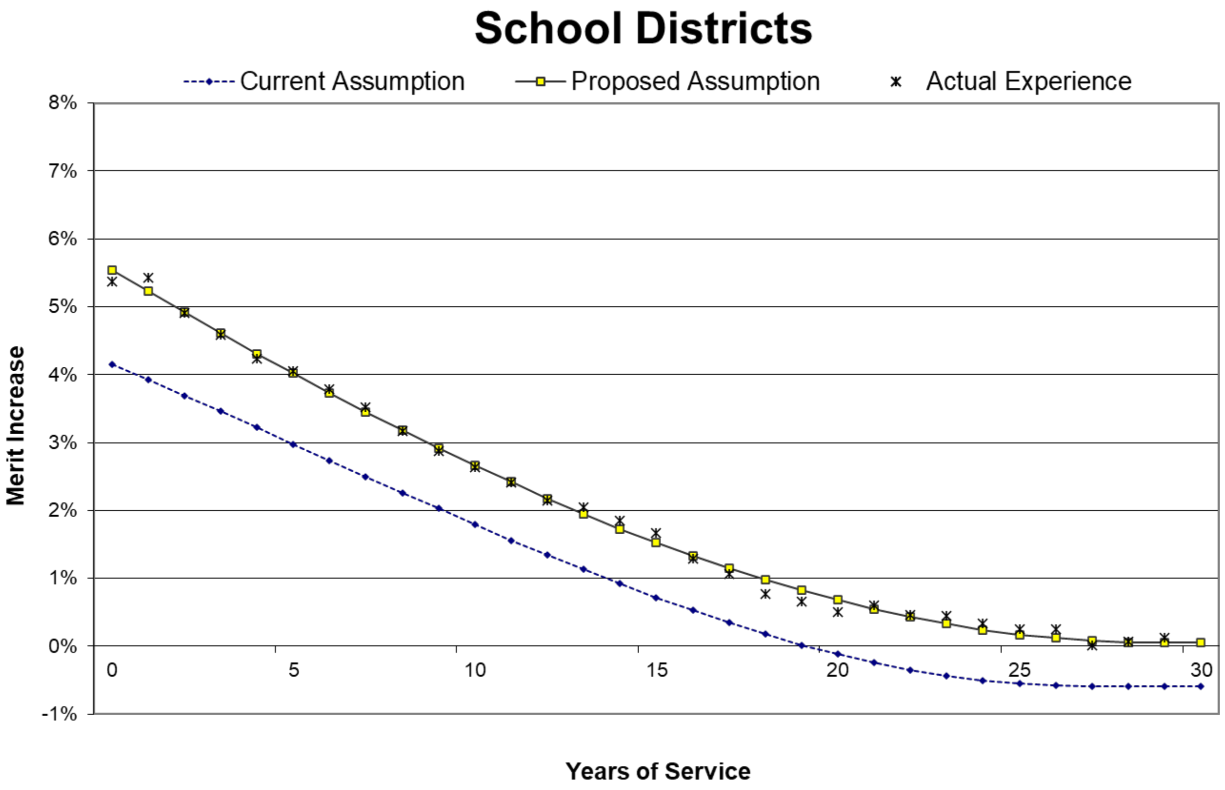
Individual Member Merit/Longevity Salary Increase Assumption

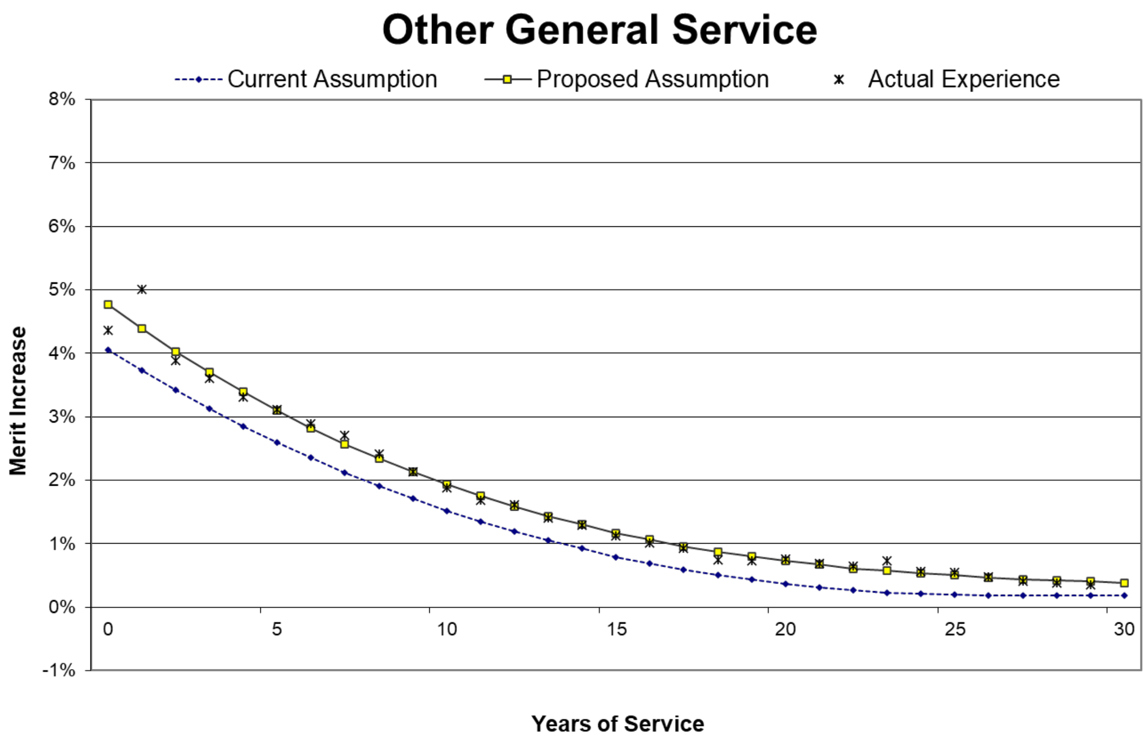
- Reflects merit/longevity increases above general wage growth and inflation
  - Reviewed ten years of individual pay increases, netted out period's average wage growth of 3.85%
- Structure:
  - School District
  - Other General Service
  - Police & Fire
- Actual recent experience was higher than the current assumption for each group
- In calculating actual experience, we adjusted or removed experience years with significant one-off changes
  - Salary increases associated with elimination of pick-up
  - 2020 school district furloughs



Individual Member Merit/Longevity Salary Increase Assumption

- School District and Other General Service had higher increases than assumed





- Assumptions updated to fully reflect recent observed experience

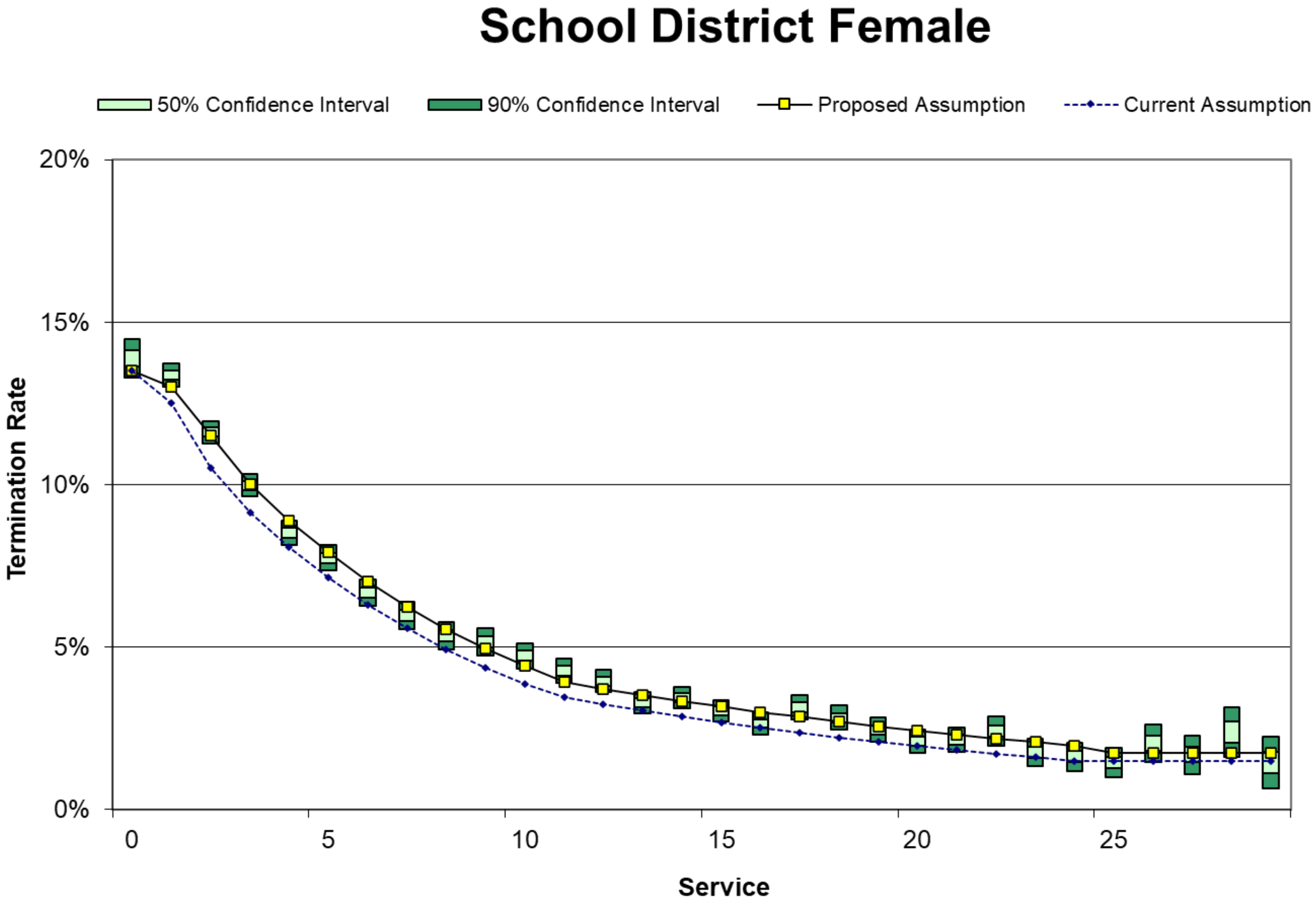
Milliman

Individual Member Merit/Longevity Salary Increase Assumption
Higher Two-Year "Select" Assumption

- The increased long-term merit/longevity assumptions shown on the prior slide result from our normal-course process for review and updates
- In addition, recent high inflation and job market pressures are anticipated to lead to unusually high salary increases for at least a portion of PERS actives in the near term
  - For example, agreements recently announced for State workers in AFSCME and SEIU provide for additional across-the-board increases of about 6.5% in each of the next two years
- Cognizant of these agreements and the potential for other groups to receive something similar, we recommend the Board adopt a special "select assumption" of an additional 2% merit/longevity increase to apply for two years
  - Reduces the potential for valuation liability losses as new agreements come into effect

Pre-Retirement Employment Termination Assumption

- The likelihood that a member leaves employment at a given service level prior to retirement eligibility for reasons other than death or disability
- We recommend adjusting the assumption for two of the five groups
  - Reflects greater rates of observed termination that the current assumption



Example shown above. Recommendations for other groups shown in detailed Experience Study report.

Final Average Salary Adjustments

- In the valuation, we apply assumptions estimating the percentage increase at time of retirement in final average salary for Tier One/Tier Two members attributable to:
  - Unused sick leave
  - Lump sum distribution of vacation pay (only affects Tier One)
- Only relevant when benefits are calculated using Full Formula or Formula Plus Annuity
- As remaining Tier One/Tier Two actives become a smaller and longer-service group, experience has generally increased (though the assumption applies to a smaller group)
- We recommend some adjustments as shown below to more closely track recent experience:

Unused Sick Leave	Current Assumption	Proposed Assumption
State GS Male	8.25%	**8.75%**
State GS Female	5.00%	**5.25%**
School District Male	9.50%	**9.75%**
School District Female	6.50%	6.50%
Local GS Male	7.25%	**6.50%**
Local GS Female	4.50%	4.50%
State Police & Fire	4.25%	**4.75%**
Local Police & Fire	7.50%	**7.25%**
Inactive Members	5.00%	5.00%

Tier One Vacation Cash Out	Current Assumption	Proposed Assumption
State GS	2.50%	2.50%
School District	0.25%	0.25%
Local GS	3.50%	3.50%
State Police & Fire	2.75%	**3.00%**
Local Police & Fire	4.75%	**4.25%**

Member Redirect Offset

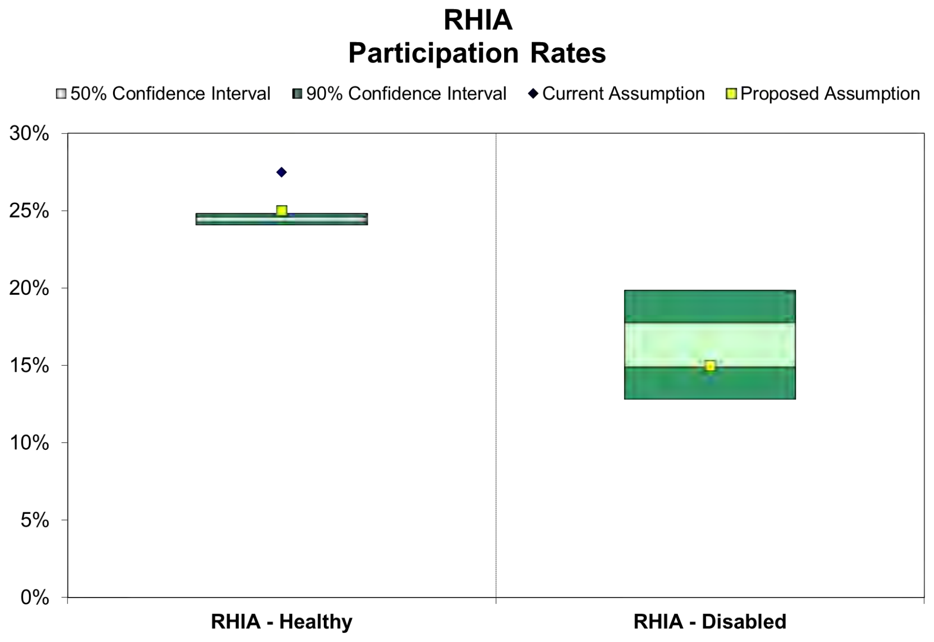
- Senate Bill 1049 redirected a portion of the 6% of pay member contributions to Employee Pension Stability Accounts (EPSAs) that help fund the Tier One/Tier Two and OPSRP programs
  - 2.50% of pay for Tier One/Tier Two and 0.75% of pay for OPSRP
  - Originally, redirection only occurred for members with salary greater than $2,500 per month (indexed)
    - House Bill 2906 modified this level to $3,333 per month effective in 2022
  - Applies when funded status (including side accounts) is less than 90% in the rate-setting valuation
- The 2023-2025 employer contribution rates adopted by the Board in September 2022 were based on SB 1049 and reflect projected system-average member redirect offset contributions of:
  - 2.40% of Tier One/Tier Two payroll
  - 0.65% of OPSRP payroll
- The 0.10% of payroll difference between the actual offset for affected members and the assumed system-wide effect of the redirect reflects the estimated effect of SB 1049's indexed monthly pay threshold

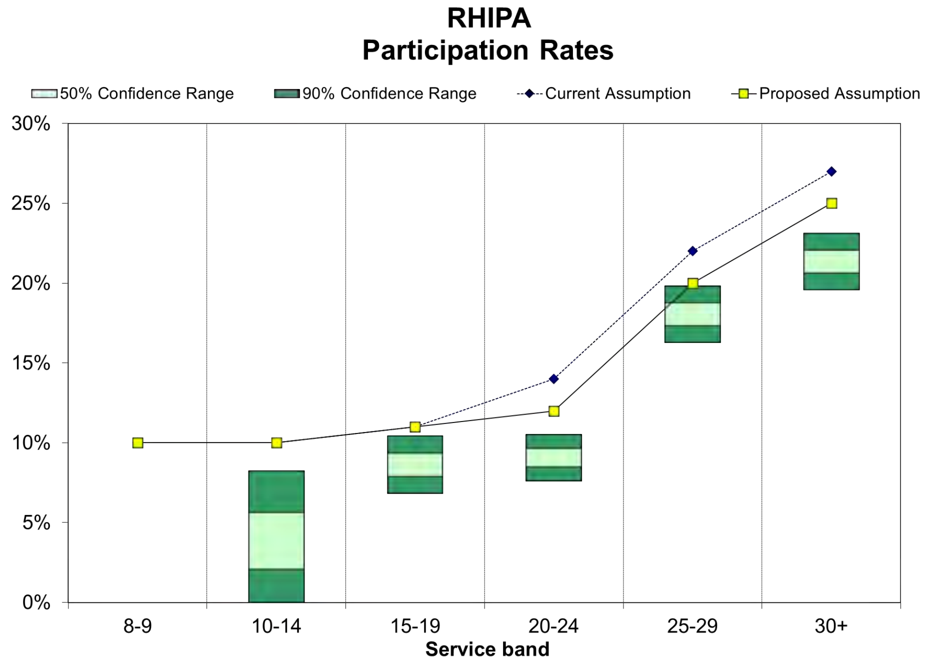
Member Redirect Offset

- For the 2025-2027 biennium, the member redirect is expected to continue to apply (the relevant funded status is unlikely to exceed 90% by 12/31/2023)
- Based on the current statutory pay threshold and the member salary distribution, for calculation of 2025-2027 employer contribution rates we recommend leaving the assumption unchanged, with projected system-average member redirect offsets of:
  - 2.40% of Tier One/Tier Two payroll
  - 0.65% of OPSRP payroll

RHIA and RHIPA Assumptions

- Updates to retiree healthcare participation assumptions based on observed experience:
  - Healthy RHIA: Lower participation rate from 27.5% to 25.0%
  - Disabled RHIA: no change to participation rate (currently 15.0%)
  - RHIPA: Lower rates in longer-service categories
- Health care cost trend assumption applied to RHIPA full subsidy amount was also updated
  - Based on analysis by Milliman health actuaries





Estimated Effect of Assumption Changes

Preliminary Effect of Changes – Accrued Liability

- Estimated effect on combined Tier One, Tier Two, and OPSRP liabilities based on preliminary valuation work

12/31/2022 Accrued Liability	Assumed Return 6.8%	Assumed Return 6.9%	Assumed Return 7.0%
Current assumptions		$101.7 B	
Salary		$1.1 B	
All other demographic assumptions		$0.1 B	
Revised assumptions (before assumed return)	$102.9 B	$102.9 B	$102.9 B
Assumed return	$1.1B	$0.0 B	($1.1) B
Revised assumptions	$104.1 B	$102.9 B	$101.8 B

Numbers shown may not add due to rounding

Preliminary Effect of Changes – Uncollared 2023-2025 Rates

- Estimated impact on <u>uncollared</u> system-average advisory pension rates for 2025-2027 based on preliminary valuation work
  - Results do not reflect any adjustment for already known 2023 asset returns

	Assumed Return 6.8%		Assumed Return 6.9%		Assumed Return 7.0%	
	UAL	Normal Cost	UAL	Normal Cost	UAL	Normal Cost
Salary	0.6%	0.9%	0.6%	0.9%	0.6%	0.9%
Other assumptions	0.0%	(0.1%)	0.0%	(0.1%)	0.0%	(0.1%)
Assumed return	<u>0.5%</u>	<u>0.3%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>(0.5%)</u>	<u>(0.3%)</u>
Total	**1.1%**	**1.1%**	**0.6%**	**0.8%**	**0.1%**	**0.5%**
Combined Total	**2.2%**		**1.4%**		**0.6%**	

Changes shown are stated as a percent of payroll, reflect a 3.40% payroll growth assumption, and exclude changes for the RHIA & RHIPA programs. Numbers may not add due to rounding.

Agenda Items – Remaining 2023 Meetings

- Needed action before completion of actuarial valuations:
  - Adoption of assumptions and methods for use in the following valuations:
    - December 31, 2022 “advisory” valuation that estimates 2025-2027 rates
    - December 31, 2023 valuation that calculates recommended 2025-2027 rates
- September meeting:
  - Presentation of system-level December 31, 2022 actuarial valuation results
  - Adoption of actuarial equivalency factors effective January 1, 2024
- December meeting:
  - Acceptance of the December 31, 2023 actuarial valuation report and employer-specific advisory 2025-2025 contribution rates
  - Financial modeling over the next twenty years under a variety of possible future scenarios for actual investment return

Milliman

Appendix

Certification

This presentation discusses actuarial methods and assumptions for use in the valuation of the Oregon Public Employees Retirement System ("PERS" or "the System"). For the most recent complete actuarial valuation results, including cautions regarding the limitations of use of valuation calculations, please refer to our formal Actuarial Valuation Report as of December 31, 2021 ("the Valuation Report") published on September 19, 2022. The Valuation Report, including all supporting information regarding data, assumptions, methods, and provisions, is incorporated by reference into this presentation. The statements of reliance and limitations on the use of this material is reflected in the actuarial report and still apply to this presentation. The Valuation Report, along with prior presentations to the PERS Board, including the December 2022 and April 2023 presentations to the PERS Board should be referenced for additional detail on the data, assumptions, methods, and plan provisions underlying this presentation.

In preparing this presentation, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff as well as capital market expectations provided by Meketa, capital market information published by Horizon Actuarial Services, and information presented to the Oregon Investment Council. 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 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.

In assessing the Milliman capital market expectations presented in this report, per Actuarial Standards of Practice we disclose reliance upon a model developed by Milliman colleagues who are credentialed investment professionals with expertise in capital outlook modeling.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which in our professional opinion are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System. The valuation results were developed using models intended for valuations that use standard actuarial techniques. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice. We have incorporated other sources of economic data in assessing the reasonableness of the assumptions. Reliance on other experts is reflected in Milliman's capital market assumptions and in Milliman's expected return model, both of which are developed by credentialed investment consultants. We have also considered the System's investment policy, capital market assumptions, and the expected return analysis provided by the System's investment consultant in our assessment of the investment return assumption.

Certification

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. Our annual financial modeling presentation to the PERS Board should be referenced for additional analysis of the potential variation in future measurements. The PERS Board has the final decision regarding the assumptions used in the actuarial valuation.

The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in the appendix of the Valuation 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 retirement 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 which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct* and *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Appendix
Data

Except where noted, our analysis of demographic assumptions was based on data for the experience period from January 1, 2017 to December 31, 2022 as provided by the Oregon Public Employees Retirement System (PERS). PERS is solely responsible for the validity, accuracy and comprehensiveness of this information; the results of our analysis can be expected to differ and may need to be revised if the underlying data supplied is incomplete or inaccurate.

Member data was summarized according to the actual and potential member decrements during each year. Actual and potential decrements were grouped according to category of employment, sex, age, and/or service depending on the demographic assumption.

Where possible, we attempted to identify decrements that were spread across two calendar years (for example, if a member retired in one year, but didn't commence benefits until January 1 of the following year) so that we could reflect these decrements as individual events.

In order to capture experience across a broader range of budget, collective bargaining, and economic cycles, our analysis of salary increases covered observed salary experience from 2012 through 2022 as provided by PERS.

Our analysis focused on observed salary levels during consecutive calendar years for members who remained in active employment across both years, so that the observed change in salary would not be influenced by the reduced number of months worked during a year in which the member decrements. Similarly, we focused on experience above the 5th percentile and below the 95th percentile of observed salary increases in order to avoid the potential distorting effect of including extreme salary changes that likely resulted from unusual events.

Appendix
Capital Market Outlook

- Capital market outlooks change over time in response to changing market conditions
  - Milliman outlook updated every six months
  - Recent changes and key factors shown below for Milliman model of PERS asset allocation
  - Outlooks shown reflect Milliman's real return outlook at each date combined with a 2.50% inflation assumption as of 12/31/18 and a 2.40% inflation assumption as of 12/31/20

Milliman 20-year outlook	12/31/18	12/31/20	12/31/22
Median Annualized Return	**6.87%**	**6.27%**	**7.46%**
Global Equity	6.99%	5.85%	7.07%
Private Equity	8.33%	7.71%	8.83%
US Core Fixed Income	4.07%	2.73%	4.50%
Real Estate	5.55%	5.66%	5.83%

Asset category returns shown above are 20-year annualized geometric mean returns and reflect reduction for assumed investment management expenses

Appendix
Actuarial Basis

Capital Market Assumptions - Milliman

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 input provided by Meketa (OIC's primary consultant) and reflects proposed changes to the OIC's target allocation for the Oregon PERS fund adopted at the January 25, 2023 OIC meeting.

Reflects Milliman's capital market assumptions as of December 31, 2022.

	Annual Arithmetic Mean	20-Year Annualized Geometric Mean	Annual Standard Deviation	Policy Allocation
Global Equity	8.57%	7.07%	17.99%	27.500%
Private Equity	12.89%	8.83%	30.00%	25.500%
Real Estate	6.90%	5.83%	15.13%	12.250%
US Core Fixed Income	4.59%	4.50%	4.22%	25.000%
Hedge Fund – Macro	5.44%	4.83%	7.49%	5.625%
Hedge Fund – Equity Hedge	7.39%	6.48%	12.04%	0.625%
Hedge Fund – Multistrategy	6.81%	6.27%	9.04%	1.250%
Infrastructure	7.88%	6.51%	17.11%	1.500%
Master Limited Partnerships	9.41%	6.02%	27.04%	0.750%
US Inflation (CPI-U)	2.35%	2.35%	1.41%	**N/A**
Fund Total (reflecting asset class correlations)	**8.26%**	**7.50%***	**13.30%**	**100.00%**

* The model's 20-year annualized geometric median is **7.46%**.

Appendix
Actuarial Basis

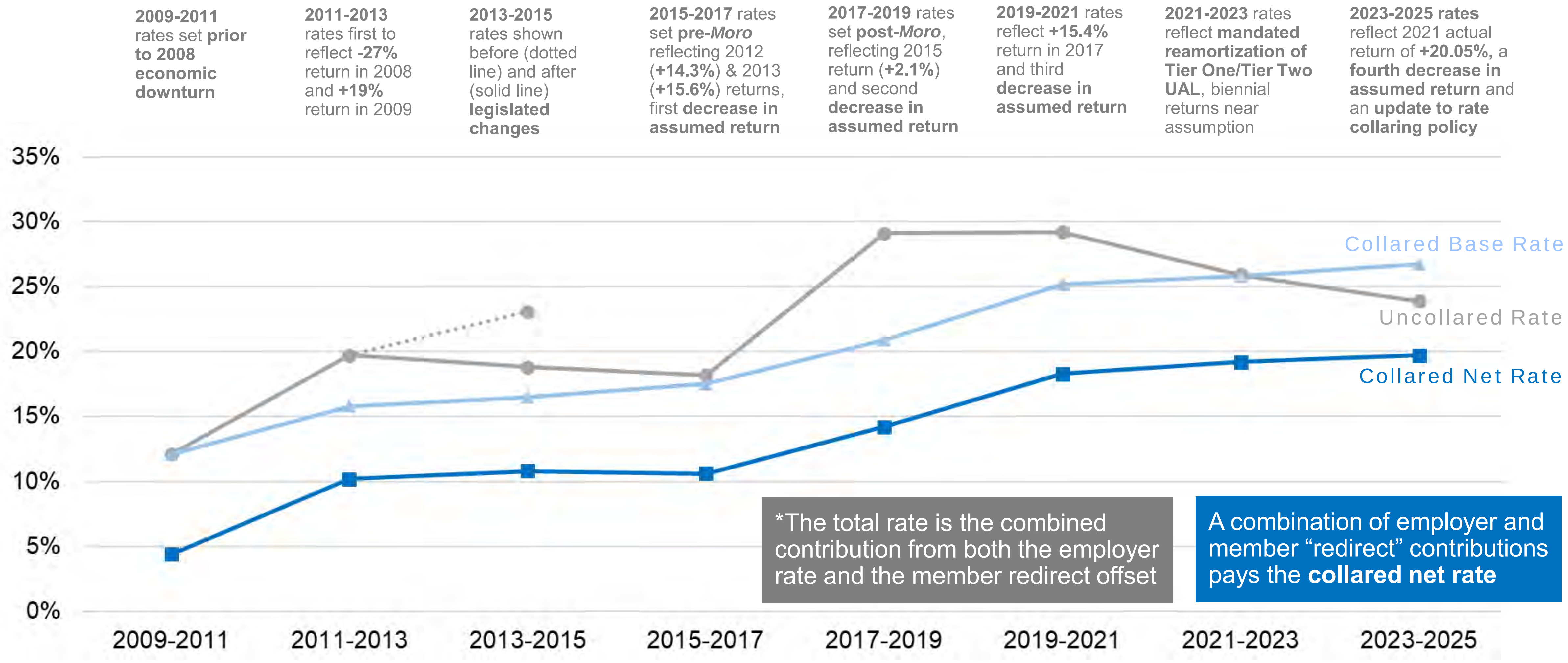
Capital Market Assumptions – Horizon Survey

For assessing the expected portfolio return under an additional set of capital market assumptions, we applied the assumptions from the 2022 Survey of Capital Market Assumptions published by Horizon Actuarial Services, LLC. According to the survey report, the 10-year return assumptions shown below represent an average of the expectations for 40 investment advisors responding to the survey.

	10-Year Annualized Geometric Mean	Annual Standard Deviation	Policy Allocation
US Equity – Large Cap	5.91%	16.33%	**12.375%**
Non-US Equity – Developed	6.54%	18.09%	**12.375%**
Non-US Equity – Emerging	7.30%	23.92%	**2.75%**
US Corporate Bonds – Core	2.63%	5.36%	**25.00%**
Real Estate	5.37%	17.00%	**12.25%**
Hedge Funds	4.81%	7.99%	**7.50%**
Infrastructure	6.39%	16.63%	**2.25%**
Private Equity	9.22%	22.13%	**25.50%**
Inflation	2.46%		**N/A**
Fund Total (reflecting asset class correlations)	**6.62%***	**11.96%**	**100.00%**

* 10-year annualized geometric median is **6.55%**.

System-Average Weighted Total* Pension-Only Rates



Assumed Return:	8.00%	8.00%	8.00%	7.75%	7.50%	7.20%	7.20%	6.90%

Milliman

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.

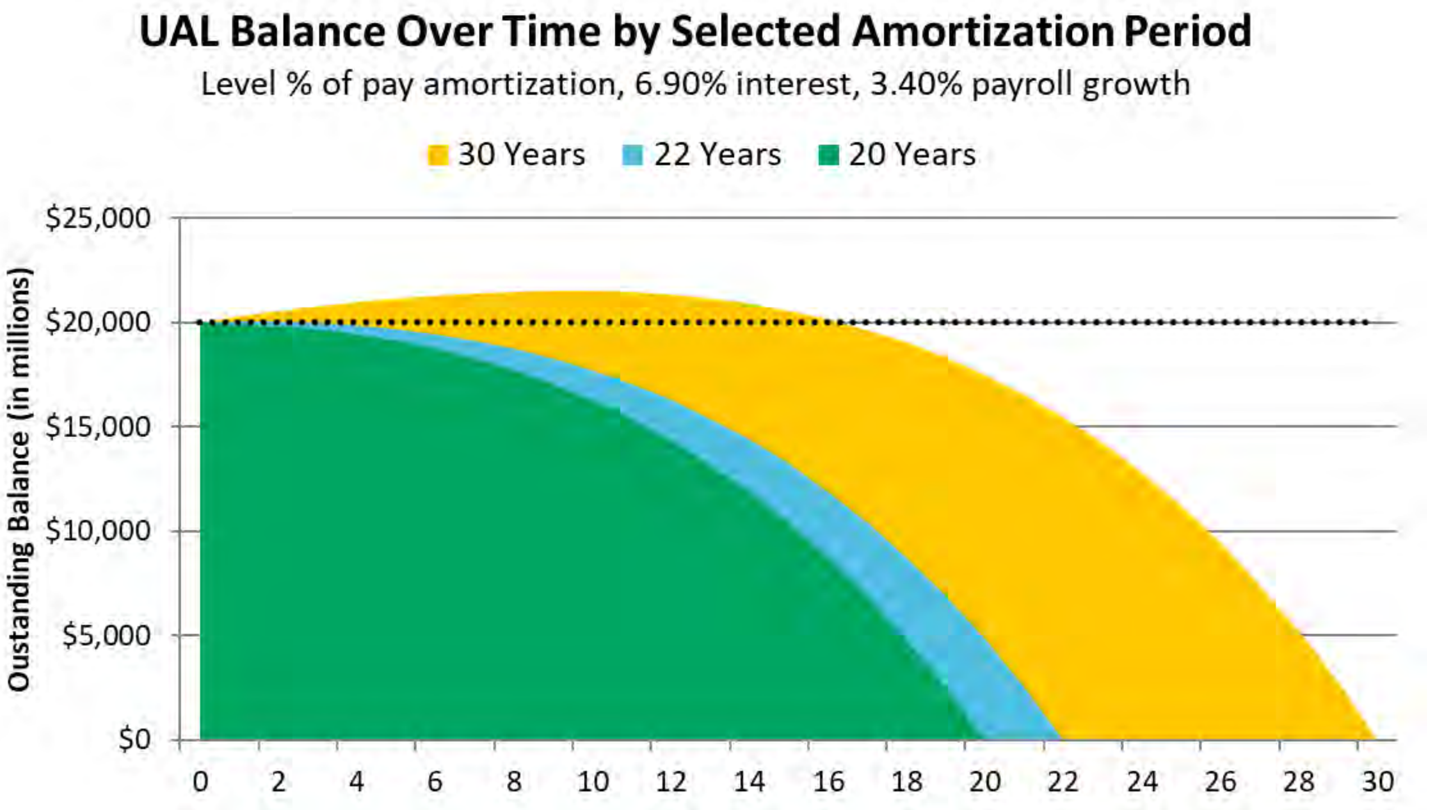
Cost Allocation Method

- Rates are calculated to pre-fund retirement benefits during a member's working career if all assumptions are met
- The present-day value of projected future benefits allocated to a particular working year is the Normal Cost
- The present-day value of projected future benefits allocated to prior years is the Accrued Liability
- The division between past, current & future service is done through use of an actuarial cost allocation method
- PERS currently uses GASB-compliant cost allocation method of Entry Age Normal (EAN)
  - We recommend no change to the cost allocation method

Shortfall Amortization Periods

- A key part of contribution rate calculations is amortization of Tier One / Tier Two shortfalls over twenty years as a level percentage of payroll
  - As required by Senate Bill 1049, Tier One/Tier Two UAL as of December 31, 2019 was re-amortized over 22 years
  - Prior to that, Board policy has been to amortize gains or losses in separate layers over 20 years from the rate-setting valuations in which the gain or loss was first recognized
- Twenty years avoids significant negative amortization, where unamortized shortfall materially increases in the initial “pay down” years even if actual investment returns match assumptions and contributions are made
  - The following slide illustrates amortization as a level percentage of projected payroll of a $20.0 billion shortfall over periods of 20, 22 or 30 years

Remaining Balances for 20-, 22-, & 30-Year Amortizations

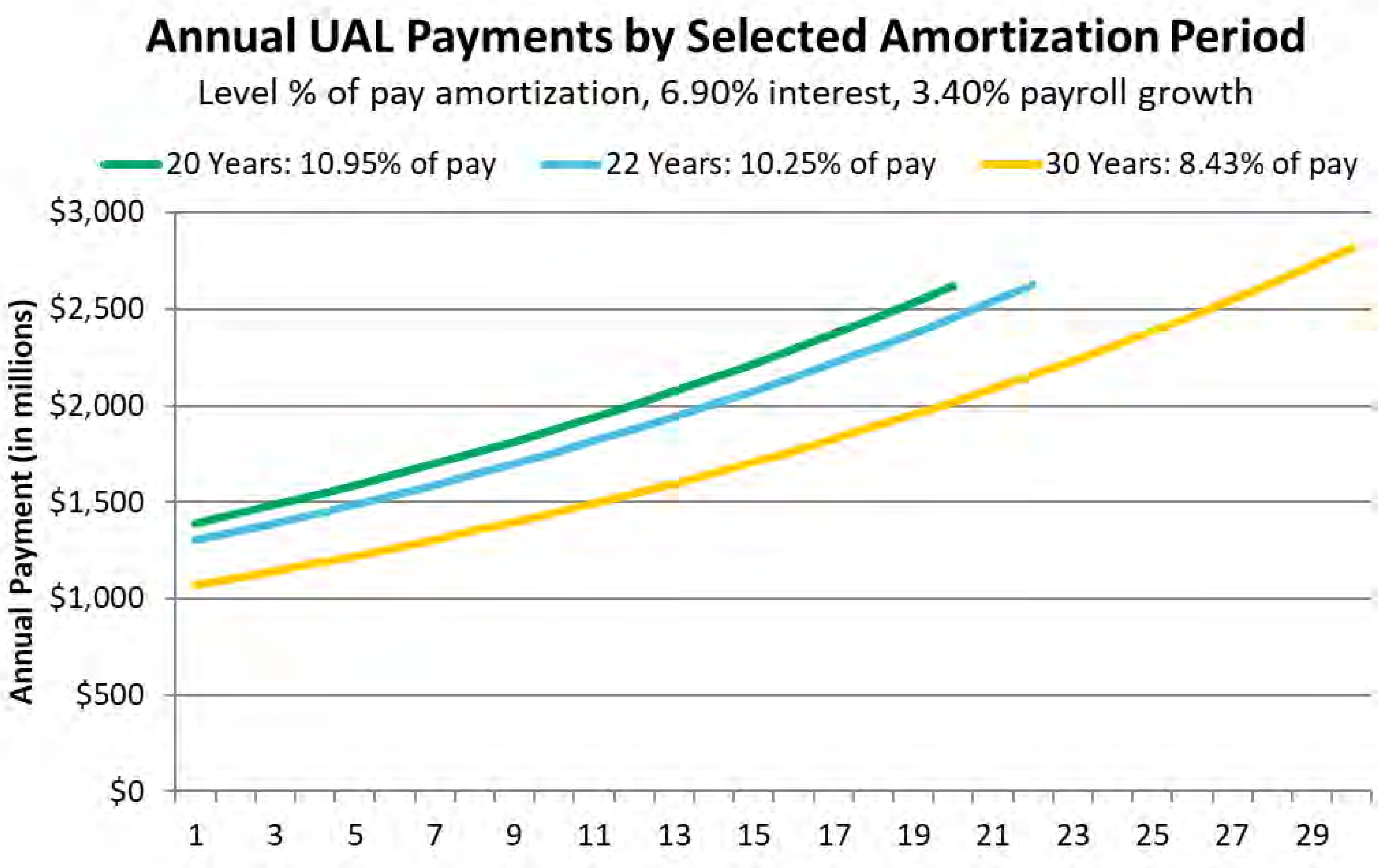


<u>Current ongoing policy</u>

- Tier One / Tier Two: **20 years**
- OPSRP: **16 years**

- **Why 20 years or less?** If actual experience matches the assumption…
  - with 22 years zero progress is made in decreasing the initial UAL until year 3
  - with 30 years the UAL has increased by about 8% after the first decade, and zero progress is made in decreasing the initial UAL until year 17

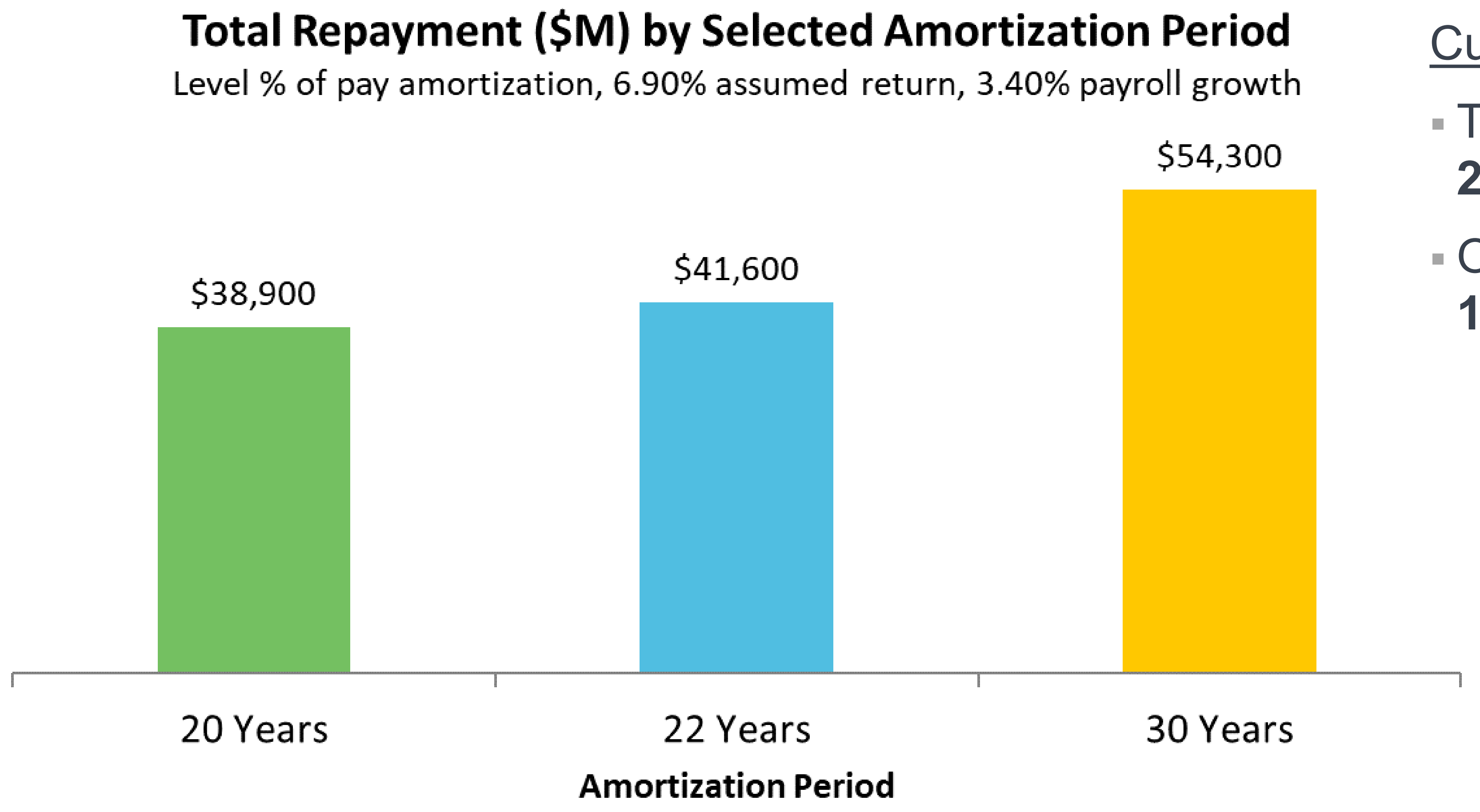
Illustration of UAL Amortization Periods



Current policy

- Tier One / Tier Two: **20 years**
- OPSRP: **16 years**

Illustration of UAL Amortization Periods

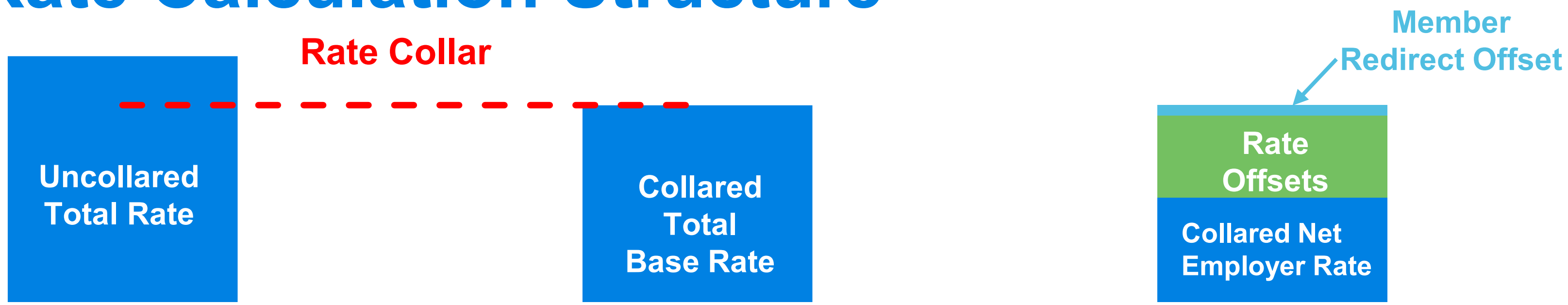


Current policy

- Tier One / Tier Two: **20 years**
- OPSRP: **16 years**

This illustrates total amortization payments for a $20.0 billion shortfall over periods of 20, 22 or 30 years

Overview of Rate Calculation Structure

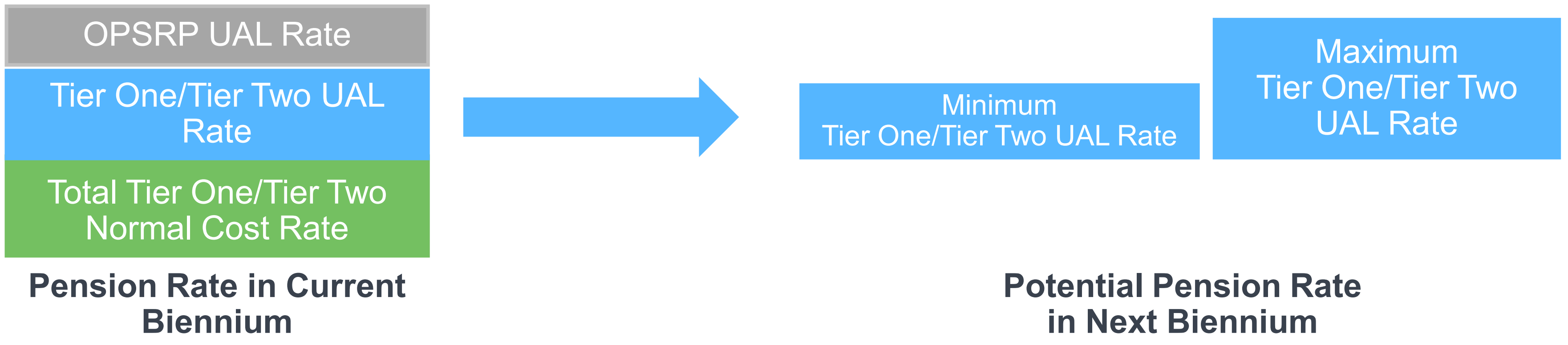


- The ***uncollared total rate*** is the theoretical contribution rate to reach 100% funded status over a specified amortization period if:
  - Contributions at that rate started on the actuarial valuation date, and
  - Actual future experience mirrors the actuarial valuation's assumptions, and
  - The normal cost rate does not change in subsequent years
- The rate collar sets a biennium's ***collared total base rate***, limiting the base rate change for a single biennium when there is a large change in the uncollared rate
- ***Member redirect offset*** reflects estimated portion of collared total base rate paid by redirected member contributions
- Employers pay the ***collared net employer rate***, which reflects the member redirect offset and any rate offset adjustments from:
  - Side account rate offsets for employers with side accounts
  - SLGRP charges/offsets (e.g., Transition Liability/Surplus)

Rate Collar Design

- Rate collar focuses on the biennium-to-biennium change in the UAL Rate component
  - Normal Cost Rate component is always paid in full and is not subject to a rate collar limitation
- The maximum biennium to biennium change in UAL Rate permitted by the rate collar is:
  - **SLGRP and School District Pools Tier One/Tier Two UAL Rates**: 3% of pay
  - **OPSRP UAL rate**: 1% of pay
  - **Tier One/Tier Two UAL Rates of Independent Employers**: greater of 4% of pay or 1/3rd of the difference between the collared and uncollared Tier One/Tier Two UAL Rates at the last rate-setting valuation
- UAL Rate is not allowed to decrease at all unless funded status excluding side accounts is at least 87%, and a full collar width decrease is not allowed unless funded status is at least 90%

Illustration of Rate Collar for Tier One/Tier Two UAL Rate



Mortality Assumption

	Current Assumption	Proposed Changes
Healthy Retired	Pub-2010 Generational, with unisex Social Security scale (1957-2017 experience) Healthy Retiree, Sex distinct	Pub-2010 Generational, with unisex Social Security scale (1919-2019 experience) Healthy Retiree, Sex distinct
▪ School district male ▪ Other GS male ▪ P&F male	Blend 80% Teachers/20% General Employees, no set back General Employees, set back 1 year Public Safety, no set back	Blend 80% Teachers/20% General Employees, no set back General Employees, set back 1 year Public Safety, no set back
▪ School district female ▪ Other GS female ▪ P&F female	Teachers, no set back General Employees, no set back Public Safety, set back 1 year	Teachers, no set back General Employees, no set back Public Safety, set back 1 year
Disabled Retired	Pub-2010 Disabled, Generational with unisex Social Security scale (1957-2017 experience) Sex distinct	Pub-2010 Disabled, Generational with unisex Social Security scale (1959-2019 experience) Sex distinct
▪ P&F male ▪ Other male ▪ P&F female ▪ Other female	50% Public Safety/50% Non-Safety, no set back Non-Safety, set forward 2 years 50% Public Safety/50% Non-Safety, no set back Non-Safety, set forward 1 year	50% Public Safety/50% Non-Safety, no set back Non-Safety, set forward 2 years 50% Public Safety/50% Non-Safety, no set back Non-Safety, set forward 1 year
Non-Retired Mortality	Pub-2010 Generational, with unisex Social Security scale (1957-2017 experience) Employee (Non-Annuitant), Sex distinct	Pub-2010 Generational, with unisex Social Security scale (1959-2019 experience) Employee (Non-Annuitant), Sex distinct
▪ School district male ▪ Other GS male ▪ P&F male	Blend 80% Teachers/20% General Employees, no set back, scaled 125% General Employees, set back 1 year, scaled 115% Public Safety, no set back, not scaled	Blend 80% Teachers/20% General Employees, no set back, scaled 125% General Employees, set back 1 year, scaled 115% **Public Safety, no set back, scaled 125%**
▪ School district female ▪ Other female	Teachers, no set back, not scaled General Employees, no set back, scaled 125% Public Safety, set back 1 year, not scaled	Teachers, no set back, not scaled General Employees, no set back, scaled 125% Public Safety, set back 1 year, not scaled

Retirement System Risks

- Oregon PERS, like all defined benefit plans, is subject to various risks that will affect future plan liabilities and contribution requirements, including:
  - **Investment risk**: the potential that investment returns will be different than expected
  - **Demographic risks**: the potential that mortality experience, retirement behavior, or other demographic experience for the plan population will be different than expected
  - **Contribution risk**: the potential that actual future contributions will be materially different than expected, for example if there are material changes in the System's covered payroll
- The results of an actuarial valuation are based on one set of reasonable assumptions, but it is almost certain that future experience will not exactly match the assumptions.
- Further discussion of plan risks and historical information regarding plan experience are shown in our annual actuarial valuations. In addition, our annual financial modeling presentation to the PERS Board illustrates future outcomes under a wide range of future scenarios reflecting variation in key risk factors.

OREGON PUBLIC EMPLOYEES RETIREMENT SYSTEM

2022 Experience Study

Prepared by:

Milliman, Inc.

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

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

1455 SW Broadway, Suite 1600
Portland OR 97201

Tel +1 503 227 0634
milliman.com

1455 SW Broadway
Suite 1600
Portland, OR 97201
USA

Tel +1 503 227 0634

milliman.com

July 24, 2023

Board of Trustees
Oregon Public Employees Retirement System

Re: 2022 Experience Study – Oregon Public Employees Retirement System

Dear Members of the Board:

The results of an actuarial valuation are based on the actuarial methods and assumptions used in the valuation. These methods and assumptions are used in developing employer contribution rates, disclosing employer liabilities pursuant to GASB requirements, and for analyzing the fiscal impact of proposed legislative amendments.

This experience study report has been prepared exclusively for the Oregon Public Employees Retirement System (PERS) and its governing PERS Board (Board). **The study recommends to the Board the actuarial methods and assumptions to be used in the December 31, 2022 and 2023 actuarial valuations of PERS. The latter actuarial valuation will be used to calculate actuarially determined employer contribution rates for the 2025-2027 biennium.**

Except where otherwise noted, the analysis in this study was based on data for the experience period from January 1, 2017 to December 31, 2022 as provided by PERS. PERS is solely responsible for the validity, accuracy, and comprehensiveness of this information; the results of our analysis can be expected to differ and may need to be revised if the underlying data supplied is incomplete or inaccurate.

This analysis also relied, without audit, on information (some oral and some in writing) supplied by PERS staff as well as a capital market outlook provided by Meketa, survey capital market outlook information published by Horizon Actuarial Services, and information presented to the Oregon Investment Council. 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 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. In assessing the Milliman capital market outlook presented in this report, per Actuarial Standards of Practice we disclose reliance upon a model developed by Milliman colleagues who are credentialed investment professionals with expertise in capital outlook modeling.

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

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

The consultants who worked on this assignment are retirement actuaries and, for the analysis of the RHIPA program, healthcare actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. 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 which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct* and *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* published by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. Assumptions related to the healthcare trend rates for the RHIPA program discussed in this report were determined by Milliman actuaries qualified in such matters.

Sincerely,

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

Table of Contents

1. Executive Summary **1**

2. Actuarial Methods and Allocation Procedures **3**

Overview *3*

Actuarial Cost Method *5*

Amortization Method *5*

Asset Valuation Method *8*

Excluded Reserves *9*

Rate Collar Method *9*

Liability Allocation for Actives with Multiple Employers *10*

Offset for Member Redirect Contributions *11*

3. Economic Assumptions **12**

Overview *12*

Inflation *13*

Real Wage Growth *14*

System Payroll Growth *15*

Investment Return *16*

Administrative Expenses *20*

RHIPA Subsidy Cost Trend Rates *20*

4. Demographic Assumptions **22**

Overview *22*

Mortality *24*

Retirement Assumptions *32*

Disability Incidence Assumptions *44*

Termination Assumptions *47*

Salary Increase Assumptions *50*

Retiree Healthcare Assumptions *55*

5. Appendix **57**

Data *57*

Assumption Tables *57*

1. Executive Summary

This experience study report has been prepared exclusively for the Oregon Public Employees Retirement System (PERS) and the PERS Board (Board) in order to analyze the system's experience from January 1, 2017 through December 31, 2022 and to recommend actuarial methods and assumptions to be used in the December 31, 2022 and 2023 actuarial valuations of PERS.

A summary of the recommended method and assumption changes contained in this report as well as items reviewed at the June 2023 and/or July 2023 Board meetings follows:

Economic Assumptions

- The **current investment return assumption of 6.90%** per year is now lower than the median expectation based on an analysis of PERS's current target asset allocation using several capital market outlook models. The median annualized geometric return for the 20-year outlook developed by the Oregon State Treasury staff in collaboration with Oregon Investment Council advisors Meketa and Aon was 7.6%, with an underlying inflation assumption of 2.5%. The median annualized geometric return for a 10-year time horizon based on Milliman's December 31, 2022 capital market outlook was 7.11% and for a 20-year time horizon was 7.46%. However, these higher expectations are driven by significant recent changes in financial market conditions, and it is currently unknown whether those changes will be temporary or enduring. **We recommend not increasing the assumption.**
- The **system payroll growth assumption could remain at 3.40% or could be lowered modestly for conservatism**.
- Update the assumption for future administrative expenses.
- Update the RHIPA health cost trend (i.e., healthcare cost inflation) assumption.

Demographic Assumptions

- **Most significant recommended updates: Increase the individual member salary increase assumption's merit/longevity component** for all member categories based on observations of the last ten years of experience. The individual member salary increase assumption consists of the sum of inflation, real wage growth, and merit/longevity components, with the latter varying by member. **Also, we recommend assuming additional 2% annual increases in the next two years above the updated long-term assumptions** to estimate the system-wide effect of recently announced bargaining agreements.
- Make a routine update to the mortality improvement scale for all groups, based on 60-year unisex average Social Security experience, and make an adjustment to the base mortality table applied to non-annuitant police & fire males.
- Adjust retirement rates for certain member categories and service bands to more closely align with recent and expected future experience; eliminate the forward-looking assumption of future retirees electing a partial lump sum.
- Update pre-retirement termination of employment assumptions for two member categories.
- Lower assumed rates of ordinary (non-duty) disability and general service duty disability incidence; increase the assumed rates of police & fire duty disability incidence.
- Adjust the Tier One unused vacation cash out assumption for two member categories.
- Adjust the Tier One/Tier Two unused sick leave assumption for most member categories to reflect recently observed experience.
- Decrease the likelihood of program participation for non-disabled retirees in the RHIA retiree healthcare program.

- Decrease the RHIPA likelihood of program participation assumption for most service bands.

Actuarial Methods and Allocation Procedures

- Introduce a contribution lag adjustment component to side account amortization calculations and Pre-SLGRP liability and surplus calculations (including transition liabilities and surpluses). The adjustment reflects the delay between the “as of” date of the amortization calculation and date on which the calculated side account rate offset takes effect.
- Modify the amortization calculation for Pre-SLGRP liabilities and surpluses for SLGRP employers, introducing a revised contribution timing component. Prior methodology amortized balances a December 31 date. Updated methodology will amortize to a June 30 date coinciding with the end of a biennial rate-setting period.

2. Actuarial Methods and Allocation Procedures

Overview

Actuarial methods and allocation procedures are used as part of the valuation to determine actuarial accrued liabilities, to determine normal costs, to allocate costs to individual employers and to amortize unfunded liabilities. The following Board guiding objectives were considered in developing recommended actuarial methods and allocation procedures:

- Transparency of shortfall and funded status calculations
- Predictable and stable employer contribution rates
- Protection of the plan's funded status to enhance benefit security for members
- Equity across generations of taxpayers funding the program
- Actuarial soundness - crafting policy that will fully fund the system if assumptions are met
- Compliance with GASB (Governmental Accounting Standards Board) requirements

The actuarial methods used for the December 31, 2019 actuarial valuation and the changes recommended for the December 31, 2020 and 2021 actuarial valuations are shown in the table below.

Method	December 31, 2021 Valuation	December 31, 2022 and 2023 Valuations
Cost method	Entry Age Normal (EAN)	No change
UAL Amortization method	UAL amortized as a level percent of combined Tier One/Tier Two and OPSRP payroll	No change
UAL Amortization period	▪ UAL bases – Closed amortization from the first rate-setting valuation in which experience is recognized – Tier One/Tier Two – UAL was re-amortized over 22 years effective December 31, 2019 as directed by Senate Bill 1049. Future Tier One/Tier Two UAL gains or losses will be amortized over 20 years. – OPSRP – 16 Years – RHIA/RHIPA charges – 10 years – RHIA/RHIPA credits – amortized over a rolling 20-year period when in actuarial surplus ▪ Newly established side accounts – Aligned with the new Tier One/Tier Two base from the most recent rate-setting valuation ▪ Newly established transition liabilities or surpluses – 18 years from the date joining the SLGRP (State & Local Government Rate Pool)	No change to Tier One/Tier Two, OSPRP and RHIA/RHIPA. Side accounts amortization periods are unchanged but will introduce a lag adjustment to the amortization calculation to reflect the delay between when the calculation occurs and when the new rate is effective. Methodology for transition liabilities or surpluses adjustments will be changed from amortizing to December 31 of the relevant year to the end of the associated biennial rate-setting period 18 months later.

Method	December 31, 2021 Valuation	December 31, 2022 and 2023 Valuations
Asset valuation method	Market value	No change
Exclusion of reserves from valuation assets	Contingency Reserve, Capital Preservation Reserve, and Tier One Rate Guarantee Reserve (RGR) excluded from valuation assets. RGR is not excluded from valuation assets when RGR is negative (i.e., when the RGR is a deficit reserve).	No change
Allocation of Benefits in Force (BIF) Reserve	The BIF is allocated to each rate pool in proportion to the retiree liability attributable to the rate pool.	No change
Rate collar	Change in UAL Rate contribution rate component limited to: • 3% of payroll for Tier One/Tier Two SLGRP (State & Local Government Rate Pool) and Tier One/Tier Two School District Rate Pool • 1% of payroll for OPSRP • 4% of payroll for Tier One/Tier Two UAL Rate of independent employers, but not less than one-third of the difference between the uncollared and collared UAL Rate Additionally, the UAL Rate is not allowed to decrease for a rate pool until the pool's funded percentage excluding side accounts is over 87% and would not reflect the full collar width until reaching 90% funded.	No change
Liability allocation for actives with multiple employers	▪ Allocate Actuarial Accrued Liability 10% (0% for police & fire) based on account balance with each employer and 90% (100% for police & fire) based on service with each employer	Change allocation to 5% (0% for police & fire) based on account balance with each employer and 95% (100% for police & fire) based on service with each employer
	▪ Allocate Normal Cost to current employer	No change
System-average offset for member redirect contributions	▪ 2.40% of Tier One/Tier Two payroll ▪ 0.65% of OPSRP payroll	No change

The methods and procedures are described in greater detail on the following pages.

Actuarial Cost Method

The total contribution cost of the program, over time, will be equal to the benefits paid less actual investment earnings and is not affected directly by the actuarial cost method. The actuarial cost method is simply a tool to allocate projected costs to past, current, or future years and thus primarily affects the timing of cost recognition.

The December 31, 2021 valuation used the Entry Age Normal (EAN) actuarial cost method, which allocates costs as a level percentage of payroll across the full projected working career. EAN is the required method under governmental financial reporting standards, though the Board could choose to use a different method for employer contribution rate calculations. Oregon PERS adopted EAN for all purposes with the December 31, 2012 valuation. Employing a consistent cost allocation method for both financial reporting and contributions is more understandable to interested parties as only one set of liability and normal cost calculations will be made for each member, employer, and rate pool. The EAN approach is widely used in the actuarial and public plan sponsor community because it provides an actuarially sound estimate of the projected long-term contribution costs of a retirement program as a level percentage of payroll if all assumptions are met. The benefits of this method are unchanged from when the Board previously adopted it, and **we recommend continuing to use the EAN actuarial cost method**.

Amortization Method

Unfunded Actuarial Liability

The unfunded actuarial liability (UAL) is amortized as a level percentage of projected combined payroll (Tier One/Tier Two plus OPSRP) in order to better maintain level contribution rates as payroll for the closed group of Tier One/Tier Two members declines and payroll of OPSRP members increases. We recommend this methodology continue.

The Board-selected method in recent years has been to amortize UAL over the following closed periods as a level percent of projected payroll from the first rate-setting valuation in which the experience is recognized:

- Tier One/Tier Two – 20 years
- OPSRP – 16 years
- RHIA/RHIPA charges when funded status is below 100% – 10 years
- RHIA/RHIPA credits when funded status is over 100% – 20 year rolling period

As part of a collection of method changes made with the 2012 Experience Study, the Board made a policy decision to re-amortize all existing Tier One/Tier Two unfunded actuarial liability (UAL) at the December 31, 2013 rate-setting actuarial valuation. Since then, previously unanticipated increases or decreases in Tier One/Tier Two UAL between subsequent rate-setting valuations have been amortized as a level percentage of payroll over a closed 20-year period from the rate-setting valuation in which they were first recognized. Unanticipated UAL increases or decreases can arise from actual experience differing from assumption (experience gain or experience loss) or updates to assumptions and/or methods.

Senate Bill 1049 was signed into law in June 2019 and required a one-time re-amortization of all existing Tier One/Tier Two UAL over a closed 22-year period at the December 31, 2019 rate-setting actuarial valuation which set actuarially determined contribution rates for the 2021-2023 biennium. The remaining amortization period of this closed amortization base will continue to decrease. In the 2020 Experience Study the Board adopted a 20-year closed amortization for the previously unanticipated Tier One/Tier Two UAL arising as of the December 31, 2021 rate-setting actuarial valuation date. **We recommend the Board maintain the 20-**

year closed, layered amortization approach for previously unanticipated increases or decreases in Tier One/Tier Two UAL as of each future rate-setting actuarial valuation date.

RHIA & RHIPA Amortization

Retiree Healthcare (RHIA and RHIPA) benefits are only available to closed groups, since only Tier One/Tier Two members are eligible for the programs (RHIPA is further restricted to state employees). Starting with the 2020 Experience Study, the Board has adopted an amortization period for these programs that differs depending on whether a program is less than 100% funded or over 100% funded.

The UAL for the RHIA and RHIPA as of December 31, 2007 was each amortized as a level percentage of projected combined valuation payroll (Tier One/Tier Two plus OPSRP payroll) over a closed 10-year period. When RHIA or RHIPA are less than 100% funded, previously unanticipated increases or decreases in UAL between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over a closed 10-year period from the valuation in which they are first recognized.

If RHIA or RHIPA are in actuarial surplus (over 100% funded), the surplus is amortized over a rolling 20-year period over Tier One/Tier Two payroll. The resulting negative UAL rate can offset the normal cost rate of the program, but not below a net 0.00% contribution rate. If the program subsequently were to fall below 100% funded, the newly arising UAL would then be amortized over combined Tier One/Tier Two and OPSRP payroll following a 10-year closed, layered amortization policy.

We recommend no changes to this policy.

Contribution Time Lag Adjustment

The current funding policy does not apply any contribution time lag adjustment to UAL contribution rates for the 18-month delay between the rate-setting actuarial valuation date at which new contribution rates are calculated and the July 1 date on which rates first take effect. When contribution rates increase, such an adjustment would add a small additional rate increase to account for the fact the new higher contribution rate did not take effect immediately at the actuarial valuation date. When contribution rates decrease, a similar dynamic would lead to an additional rate decrease from the adjustment. Any delay adjustments would not be expected to have a material effect in total if System experience has gains and losses that approximately offset over time.

While the practice of adjusting for a time lag has intuitive appeal, previous experience for Oregon PERS led to the elimination of such an adjustment in the past. Given the complexities of a system with several hundred employers receiving individually determined contribution rates that reflect various combinations of pooled and unpooled individual employer experience, a time lag adjustment would not be one simple calculation for the system. The last time Oregon PERS did employ a time lag adjustment as part of the contribution calculation methodology was in the early 2000s. Our understanding is the experience at that time led to persistent (but typically small) differences in contribution rate components paid by employers in the same experience-sharing pool, increased difficulty for stakeholders in reconciling rate changes from biennium to biennium, and increased difficulty for employers in understanding how their rates were calculated. This experience led to the decision to remove time lag adjustments from contribution rate calculations.

With this experience study, we again reviewed the issue of a possible time lag adjustments and discussed this topic with the Board over several meetings. **Based on this review, our recommendations are:**

- **For regular UAL Rate amortizations**: Continue not to apply a time lag adjustment in the calculation of rates. In our opinion, the additional complexity this would add to the calculation would materially impair the ability of employers to follow and understand their rate calculations and would not provide a sufficient offsetting benefit.

  - For a time lag adjustment to be rigorous, it would involve adjusting each UAL layer established for all rate pools (OPSRP, SLGRP, School Districts, and 120+ Independent Employers). This would be hard to communicate and hard for employers to track the effect on their contribution rates.

  - The absence of a time lag adjustment is not biased and is not expected to significantly affect long-term UAL Rates. Since new layers of UAL will be added every rate-setting valuation, with some credits and some charges, the net effect of the adjustments would sometimes be small increases and sometimes small decreases compared to a policy without a time lag adjustment.

  - Overall, we believe the harm this change would cause to the Board-adopted objective of transparency is not warranted given the lack of an expected commensurate benefit.

- **For Side Account and Pre-SLGRP amounts**: We recommend introducing a time lag adjustment for the contribution rate components tied to side account and Pre-SLGRP amounts. Pre-SLGRP amounts include employer-specific transition liabilities/surpluses along with a specific grouped Pre-SLGRP liability for the state and community colleges and a grouped Pre-SLGRP surplus for employers who participated in the Local Government Rate Pool (LGRP). The reasons for our recommendation are:

  - Unlike regular UAL, side accounts and Pre-SLGRP amounts are single balances that amortize to zero over time, without the addition of new layers related to future experience. The amortization has a fixed end point, instead of cycling through new and offsetting gains and losses in future biennia as is the case for regular UAL.

  - The management of expiring rate adjustments at the end of the amortization period will be meaningfully improved by incorporating a time lag adjustment. Because the time lag adjustment builds in the actual rate offset level in effect for the 18 months following the rate-setting actuarial valuation date, in the situations where recent experience has significantly changed the offset rate this will help mitigate the possibility of balance drawing down to zero well before the intended expiration date of the rate offset.

  The majority of balances for both side accounts and Pre-SLGRP amounts are scheduled to expire on December 31, 2027. As a result, introducing this time lag adjustment in the upcoming valuations would be timely to facilitate a smoother process for expiring contribution rate components. Additional details related to the amortization of side accounts and transition liabilities/surpluses are discussed below.

Side Accounts and Transition Liabilities/Surpluses

Prior to the 2010 Experience Study, side accounts and transition liabilities/surpluses were amortized over a fixed-date period ending on December 31, 2027. To better match the amortization periods for new side accounts and new transition liabilities with the amortization of the Tier One/Tier Two UAL and to avoid issues related to a shortening amortization period, the PERS Board adopted the following amortization procedures which are not tied to a fixed date as part of the 2010 Experience Study:

- In general, newly established side accounts have been amortized over a 20-year period aligned with the new Tier One/Tier Two UAL amortization base from the most recent rate-setting valuation. For example, a side account created in July 2023 would have an amortization period ending on December 31, 2041, which would align with the 20-year Tier One /Tier Two UAL amortization base created in the December 31, 2021 rate-setting valuation that will establish 2023-2025 employer contribution rates. Employers who make lump sum payments in accordance with the rules under OAR 459-009-0086(9) may select a shorter amortization period of either 6, 10, or 16 years since the most recent rate-setting actuarial valuation.
- New transition liabilities/surpluses are amortized over the 18-year period beginning when the employer joins the SLGRP. This amortization period aligns with the last Tier One/Tier Two UAL amortization base established as an independent employer.

With the current Experience Study, we recommend:

- Introducing a time lag adjustment for both side accounts and transition liabilities/surpluses, as discussed above.

- Adjusting the endpoint of the amortization period for all transition liabilities/surpluses and other Pre-SLGRP amounts to expire 18 months after the currently scheduled December 31. For example, balances scheduled to expire on December 31, 2027 will be adjusted to amortize through June 30, 2029. This aligns with the usual biennial rate-setting cycle and will allow PERS staff to handle the expiration of Pre-SLGRP amounts as part of the regular biennial rate-setting process, rather than requiring an off-cycle change in rates. Any new transition liabilities or surpluses in the future will follow similar timing, such that the amortization period will be 19½ years (18 years from when the employer joins the SLGRP, plus 1½ years to align with the rate-setting timing).

- Making no additional “expiration date” changes to the amortization method or periods for side accounts, which will continue to amortize to a fixed period projected to end on December 31. Unlike Pre-SLGRP amounts, side account balances are specifically identified employer assets which PERS can track monthly and which fluctuate with actual investment experience. As a result, PERS can and should manage the side account expiration process separately from the usual biennial cycle. In addition, we understand many employers funded side accounts with Pension Obligation Bonds with repayment schedules that may have been structured around the projected amortization period end date for side account rate offsets. Such employers may prefer to have the projected expiration date remain unchanged to the extent possible.

Asset Valuation Method

Effective December 31, 2004, the Board adopted market value as the actuarial value of assets, replacing the four-year smoothing method previously used to determine the actuarial asset value, which is used for shortfall (UAL) calculations. Although asset smoothing is a common method for smoothing contribution rates in public sector plans, the smoothed asset value provides a less transparent measure of the plan’s funded status and UAL. Market value provides more transparency to members and other interested parties regarding the funded status of the plan. Instead of smoothing the rate calculation’s asset input, a rate collar method (described below) is used to smooth contribution rate output and systematically spread large rate increases across several biennia.

We recommend no change to the asset valuation method.

Excluded Reserves

Statute provides that the Board may establish Contingency and Capital Preservation reserve accounts to mitigate gains and losses of invested capital and other contingencies, including certain legal expenses or judgments. In addition, statute requires the establishment and maintenance of a Rate Guarantee or Deficit reserve to fund earnings crediting to Tier One member regular accounts when actual earnings are below the investment return assumption selected by the Board.

The Contingency and Capital Preservation reserves are excluded from the valuation assets used for employer rate-setting calculations. **We recommend no change to the treatment of the Contingency and Capital Preservation reserves.**

The Rate Guarantee Reserve (RGR) was positive as of December 31, 2021 but can become negative (in deficit status) if, over time, the required crediting on Tier One member accounts exceeds the investment earnings actually achieved on those accounts. The RGR was negative from the December 31, 2008 valuation to the December 31, 2012 valuation. All else being equal, excluding a negative reserve increases the level of valuation assets used in employer rate-setting calculations. This occurs because subtracting a negative amount is mathematically equivalent to adding a positive amount of the same magnitude. If the negative reserve was larger in absolute value than the sum of the other reserves, this approach would lead to the actuarial value of assets used in shortfall (UAL) calculations being larger than the market value of assets.

As part of the 2010 Experience Study, the Board decided to only exclude the RGR from assets when it is in positive surplus position, and not to subtract a negative RGR (which would increase the actuarial value of assets) when it is in deficit status. **We recommend this treatment of the RGR continue.**

Rate Collar Method

Effective December 31, 2004, a rate collar method was adopted that limits biennium to biennium changes in contribution rates to be within a specified “collar” range. The PERS Board reviewed the components of the rate collar methodology over the course of several Board meetings in 2020 and 2021 to determine whether any changes to the parameters of the rate collar would be desirable, which culminated in changes that were adopted with the 2020 Experience Study. **With the current study, we recommend no changes to the rate collar method described below.**

Rate Collar Method: The Unfunded Actuarial Liability (UAL) Rate component for a rate pool (e.g., Tier One/Tier Two SLGRP, Tier One/Tier Two School Districts, OPSRP), is confined to a collared range based on the prior biennium’s collared UAL Rate component (prior to consideration of side account offsets, SLGRP transition liability or surplus rates, pre-SLGRP liability rate charges or offsets, or member redirect offsets). Other parameters of the rate collar are as follows:

- **Collar width:**
  - Tier One/Tier Two State & Local Government Rate Pool (SLGRP) and Tier One/Tier Two School District Rate Pool: 3% of payroll
  - OPSRP: 1% of payroll (experience for the OPSRP UAL Rate is pooled at a state-wide level)
  - Tier One/Tier Two UAL Rates for independent employers: greater of 4% of payroll or one-third of the difference between the employer’s collared and uncollared UAL Rate at the last rate-setting valuation. In addition, the UAL Rate will not be allowed to be less than 0.00% of payroll for any independent employer with a funded status (excluding side accounts) less than 100%.

- **UAL Decrease restrictions:** the UAL Rate component for any rate pool will not decrease from the prior biennium's collared UAL Rate component if the pool's funded status is 87% (excluding side accounts) or lower; the allowable decrease will phase into the full collar width from 87% funded to 90% funded.

The rate collar is applied for each rate pool (or independent employer) prior to any adjustments to the employer contribution rate for side accounts, transition liabilities, or pre-SLGRP pooled liabilities. The rate collar only applies to employer contribution rates for pension benefits. Rates attributable to RHIA and RHIPA (retiree medical) programs are not subject to the collar.

Liability Allocation for Actives with Multiple Employers

Over the course of a member's working career, a member may work for more than one employer covered under the Tier One/Tier Two program. Since employer Tier One/Tier Two contribution rates are developed on an individual employer basis, while also considering any rate pooling structures, the member's liability should be allocated between the member's various Tier One/Tier Two employers. If all of the member's employers participate in the same rate pool, the allocation has no effect on rates. However, if the employers in question are in different rate pools, or some are independent, the method to allocate liability among employers can have an impact on the employers' calculated contribution rates.

When a member retires, PERS allocates the cost of the retirement benefit between the employers the member worked for based on the calculation approach that produces the member's retirement benefit. If the member's benefit is calculated under the Money Match approach, the cost is allocated in proportion to the member's account balance attributable to each employer. If the member's benefit is calculated under the percent of final average pay Full Formula approach, the cost is allocated in proportion to the service attributable to each employer.

In the period prior to the 2003 system reforms and shortly thereafter, the vast majority of retirement benefits were calculated under the Money Match approach, so the member liability in valuations prior to December 31, 2006 had been allocated in proportion to the member's account balance attributable to each employer. With no new member contributions to Tier One/Tier Two, however, this procedure meant no liability was allocated to employers for service after December 31, 2003 in the valuation. As Money Match approach calculations became less predominant and retirements under the Full Formula approach become more prevalent, a change in the procedure to allocate liability among employers was warranted.

Effective with the December 31, 2006 valuation, a change was made to allocate a member's actuarial accrued liability among employers based on a weighted average of the Money Match methodology, which utilizes member account balance, and the Full Formula methodology, which utilizes service. The methodologies were weighted according to the percentage of the system-wide actuarial accrued liability for new retirements projected to be attributable to the Money Match and Full Formula approaches, respectively, as of the next rate-setting valuation. For the December 31, 2020 and December 31, 2021 valuations, the Money Match method was weighted 10% for general service members and 0% for police & fire members.

The total actuarial liability for Tier One/Tier Two active members estimated to be attributable to the Money Match approach as of December 31, 2022 is 5% for general service members and less than 1% for police & fire members. This continues the decreasing trend of Money Match benefits seen in prior Experience Studies.

We recommend the Money Match approach weighting be reduced to 5% for general service members. This weighting will continue to be reviewed with each experience study and updated, as necessary.

For police & fire members we recommend the allocation continue to be based entirely on the Full Formula approach.

As in prior valuations, the member's normal cost will continue to be assigned fully to their current employer.

Offset for Member Redirect Contributions

Senate Bill 1049 from the 2019 legislative session provided that a portion of the 6% of pay member contribution would be redirected from the Individual Account Program (IAP) to the Employee Pension Stability Account (EPSA) beginning July 1, 2020. The EPSA amounts will be used to help fund Tier One/Tier Two and OPSRP defined benefits. Absent modification to governing law, the redirect to EPSA will remain in effect until the system-wide funded status including side accounts in a rate-setting actuarial valuation is 90% or greater.

The member redirect only applies to members whose pay exceeds a specified monthly salary threshold. This threshold was originally set at $2,500 per month ($30,000 per year for a 12-month employee) for 2020, increased for inflation in future years. House Bill 2906 from the 2021 legislative session subsequently increased this threshold to $3,333 per month ($40,000 per year for a 12-month employee) effective in 2022.

For members with pay above the monthly threshold, the amount redirected from the IAP to the EPSA is as follows:

- Tier One/Tier Two: 2.50% of pay
- OPSRP: 0.75% of pay

Beginning with the 2021-2023 biennium rates which were set in 2020, the PERS Board has adopted employer contribution rates that are based on a total gross actuarially calculated contribution rate along with an assumed offset for the average level of member redirect contribution for each tier. For the 2021-2023 biennium, the projected system-average member redirect offset was 2.45% of pay for Tier One/Tier Two and 0.70% of pay for OPSRP. Those projected offsets were based on the $2,500 per month threshold in the 2019 legislation. The 0.05% of pay difference between the redirect amount for affected individual members and the assumed system-average offset was due to the amount of pay expected to fall below the redirect monthly threshold. For the 2023-2025 biennium's contribution rate calculations, the projected system-average member redirect offset is 2.40% of pay for Tier One/Tier Two and 0.65% of pay for OPSRP. The increase from 0.05% to 0.10% in the pay difference between the redirect amount for an individual and the assumed offset was due to the revised pay threshold from House Bill 2906.

Based on our updated analysis reflecting individual member pay from the December 31, 2021 actuarial valuation reflecting the current inflation-adjusted pay threshold, we recommend the following assumed member redirect offset amounts for the 2025-2027 biennium:

- Tier One/Tier Two: 2.40% of pay
- OPSRP: 0.65% of pay

These amounts are unchanged from the current assumption.

3. Economic Assumptions

Overview

Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations,* provides guidance on selecting economic assumptions used in measuring obligations under defined benefit pension plans. ASOP No. 27 suggests that economic assumptions be developed using the actuary's professional judgment, taking into consideration past experience and the actuary's expectations regarding the future. The process for selecting economic assumptions involves:

- Identifying components of each assumption and evaluating relevant data
- Considering factors specific to the measurement along with other general factors
- Selecting a reasonable assumption

Under ASOP No. 27, an assumption is considered reasonable if:

- It is appropriate for the purpose of the measurement,
- It reflects the actuary's professional judgment,
- It takes into account relevant historical and current economic data,
- It reflects the actuary's estimate of future experience, the actuary's observation of estimates inherent in market data, or a combination thereof, and
- It has no significant bias, except when provisions for adverse deviation are included and disclosed.

A summary of the economic assumptions used for the December 31, 2021 actuarial valuation and those recommended for the December 31, 2022 and 2023 actuarial valuations is shown below:

Assumption	December 31, 2021 Valuation	December 31, 2022 and 2023 Valuations
Inflation (other than healthcare)	2.40%	2.40%
Real wage growth	1.00%	1.00% or lower
System payroll growth	3.40%	3.40% or lower
Regular investment return	6.90%	While current capital market outlooks are higher than the current assumption, we recommend the Board not increase the assumption. The Board will select the assumption at its July 28, 2023 meeting
Variable account investment return	Same as regular investment return	Same as regular investment return
Combined Tier One/Tier Two & OPSRP administrative expenses	$59 million/year	$64 million/year
RHIPA health cost trend rates		
▪ 2023 cost trend rate	5.10%	6.60%
▪ Ultimate cost trend rate	3.90%	3.80%
▪ Year reaching ultimate rate	2074	2074

The recommended assumptions shown above, in our opinion, were selected in a manner consistent with the guidance of ASOP No. 27. Each of the above assumptions is described in detail below and on the following pages.

Inflation

The assumed inflation rate is a building block for all other economic assumptions. It affects assumptions including investment return, system payroll growth, and the RHIPA health cost trend rate.

In selecting an appropriate inflation assumption, we consider both historical data and the breakeven inflation rates implied by recent yields of long-term Treasury Inflation Protection Securities (TIPS) and Treasury bonds. The chart above shows the historical annual inflation rate for the years ending December 31 from 1935 through 2022 as reported by the Bureau of Labor Statistics. The mean and median annual rates over this period are **3.64%** and **2.90%** respectively.

Historical inflation rates vary significantly from period to period and may not be an indication of future inflation rates. Given the presence of a TIPS market, we can calculate an estimated breakeven inflation rate by comparing yields on regular Treasury securities to the yields on TIPS. The table below shows yields as of December 31, 2022, for 10-year and 30-year Treasury bonds and TIPS.

	As of 12/31/2022	
	10-Year	**30-Year**
Treasury Yield	3.88%	3.97%
TIPS Yield	1.58%	1.67%
Breakeven Inflation	**2.30%**	**2.30%**

We also considered forward-looking estimates of inflation measures prepared by prominent organizations with the need and expertise to forecast long-term inflation: Social Security's intermediate inflation projection average of 2.59% over the period 2022-2032 (with an ultimate rate of **2.40%**), the Cleveland Fed's inflation expectation model projection 2.29% inflation over 10 years and **2.42%** over 30 years, the Medicare Trustees' intermediate assumption of 3.20**%** inflation for ten years and **2.40%** thereafter, and the Congressional Budget Office's projection of CPI of an average of 2.56% inflation over the period 2022-2032 (with an ultimate rate of **2.30%**). These measures were taken from, respectively, the 2023 OASDI Trustees Report, data published on the website of the Federal Reserve Bank of Cleveland, the 2023 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds, and *The Budget and Economic Outlook: 2023 to 2033* published by the CBO in February 2023.

Based on the information shown above, **we believe the current assumption of 2.40% is reasonable and recommend no change**.

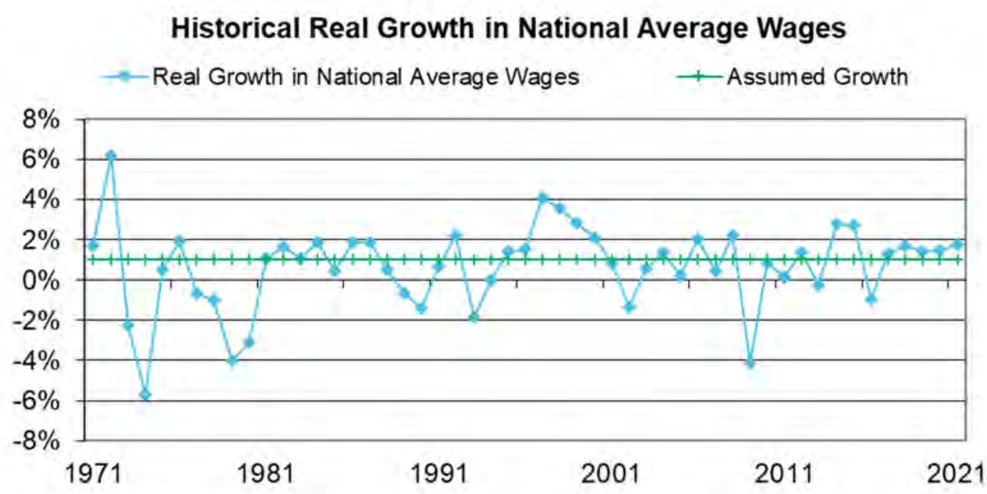
Real Wage Growth

The assumed individual salary increase assumption for each member is the sum of three components:

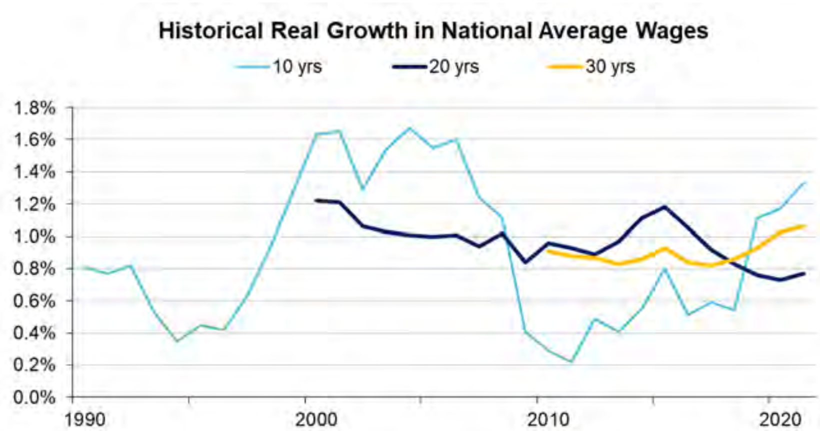
- Inflation,
- Real wage growth, and
- Merit and longevity wage growth.

Real wage growth represents the increase in wages above inflation for an entire population due to improvements in productivity and competitive pressures. Merit and longevity wage growth, in contrast, represent the increases in wages for an individual due to factors such as performance, promotion, or seniority.

The chart below shows the real growth in national average wages over the past fifty years based on data compiled by the Social Security Administration.



While the change in any one year has been volatile, the change over longer periods of time is more stable as shown in the chart below, which depicts the 10, 20, and 30 year trailing average reflecting data since 1981. (For example, the 10-year trailing average shown for 1990 in the chart reflects data from 1981 through 1990.)

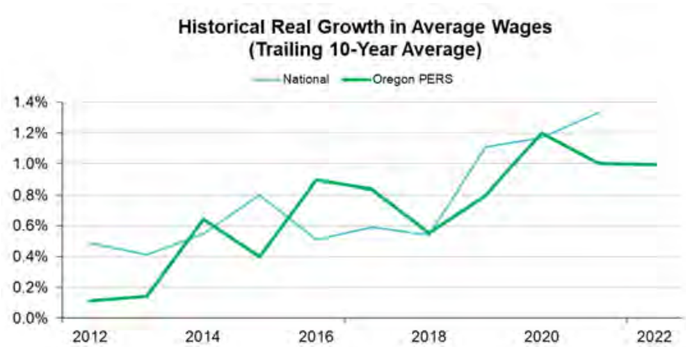


While the 10-year trailing average is still somewhat volatile, the 20- and 30-year averages have generally remained between 0.80% and 1.20% during the period shown. The table below shows the trailing average over various periods as of December 31, 2021, which was the most recently available data at the time of this report's development.

Length of Period Ending December 31, 2021	Average Real Growth in National Average Wages
10 years	1.33%
20 years	0.77%
30 years	1.06%
40 years	0.99%
50 years	0.64%

We also considered the Social Security Administration's current long-term intermediate wage growth assumption of 1.15% in our analysis.

Finally, we compared how the recent 10-year trailing average of changes in national average wages compared to the average change in Oregon PERS salary, as shown in the graph below:



In general, the direction and trend for recent System experience has been consistent with the patterns of changes in national average wages. The Oregon PERS experience for the most recent comparable 10-year period has lagged the trailing average for national data, but this relationship can vary greatly over a one- or two-year period, as shown in the comparison of the 2020 and 2021 data points above.

Based on the combination of historical data and Social Security's outlook for future experience, **we consider the current assumption of 1.00% to continue to be reasonable and appropriate, but a modestly lower assumption (such as 0.80% or 0.90%) would also be reasonable.**

System Payroll Growth

Real wage growth combined with inflation represents the expected growth in total system payroll for a stable active employee population. Changes in payroll due to an increase or decline in the headcount of the active employee population are customarily not captured by this assumption unless there is a reason to build in a known expectation of significant long-term changes in the active working population. For Oregon PERS, we do not have any reason to assume such changes, and so assume a stable population for purposes of the system payroll growth assumption.

The system payroll growth assumption is used to develop the annual amount necessary to amortize the unfunded actuarial liability (UAL) as a level percentage of projected future system payroll. For any given amount of UAL, a lower system payroll growth assumption will produce a higher near-term contribution rate to amortize the UAL over a given time period, while a higher assumption will produce a lower near-term contribution rate. For this reason, a lower system payroll growth assumption is considered more conservative in terms of the contribution rate development, as it is less likely to result in actual payroll growth (and contribution dollars) falling below the assumption.

The table below compares actual trailing experience for Oregon PERS in terms of growth in overall valuation payroll (the middle column) and the average per-member payroll (the right column). The increase in overall valuation payroll has exceeded the per-member average due to modest increases in System active member headcount during these time periods.

Length of Period Ending December 31, 2021	Oregon PERS Average Annualized Growth in Valuation Payroll	Oregon PERS Average Annualized Growth in Average Payroll
5 years	5.1%	4.5%
10 years	4.0%	3.6%
15 years	3.7%	3.1%
20 years	3.6%	3.1%

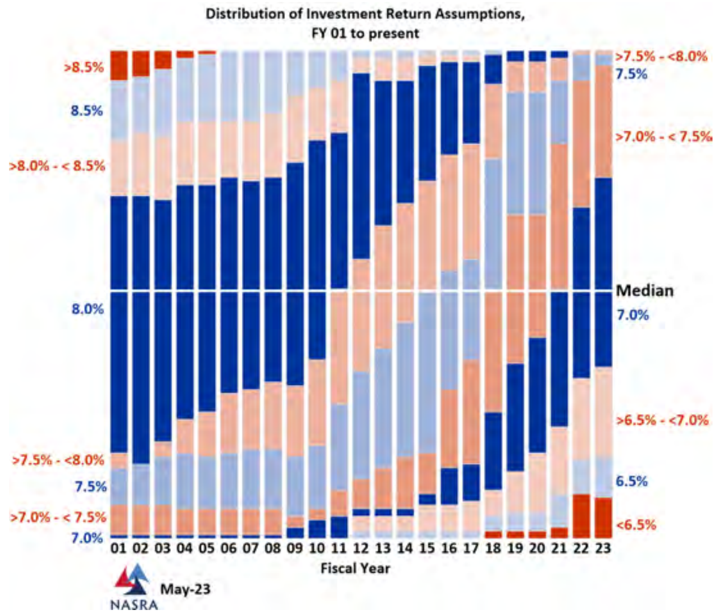
We are recommending the inflation assumption remain at 2.40% and the real wage growth assumption either remain at 1.00% or be reduced slightly. Additionally, **we recommend that the payroll growth assumption continue to be set equal to the sum of these two assumptions. The real wage growth assumption would remain at 3.40% (if the real wage growth is unchanged) or be revised downward in equal amount if a lower real wage growth assumption is chosen.**

Investment Return

The assumed rate of investment return is used to calculate the present value as of the actuarial valuation date of future projected system benefit payments, to project interest credits applied to member accounts until retirement, to convert member account balances to monthly retirement allowances under the Money Match formula, and to convert the retirement allowance to actuarially equivalent optional joint & survivor forms of benefit. As such, it is the most important assumption used in valuing the plan's liabilities and developing contribution rates. The assumption is intended to reflect the long-term expected average future return on the portfolio of assets that fund the benefits.

To provide some perspective on this assumption, the chart below shows the assumptions used by the 131 largest US public sector systems in a regularly updated survey published by the National Association of State Retirement Administrators (NASRA). As can be seen from the chart (updated by NASRA in May 2023), the Oregon PERS assumption of 6.90% used in the prior valuation is currently below the median assumption for large US public sector systems, which is 7.00%. The arithmetic average (mean) of the return assumptions in the chart is 6.92%. Over most of the period covered by the chart, the consensus view among investment professionals regarding future expected returns had been decreasing, largely driven by lower interest rates (which are associated with lower long-term expected future returns for fixed income investments) and higher price-to-earnings ratios for equities (associated with lower expected future returns for equity investments). After the significant rises in interest rates and equity market losses experienced in 2022, this pattern has begun to reverse as discussed further below. However, in general large pension systems have not made significant changes to their long-term forward-looking outlook based on these recent developments.

NASRA Public Fund Survey
Assumed Investment Return



Regular Accounts

Based on the Oregon Investment Council's (OIC) Statement of Investment Objectives and Policy Framework for the Oregon Public Employees Retirement Fund, including revisions adopted at the OIC meeting on January 25, 2023, we understand the current target asset allocation is as follows:

To develop an analytical basis for the Board's selection of the investment return assumption, we use long-term real return outlooks developed by Milliman's capital market outlook team for each of the asset classes in which the plan is invested based on the OIC's long-term target asset allocation to develop nominal expected returns. Since the OIC uses broader asset classes than those for which Milliman's investment professionals develop long-term return assumptions, we received assistance from Meketa, OIC's primary consultant, to map each OIC asset class to the classes in Milliman's model shown below. Each asset class assumption is based on a consistent set of underlying assumptions, including the inflation assumption. These assumptions are not based on average historical returns, but instead are based on a forward-looking capital market outlook economic model. Based on the target allocation and investment return assumptions for each of the asset classes, our model's 50th percentile output is developed as follows:

Asset Class	Target Allocation	Annual Arithmetic Mean	20-Year Annualized Geometric Mean	Annual Standard Deviation
Global Equity	27.50%	8.57%	7.07%	17.99%
Private Equity	25.50%	12.89%	8.83%	30.00%
Core Fixed Income	25.00%	4.59%	4.50%	4.22%
Real Estate	12.25%	6.90%	5.83%	15.13%
Master Limited Partnerships	0.75%	9.41%	6.02%	27.04%
Infrastructure	1.50%	7.88%	6.51%	17.11%
Hedge Fund of Funds – Multi-strategy	1.25%	6.81%	6.27%	9.04%
Hedge Fund Equity-Hedge	0.63%	7.39%	6.48%	12.04%
Hedge Fund – Macro	5.62%	5.44%	4.83%	7.49%
Portfolio – Net of Investment Expenses	100.00%	8.26%	7.50%*	13.30%

*****

The Milliman model's* ***20-year annualized geometric median is 7.46%**.*

Based on capital market outlook for real returns developed by credentialed investment professionals at Milliman, including assumed inflation of 2.35%.

We compared the expected return to the range of returns developed using a mean-variance model and the capital market assumptions developed by Milliman to a similar analysis presented by at the June OIC meeting that we understood was developed collaboratively by Oregon State Treasury staff and their two investment consultants, Meketa and Aon. These capital market outlooks were developed based on year-end 2022 market conditions. In addition, we modeled the returns projected for the OIC's asset allocation using the 10-year capital market outlook from the 2022 Survey of Capital Market Assumptions published by Horizon Actuarial Services in August 2022. We understand the Horizon survey reflects inputs from 40 different firms who participated in the survey and reflects their capital market outlook models from the first half of 2022. Returns shown below are net of passive investment expenses. In our modeling, we assumed that expenses incurred for active management are offset by additional returns gained from active management.

The table below compares the median of expected annualized returns calculated on a geometric basis for regular accounts based on Milliman's analysis detailed above, the OIC capital market outlook, and the consensus outlook from the Horizon survey. Note that the combination of significant recent changes in financial market and the time lag since the Horizon survey information was collected, as discussed below, helps explain why the Horizon survey results are lower than the other data points shown in the following table.

	OIC	Horizon	Milliman 10-year	Milliman 20-year
Median annualized geometric return	7.6%	6.55%	7.11%	7.46%
Assumed inflation	2.5%	2.46%	2.40%	2.35%
Timeframe modeled	20 years	10 years	10 years	20 years

It is common practice among public pension systems for the investment return assumption to be a multiple of either a tenth- or quarter-point (i.e., 0.10% or 0.25%). The lack of additional precision in selected assumptions is justified and reasonable due to the inability to have precise knowledge in advance regarding future investment returns. The median annualized return for the 20-year outlook from the OIC (reflecting input from their advisors Meketa and Aon) was 7.6%. The median annualized return for a 20-year time horizon based on Milliman's real return capital market outlook was 7.11% over 10 years and 7.46% over 20 years. Those model outputs are based on the forward-looking return expectations of the investment professionals from those firms and before any potential active management adjustments. When the last experience study was conducted as of December 31, 2020, similar forward-looking 20-year outlooks from the OIC and Milliman were 6.6% and 6.27%, respectively. The significant change in model results was primarily driven by changes in the financial markets during 2022, as described below.

Both the OIC and Milliman models use capital market assumptions developed shortly after the end of 2022 and reflect the significant market losses during 2022 in the underlying starting point. Our understanding is the relatively higher interest rates, lower equity prices and lower equity P/E ratios as of December 31, 2022 compared to the prior iteration of this analysis at December 31, 2020 led to the significant increase in the forward-looking expected real returns in many asset classes, based upon the analytical framework of both models. Note that the Horizon survey results were based on expectations in the first half of 2022. Since fixed income yields increased and equity markets declined significantly in 2022, we expect the next annual update of the Horizon survey will produce higher expected future returns.

Actual future investment returns are not determined by the assumed rate of return. Selecting an assumed return materially above the 50th percentile implies a materially greater than 50% chance of actual long-term future experience falling short of the selected assumption. Conversely, selecting an assumed return below the 50th percentile implies a greater likelihood that actual long-term experience will exceed the long-term assumption.

While the most recent update of capital market outlooks reviewed produce median expectations greater than the current investment return assumption, we recommend not increasing the investment return assumption from the current level of 6.90%. Prior to this study, there had been a consistent pattern of lower forward-looking return expectations that evolved over the last decade. While 2022 market experience reversed much of that in the framework of capital-market models, it remains to be seen whether this significant change will be long-lasting or temporary. In particular, if 2023 investment returns are strong, some of this change in forward-looking expectations may unwind prior to the date the adopted assumption is used in the next rate-setting actuarial valuation. Finally, under Actuarial Standards of Practice, it is acceptable to adopt assumptions that reflect a margin for adverse deviation. Given the current environment, maintaining an assumption below the 50th percentile of forward-looking capital market outlooks would be reasonable and prudent.

Variable Account

The variable account is invested entirely in global equity. As a result, the annual expected arithmetic (single-year) return is higher than for the regular account, but so is the standard deviation. The result is a long-term compounded geometric average annual return similar to the regular account, based on Milliman's capital market outlook. Prior to the December 31, 2012 valuation, the compound geometric variable account return was assumed to be higher than the regular account return. Beginning with that valuation, the variable account return assumption was set equal to the regular account return assumption, as the relationship between the various asset classes no longer warranted such a distinction in our opinion. **We recommend continuing to set the variable account return assumption equal to the regular account return assumption.**

Administrative Expenses

In accordance with GASB Statements No. 67 and No. 68, the long-term investment return assumption is gross of administrative expenses. To account for expected administrative expenses, we develop an assumed dollar amount, based on recent and expected future experience, to add to the normal cost in the calculation of contribution rates with the goal of funding administrative expenses via the normal cost rate each year as they occur. Continuing with the practice introduced in the prior experience study, we recommend developing a total system-wide dollar amount (Tier One/Tier Two and OPSRP) and then allocating the assumed administrative expense to normal cost for each tier in proportion to payroll.

The total assumed administrative expenses in the December 31, 2021 valuation was $59 million per year. A summary of recent actual administrative expenses for the system is shown below.

	System-Wide (Tier One/Tier Two + OPSRP) Pension Administrative Expense		
Year	Dollar Amount ($ millions)	Percentage of Beginning of Year Assets	Percentage of Projected Payroll
2018	$36.7	0.06%	0.36%
2019	$44.5	0.07%	0.41%
2020	$56.5	0.09%	0.49%
2021	$59.9	0.09%	0.50%
2022	$61.5	0.08%	0.48%

Based on discussion with PERS staff, we understand the increase recent was driven largely by work required for the implementation of Senate Bill 1049, but that this higher level of expenses is expected to persist in the near future as the cost of modernization efforts replace some of the Senate Bill 1049 implementation costs that will wind down. As a result, **we recommend setting the assumed system-wide administrative expenses for the December 31, 2022 and December 31, 2023 actuarial valuations at $64 million.** This amount reflects recent historical experience with an expectation of inflation-related growth for the next two years.

RHIPA Subsidy Cost Trend Rates

Trend rates are used to estimate increases in the employer cost of the RHIPA subsidy. Based on analysis performed by Milliman's healthcare actuaries, we recommend updates detailed below to the healthcare cost trend assumption. The healthcare cost trends are based on the Society of Actuaries (SOA) periodically updated report on long-term medical trends. That report includes detailed research performed by a committee of economists and actuaries (including a Milliman representative) utilizing the "Getzen Model" named after the professor who developed the model. We believe that the research and the model are fundamentally and technically sound and advance the body of knowledge available to actuaries to project long-term medical trends more accurately. Milliman uses the Getzen Model as the foundation for the trend that we recommend to our clients for OPEB valuations. The model produces long-range trend assumptions built on long-term relationships between certain key economic factors.

Note that the following chart shows sample rates of the assumptions developed for RHIPA subsidy cost trends. A full chart can be found in the appendices.

Year	December 31, 2020 and 2021 Valuations	December 31, 2022 and 2023 Valuations
2021	5.9%	N/A
2022	5.5%	N/A
2023	5.1%	6.6%
2024	5.0%	7.0%
2025	4.9%	6.4%
2026	4.9%	5.7%
2027	4.8%	5.1%
2028	4.7%	4.9%
2029	4.7%	4.8%
2030	4.7%	4.6%
2035	4.7%	4.2%
2040	4.8%	4.2%
2045	4.8%	4.2%
2050	4.8%	4.2%
2060	4.7%	4.3%
2070	4.2%	4.0%
2074+	3.9%	3.8%

4. Demographic Assumptions

Overview

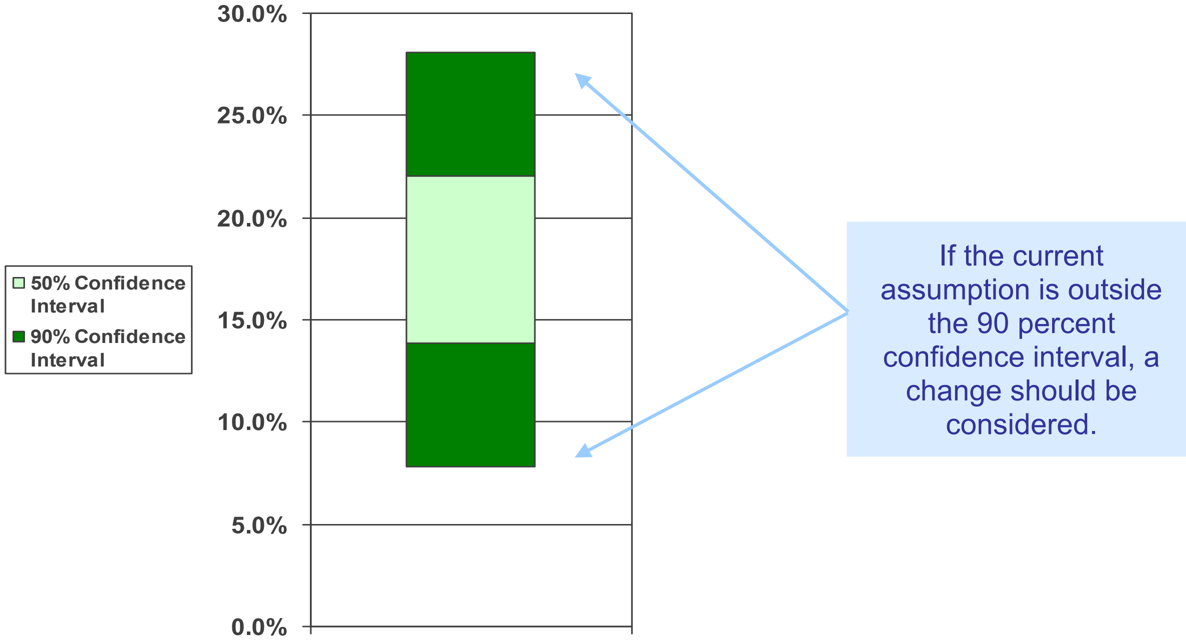
Actuarial Standard of Practice (ASOP) No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations,* provides guidance on selecting demographic assumptions used in measuring obligations under defined benefit pension plans. The general process for recommending demographic assumptions as defined in ASOP No. 35 is as follows:

- Identify the types of assumptions,
- Consider the relevant assumption universe,
- Consider the assumption format,
- Select the specific assumptions, and
- Evaluate the reasonableness of the selected assumption.

The purpose of the demographic experience study is to compare actual experience against expected experience based on the assumptions used in the most recent actuarial valuation. The observation period for most assumptions analyzed in this study is January 1, 2017 through December 31, 2022, and the current assumptions are those adopted by the Board for the December 31, 2021 actuarial valuation. If the actual experience differs significantly from the overall expected experience, or if the pattern of actual experience by age, sex, or duration does not follow the expected pattern, new assumptions are considered.

For several assumptions shown below, confidence intervals have been used to measure observed experience against current assumptions to determine the reasonableness of the assumption. The floating bars represent the 50 percent and 90 percent confidence intervals around the observed experience. The 90 percent confidence interval represents the range around the observed rate that could be expected to contain the true rate during the period of study with 90 percent probability. The size of the confidence interval depends on the number of observations and the likelihood of occurrence. If an assumption is outside the 90 percent confidence interval and there is no other information to explain the observed experience, a change in assumption should be considered. A change may also be considered when the observed experience is within the 90 percent confidence interval, depending on the specific situation. A sample graph with confidence intervals is shown below:

Overview (continued)



The demographic assumptions used for the December 31, 2021 actuarial valuation and the recommended assumptions for the December 31, 2022 and December 31, 2023 actuarial valuations are shown in detail in the following sections.

A summary of the changes recommended to the Board are as follows:

- Most significant recommended updates: Increase the individual member salary increase assumption's merit/longevity component for all member categories based on observations of the last ten years of experience. The individual member salary increase assumption consists of the sum of inflation, real wage growth, and merit/longevity components, with the latter varying by member. Also, assume additional 2% increases in each of the next two years above the updated long-term assumption to estimate the system-wide effect of recently announced bargaining agreements.
- Adjust the scaling factor for non-retired Police & Fire males and make a routine update to the mortality improvement scale, which is based on 60-year unisex average Social Security experience.
- Adjust retirement rates for certain member categories and service bands to more closely align with recent and expected future experience and eliminate the assumption for future Tier One/Tier Two retirees electing a partial lump sum.
- Update pre-retirement termination of employment assumptions for two member categories.
- Lower assumed rates of ordinary (non-duty) disability and general service duty disability incidence; increase assumed rates of police & fire duty disability incidence.
- Adjust the Tier One unused vacation cash out assumption for two member categories.
- Adjust the Tier One/Tier Two unused sick leave assumption for six of the nine member categories to reflect recently observed experience.
- Decrease the likelihood of program participation for non-disabled retirees in the RHIA retiree healthcare program.
- Decrease the RHIPA likelihood of program participation assumption for most service bands.

The recommended assumptions, in our opinion, were selected in a manner consistent with the requirements of ASOP No. 35.

Mortality

Mortality rates are used to project the length of time benefits will be paid to current and future retirees and beneficiaries. The selection of a mortality assumption affects plan liabilities because the estimated present value of retiree benefits depends on how long the benefit payments are expected to continue. There are statistically credible differences in the mortality rates among non-disabled retired members, disabled retired members, and non-retired members. As a result, experience for each of these groups is reviewed independently and each group receives its own mortality assumptions.

A summary of the current assumed mortality rates and recommended changes is shown below:

Assumption	Recommended December 31, 2020 and 2021 Valuations	Recommended December 31, 2022 and 2023 Valuations
Non-Disabled Annuitant Mortality	**Pub-2010 Non-Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**	**Pub-2010 Non-Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**
▪ School District male	Blend 80% Teachers and 20% General Employees, no set back	No change
▪ Other General Service male (and male beneficiary)	General Employees, set back 12 months	No change
▪ Police & Fire male	Public Safety, no set back	No change
▪ School District female	Teachers, no set back	No change
▪ Other General Service female (and female beneficiary)	General Employees, no set back	No change
▪ Police & Fire female	Public Safety, set back 12 months	No change
Disabled Retiree Mortality	**Pub-2010 Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**	**Pub-2010 Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**
▪ Police & Fire male	Blended 50% Public Safety, 50% Non-Safety, no set back	No change
▪ Other General Service male	Non-Safety, set forward 24 months	No change
▪ Police & Fire female	Blended 50% Public Safety, 50% Non-Safety, no set back	No change
▪ Other General Service female	Non-Safety, set forward 12 months	No change
Non-Annuitant Mortality	**Pub-2010 Employee, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**	**Pub-2010 Employee, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**
▪ School District male	125% of same table and set back as Non-Disabled Annuitant assumption	No change
▪ Other General Service male	115% of same table and set back as Non-Disabled Annuitant assumption	No change

Mortality (*continued*)

Assumption	Recommended December 31, 2020 and 2021 Valuations	Recommended December 31, 2022 and 2023 Valuations
▪ Police & Fire male	100% of same table and set back as Non-Disabled Annuitant assumption	125% of same table and set back as Non-Disabled Annuitant assumption
▪ School District female	100% of same table and set back as Non-Disabled Annuitant assumption	No change
▪ Other General Service female	125% of same table and set back as Non-Disabled Annuitant assumption	No change
▪ Police & Fire female	100% of same table and set back as Non-Disabled Annuitant assumption	No change

Mortality Improvement Scale

Mortality rates are expected to continue to decrease in the future, and the resulting increased longevity should be anticipated in the actuarial valuation. For Oregon PERS, this is done through the use of a generational mortality assumption, which combines a base mortality table and a separate mortality improvement scale to project the pace of future life expectancy increases. The base mortality table defines the mortality rates assumed at each age in a single specific calendar year, while the mortality improvement scale projects how quickly the mortality rates at each individual age are assumed to improve in future calendar years.

The current mortality improvement scale is based on 60-year unisex average mortality improvement rates by age, calculated using Social Security data through 2017, which was the most recent publicly available data at the time of the prior experience study. Our recommendation is to update the mortality improvement scale based on Social Security data through 2019.

Note that Social Security data has been published through 2020, but we chose not to reflect the most recent year in setting our forward-looking assumption as the effect of the COVID-19 pandemic is significant in the 2020 data and would skew the analysis to an extent not expected to be predictive of future mortality. The effect of the pandemic on long-term mortality rates is unknown and is a subject of significant uncertainty among experts who attempt to model such experience. As one example, the Retirement Plan Experience Committee (RPEC) of the Society of Actuaries chose to suspend its usual practice of providing an annual update to their “MP” mortality improvement scale once the update would have been due to reflect 2020 experience. As noted in their 2022 report, RPEC “does not believe it would be appropriate to incorporate, without adjustment, the substantially higher rates of mortality experience from 2020 …to forecast future mortality.” Similarly, for this study we believe it is best to reflect Social Security experience only through 2019 when determining an assumption for future mortality improvement.

In our professional opinion, the recommended mortality improvement scale meets the *“best actuarial information on mortality at the time”* standard mandated by ORS 238.607. A full listing of the recommended mortality improvement scale rates is included in the appendix.

Non-Disabled Annuitant Mortality

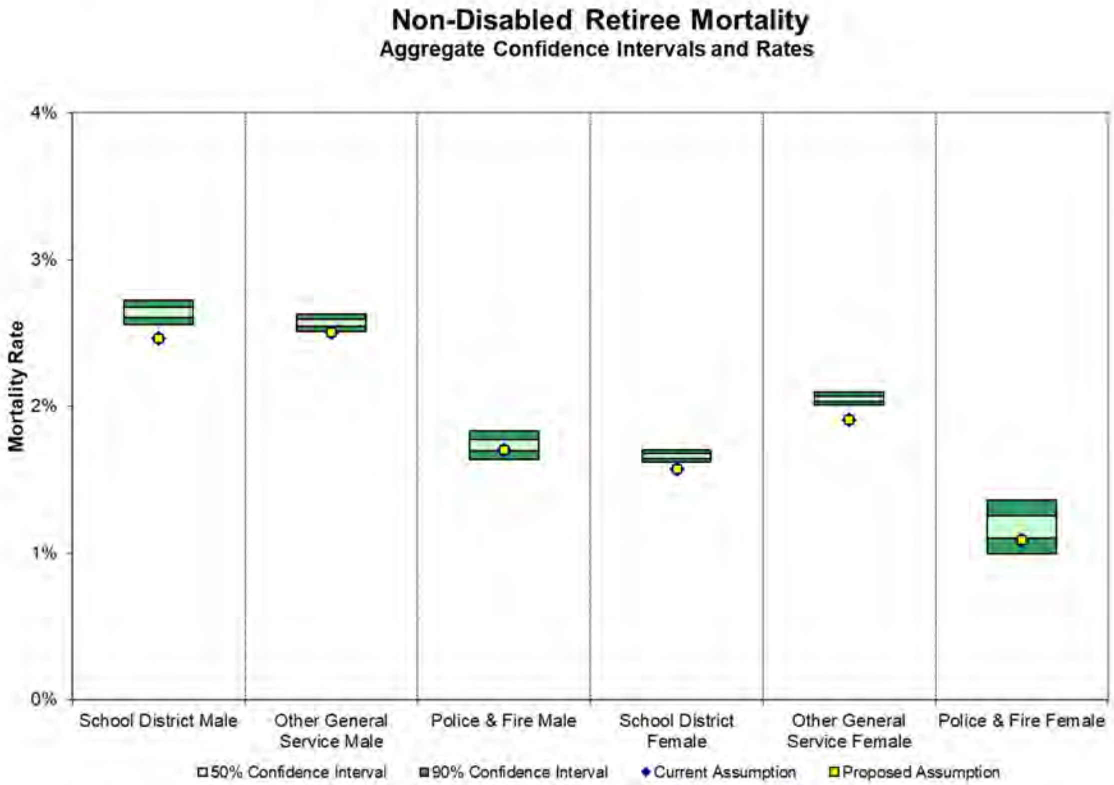
Mortality assumptions for non-disabled retired members are separated into six groups based on employment category and gender (school district males, school district females, police & fire males, police & fire females, other general service males, other general service females). Beneficiaries were combined with non-school district general service members of the same gender.

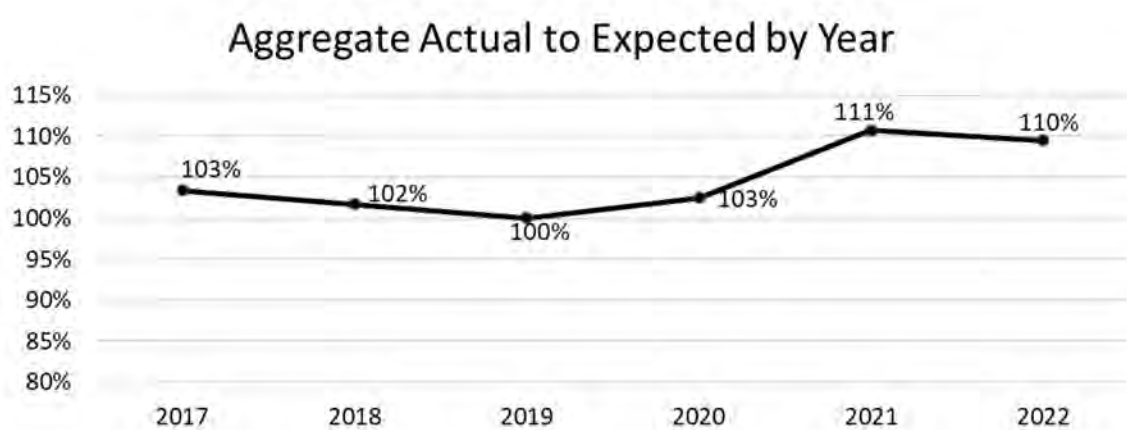
Mortality (*continued*)

To assist in review of the current mortality assumptions' reasonability, we calculated the ratio of actual deaths to expected deaths (A/E ratio) during the experience study's data observation period for each of the six groups described above. In the prior study, mortality assumptions were targeted to achieve an A/E ratio of approximately 100 percent on a benefits-weighted basis. In the current study, A/E ratios for all groups were greater than 100 percent, and the aggregate mortality rate experience for several groups are outside the 90% confidence interval. Typically, this might lead us to recommended revised assumptions. However, closer review of the experience showed that the higher A/E ratios were primarily driven by the most recent years of the study period, as shown in the "Aggregate Actual to Expected by Year" graph below. The elevated mortality rates in recent years may be largely tied to the pandemic and its aftereffects (such as consequences of deferred screenings and preventative care). While the long-term mortality effects of the pandemic are unknown, we recommend leaving the current assumptions for these groups unchanged rather than responding to recent higher mortality rates that may not be predictive of expected long-term future experience.

	Benefits-Weighted ($1,000s of monthly benefits)		Current Assumption		Recommended Assumption	
	Exposures	Actual Deaths	Expected Deaths	A/E Ratio	Expected Deaths	A/E Ratio
School District male	335,602	8,858	8,270	107%	8,264	107%
Other General Service male (and male beneficiary)	595,833	15,306	14,921	103%	14,916	103%
Police & Fire male	198,393	3,442	3,379	102%	3,379	102%
School District female	551,126	9,149	8,680	105%	8,678	105%
Other General Service female (and female beneficiary)	585,155	12,008	11,164	108%	11,162	108%
Police & Fire female	26,627	314	290	108%	290	108%

Mortality (*continued*)





We recommend continued use of the Pub-2010 base mortality tables (published by the Society of Actuaries in January 2019) as the underlying base mortality tables for generational mortality assumptions in the current study. The Pub-2010 mortality tables reflect observed experience from calendar years 2008-2013, with 2010 as the middle of the observation period. The tables are based exclusively upon data gathered from large public sector pension systems (including Oregon PERS) for the first modern study specific to the mortality experience of US public pension plans.

Mortality (*continued*)

In the Pub-2010 study, different gender-distinct base mortality tables were published for three separate employee and retiree categories: teachers, public safety personnel, and general employees. When selecting a base table to match the mortality rates of Oregon PERS, we started from the category table most applicable to the portion of the population under consideration, and then adjusted, if needed, to more closely align with recent Oregon PERS experience. At times we use a “set back” to adjust the mortality rates. A “set back” of 12 months, for example, treats all members as if they were 12 months younger than they really are when applying the mortality table, which results in lower assumed mortality rates and longer life expectancy for members.

We do not recommend updating the assumptions for non-disabled retiree mortality.

A summary of the current and recommended non-disabled retiree mortality assumptions is shown below:

	Recommended December 31, 2020 and 2021 Valuations	Recommended December 31, 2022 and 2023 Valuations
Basic Table	**Pub-2010 Non-Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**	**Pub-2010 Non-Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**
School District male	Blend 80% Teachers and 20% General Employees, no set back	No change
Other General Service male (and male beneficiary)	General Employees, set back 12 months	No change
Police & Fire male	Public Safety, no set back	No change
School District female	Teachers, no set back	No change
Other General Service female (and female beneficiary)	General Employees, no set back	No change
Police & Fire female	Public Safety, set back 12 months	No change

Disabled Retiree Mortality

Disabled members are expected to experience higher mortality rates at a given age than non-disabled retired members. As a result, disabled member mortality experience is analyzed separately from that of non-disabled annuitants and beneficiaries. We recommend continued use of the Pub-2010 Disabled Retiree base mortality tables and the 60-year average unisex Social Security mortality improvement scale as the starting point for setting disabled mortality assumptions in the current study. This will maintain a consistent basis for disabled and non-disabled retiree assumptions, as has been the case in prior studies.

As in the most recent study, we recommend applying adjustments to the underlying Pub-2010 Disabled Retiree mortality tables where needed to more closely match assumptions to recent Oregon PERS experience on a benefits-weighted approach.

Mortality (*continued*)

	Benefits-Weighted ($1,000s of monthly benefits)		Current Assumption		Recommended Assumption	
	Exposures	Actual Deaths	Expected Deaths	A/E Ratio	Expected Deaths	A/E Ratio
Disabled Police & Fire male	12,825	315	287	110%	287	110%
Disabled General Service male	15,677	714	681	105%	681	105%
Disabled Police & Fire female	2,686	57	44	131%	44	131%
Disabled General Service female	23,128	786	711	110%	711	110%

Prior to the publication of the Pub-2010 tables, disabled police & fire members were not rated separately due to the relatively small amount of experience for such members. However, the Pub-2010 report includes tables developed specifically for disabled police & fire members based on statistically credible national data sets for these populations, so we were able to refine this assumption first effective with the 2018 Experience Study. Using a benefits-weighted approach, the selected variations of the Pub-2010 Disabled Retiree mortality tables fell within a 90 percent confidence interval around observed experience for all groups except disabled general service females. For similar reasons to described above related to non-disabled annuitant mortality, in this study we do not recommend changing the assumption to reflect this higher recent mortality experience.

Mortality (*continued*)

A summary of current and recommended disabled retiree mortality assumptions is shown below:

	Recommended December 31, 2020 and 2021 Valuations	Recommended December 31, 2022 and 2023 Valuations
Basic Table	**Pub-2010 Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**	**Pub-2010 Disabled Retiree, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**
Disabled Police & Fire male	Blended 50% Public Safety, 50% Non-Safety, no set back	No change
Disabled General Service male	Non-Safety, set forward 24 months	No change
Disabled Police & Fire female	Blended 50% Public Safety, 50% Non-Safety, no set back	No change
Disabled General Service female	Non-Safety, set forward 12 months	No change

Non-Annuitant Mortality

The non-annuitant mortality assumption applies to active members and dormant members (those members who have terminated employment but have a vested right to a future benefit). As with the other mortality assumptions, we recommend continued use of the Pub-2010 base mortality tables and the 60-year average unisex Social Security mortality improvement scale as the starting point for setting mortality assumptions for this group. This will maintain a consistent basis for mortality assumptions, as has been the case in prior studies.

For a given age and gender, an employed person is on average less likely to die in a given year than a retired person of the same age and gender. We recommend using separate Pub-2010 Non-Disabled Retiree and Pub-2010 Employee mortality tables for non-disabled annuitants and non-annuitants, respectively. Each Non-Disabled Retiree table published by the SOA has a corresponding Employee table, which reflects differences in the anticipated mortality rates for the retiree and employee populations.

For each population subgroup, we recommend using the Pub-2010 Employee base mortality table (including adjustments) that corresponds to the Non-Disabled Retiree table selected for that subgroup, and then adjusting the mortality rates with a scaling factor if needed to better match recent Oregon PERS experience. For example, mortality for non-annuitant General Service females will be assumed to follow the Pub-2010 Employee base mortality table for the general employees job category, with no set back, and will be projected generationally using the Social Security unisex mortality improvement scale (all of which parallels treatment for the corresponding retiree group), and will then be scaled by a factor of 125% to better match the aggregate Oregon PERS-specific experience of the relevant employee group.

The relative values of corresponding Pub-2010 Employee and Non-Disabled Retiree base mortality tables were developed by the SOA based on a much larger population than that of Oregon PERS. As a result, we believe it is preferable to reflect that relationship as the starting point when developing non-annuitant versions of the recommended non-disabled annuitant mortality tables for Oregon PERS. The analysis below compares recent experience in aggregate for the non-annuitant population under this approach. This comparison was done on a headcount-weighted basis only since the final level of retirement benefits cannot be predicted with certainty for current active members.

Mortality (continued)

	Headcount-Weighted		Current Assumption		Recommended Assumption	
	Exposures	Actual Deaths	Expected Deaths	A/E Ratio	Expected Deaths	A/E Ratio
Total Non-Annuitant Experience	1,314,632	1,879	1,560	120%	1,584	119%

In aggregate, using the recommended Pub-2010 Employee base mortality tables corresponding to the relevant recommended Non-Disabled Retiree mortality tables for each subgroup and adjusted as noted below produces an A/E ratio of 120%. For a headcount-weighted analysis, we prefer an A/E ratio near 110% to approximate an outcome similar to targeting 100 percent on a benefits-weighted basis. Despite the A/E ratio of 120 percent, we are not recommending significant changes to the non-annuitant mortality assumptions. As discussed above, we reviewed the effect of 2020 and later experience on our analysis, given that the pandemic and subsequent events may mean these results are not an appropriate expectation for a forward-looking assumption. We ultimately included 2020-2022 experience in our analysis but lean toward making minimal adjustments to our assumptions based on higher recent death rates. The only group for which we are recommending an updated assumption is police & fire males, which were significantly below the 90% confidence interval.

A summary of the current and recommended non-annuitant mortality assumptions is shown below:

	Recommended December 31, 2020 and 2021 Valuations	Recommended December 31, 2022 and 2023 Valuations
Basic Assumption	**Pub-2010 Employee, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**	**Pub-2010 Employee, Sex Distinct, Generational Projection with Unisex Social Security Data Scale**
School District male	120% of Employee table with same job category and set back as Non-Disabled Retiree assumption	No change
Other General Service male	115% of Employee table with same job category and set back as Non-Disabled Retiree assumption	No change
Police & Fire male	100% of Employee table with same job category and set back as Non-Disabled Retiree assumption	125% of Employee table with same job category and set back as Non-Disabled Retiree assumption
School District female	100% of Employee table with same job category and set back as Non-Disabled Retiree assumption	No change
Other General Service female	125% of Employee table with same job category and set back as Non-Disabled Retiree assumption	No change
Police & Fire female	100% of Employee table with same job category and set back as Non-Disabled Retiree assumption	No change

Retirement Assumptions

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

- Retirement from active status
- Probability a Tier One/Tier Two member will elect a lump sum option at retirement
- Percentage of members who elect to purchase credited service at retirement
- Probability a member will remain an Oregon resident during retirement

Retirement from Active Status

Members are eligible to retire as early as age 55 (50 for police & fire members), or earlier for Tier One/Tier Two if the member has 30 years of service. In our analysis, we have found significant differences in the retirement patterns based on length of service, employment category (general service or police & fire), and current eligibility for immediate unreduced benefits.

A summary of the early, normal, and unreduced retirement dates under the plan are as follows:

Employment Category	Tier	Normal Retirement Age	Early Retirement Age	Unreduced Retirement
General Service	1	58	55	30 years of service
General Service	2	60	55	30 years of service
General Service	OPSRP	65	55	Age 58 with 30 years
Police & Fire	1 and 2	55	50	30 years of service, or age 50 with 25 years of service
Police & Fire	OPSRP	60	50	Age 53 with 25 years
State Judiciary	N/A	65	60	60 if Plan B; N/A if Plan A

Structure for Retirement Rates

The structure of the PERS retirement rate assumption separates rates by job classification and by service level. General service rates differ across three service bands: less than 15 years, 15 to 29 years, and 30 or more years of service. Each service band has different assumptions for school districts versus all other general service members. Police & fire rates employ the following three service bands: less than 13 years, 13 to 24 years, and 25 or more years of service.

The service band structure anticipates that many members' retirement decisions will contemplate the amount of the retirement benefit and the affordability of retirement.

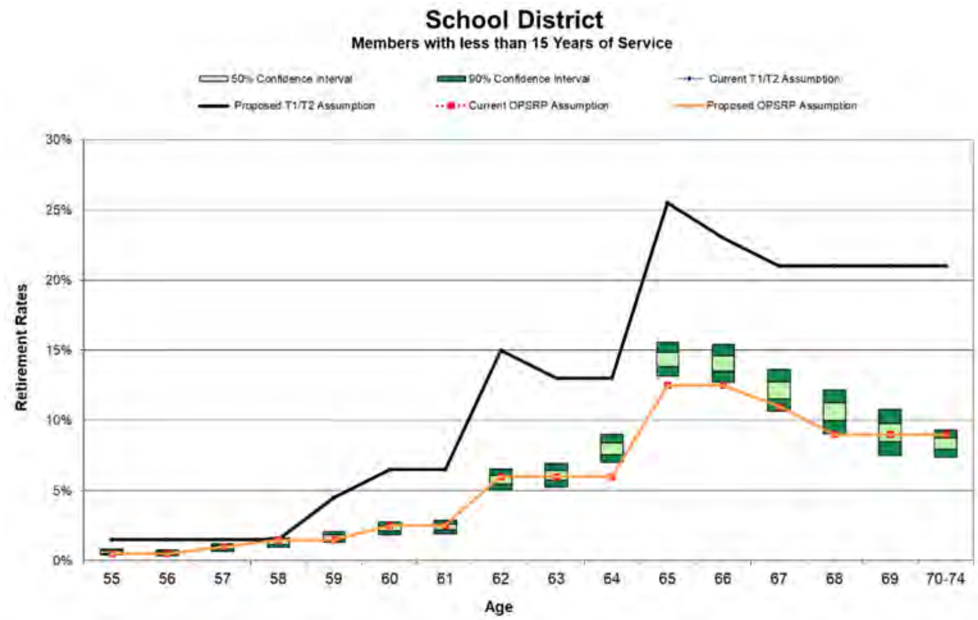
Retirement Assumptions (*continued*)

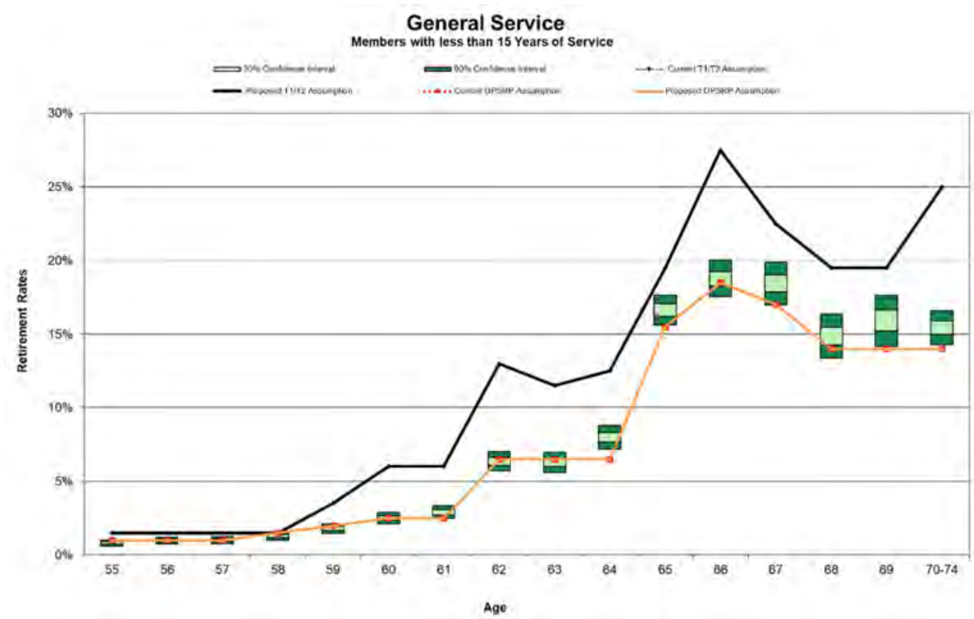
School District and General Service Retirement Rates

Members with Less Than 15 Years of Service

Retirement decisions by members with less than 15 years of service are likely to be heavily influenced by the availability of resources other than PERS benefits, including Social Security, prior employment, spousal benefits, and savings.

The following charts show the current assumed rates of retirement, the confidence interval around observed experience, and the recommended retirement rate assumption for school district and general service members retiring with less than 15 years of service. Given that all new entrants since August 2003 are in OPSRP, most recent experience in this service band is for OPSRP members.



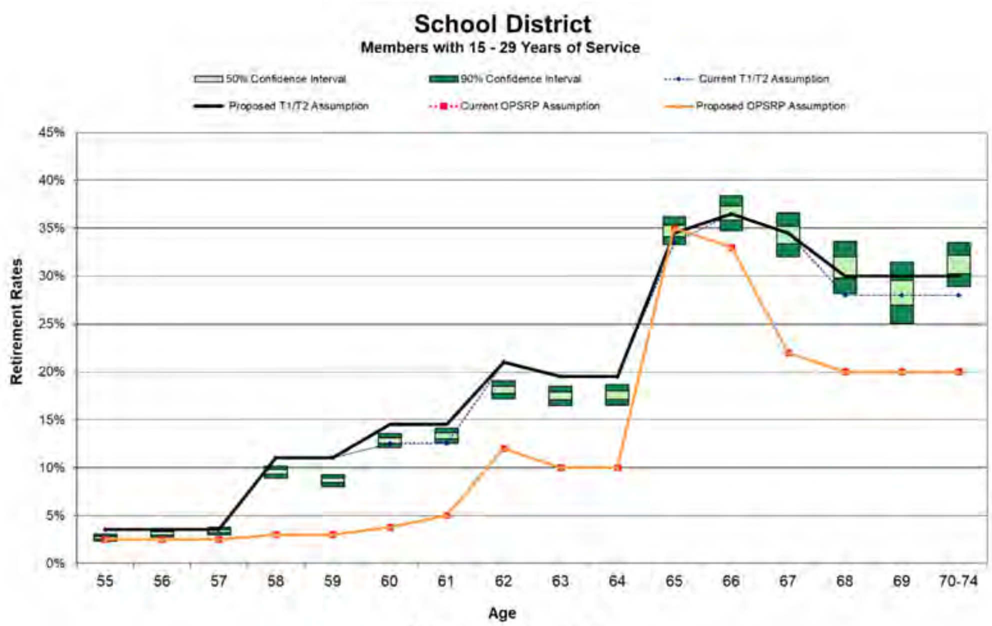


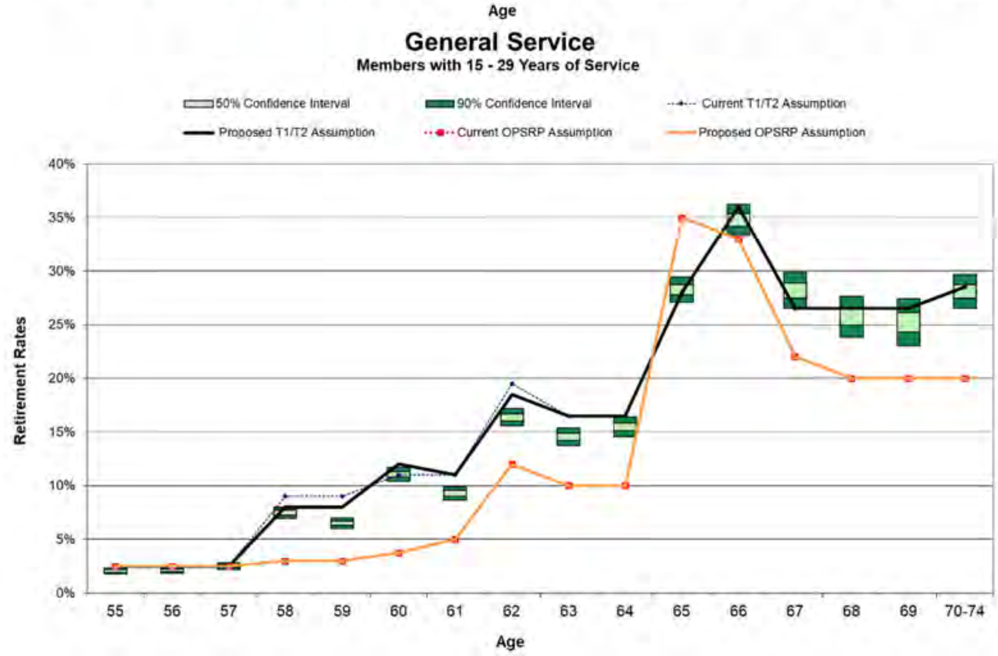
Retirement Assumptions (*continued*)

Members with 15 to 29 Years of Service

Retirement decisions by members with 15 to 29 years of service are likely to be influenced by the structure of PERS benefits as well as the availability of other resources, including Social Security, prior employment, spousal benefits, and savings.

The following charts show the current assumed rates of retirement, the confidence interval around observed experience, and the recommended retirement rate assumption for school district and general service members retiring with 15 to 29 years of service. Most recent experience for members in this service band is for Tier One and Tier Two members, but a growing number of OPSRP members (whose service will be in the lower part of this range) are represented.



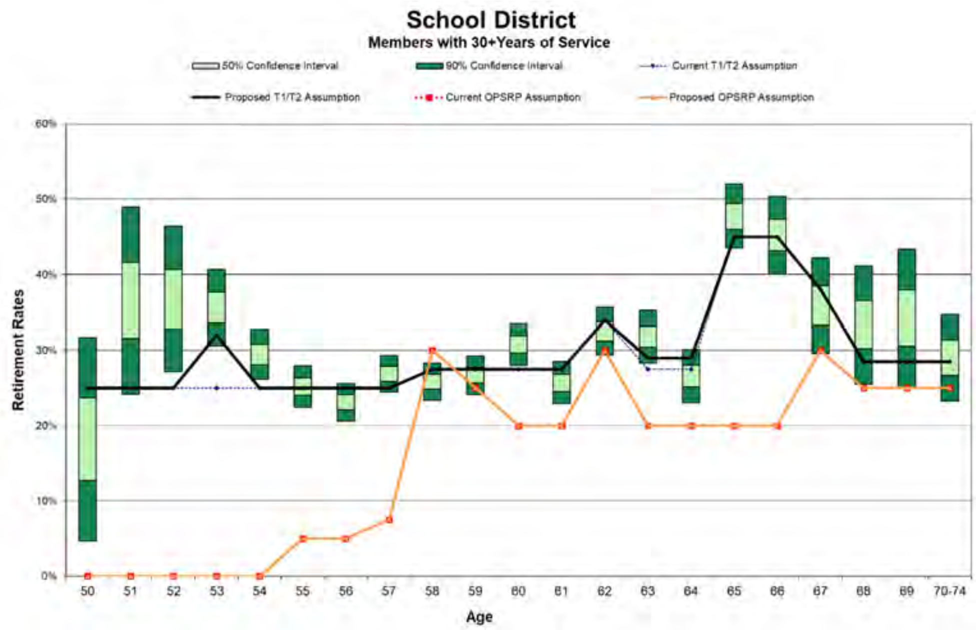


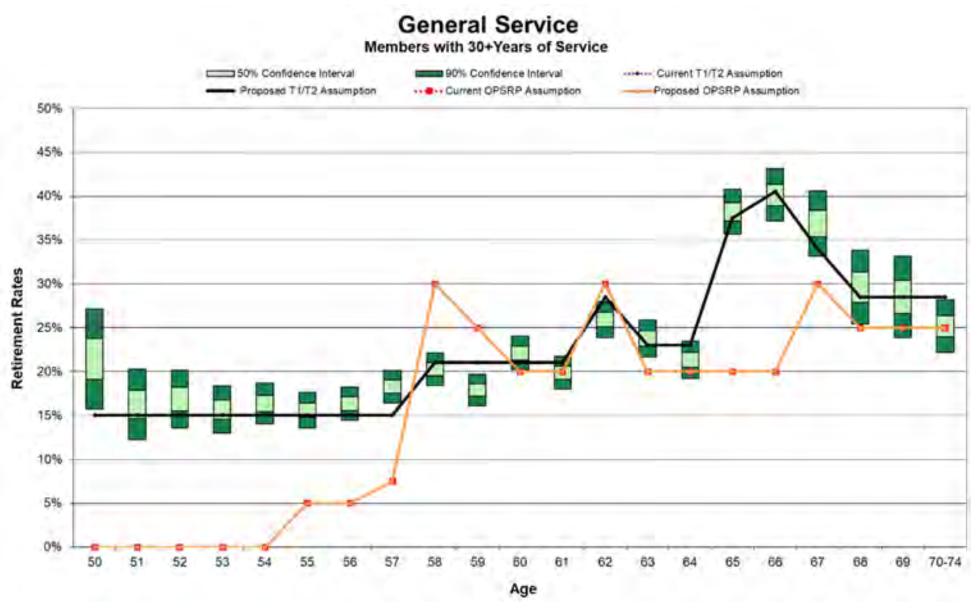
Retirement Assumptions (*continued*)

Members with 30 or More Years of Service

Tier One/Tier Two members with 30 or more years of service are eligible for unreduced PERS benefits at any age (OPSRP members are first eligible at age 58). As a result, retirement rates at all ages are relatively high, with a spike when Social Security benefits become available.

The following charts show the current assumed rates of retirement, the confidence interval around observed experience and the recommended retirement rate assumption for school district and other general service members retiring with 30 or more years of service. All experience is for Tier One members. OPSRP assumptions are set based on professional judgment regarding the expected relationship to Tier One/Tier Two experience given the different plan provisions between tiers.





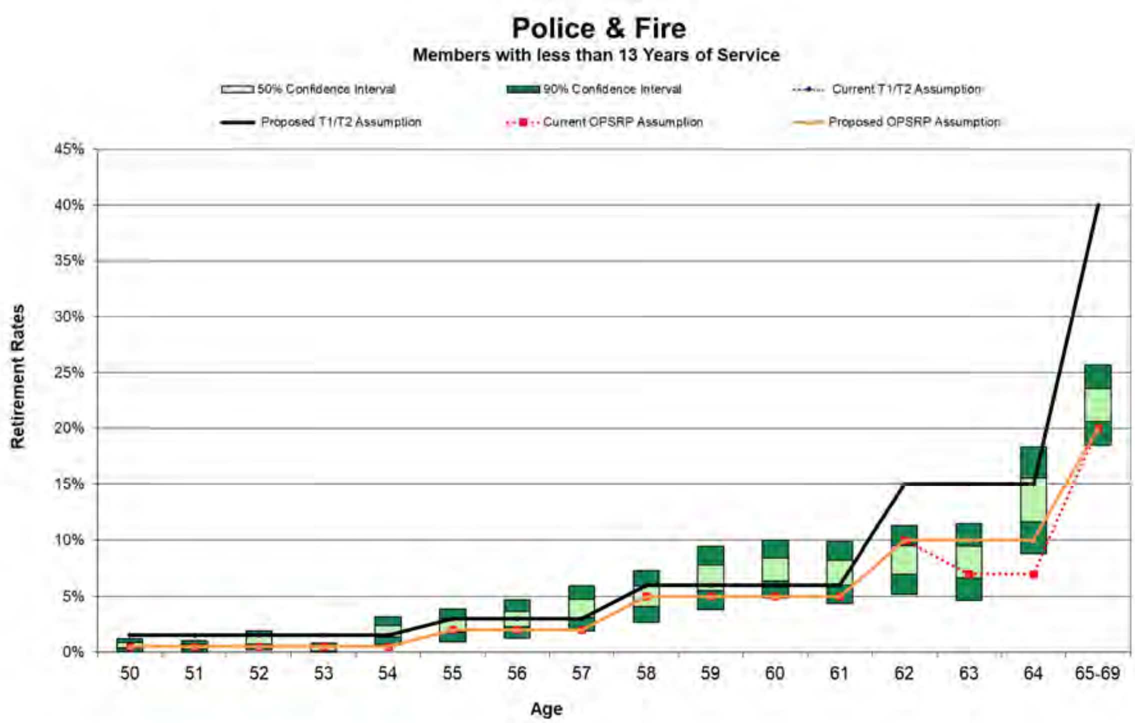
Retirement Assumptions (*continued*)

Police & Fire

Members with Less Than 13 Years of Service

The retirement assumption for police & fire members differs for members retiring with less than 13 years of service, those retiring with 13 to 24 years of service, and those retiring with 25 or more years of service. Retirement decisions by members with less than 13 years of service are likely to be heavily influenced by the availability of resources other than PERS benefits, including Social Security, prior employment, spousal benefits, and savings.

The following graph shows the current assumed rates of retirement, the confidence interval around observed experience and the recommended retirement rate assumption for police & fire members retiring with less than 13 years of service. Given that all new entrants since August 2003 are in OPSRP, almost all recent experience in this service band is for OPSRP members.

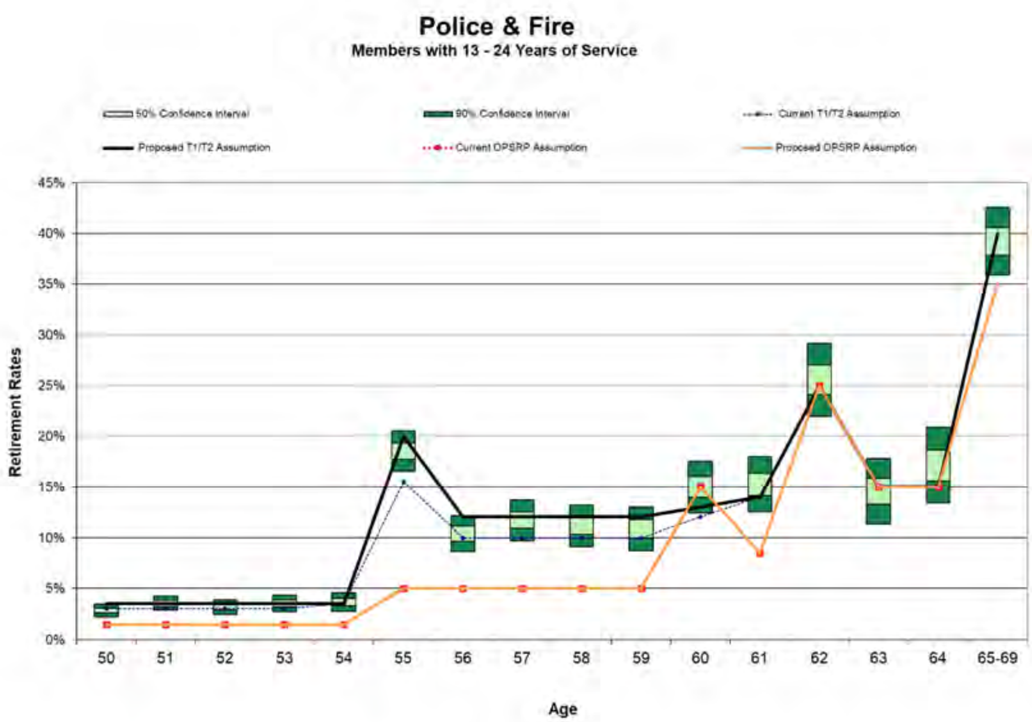


Retirement Assumptions (*continued*)

Members with 13 to 24 Years of Service

Retirement rates for members with 13 to 24 years of service are likely to be influenced by the structure of PERS benefits as well as the availability of other resources, including Social Security, prior employment, spousal benefits, and savings.

The following chart shows the current assumed rates of retirement, the confidence interval around observed experience, and the recommended retirement rate assumption for police & fire members retiring with 13 to 24 years of service. Most recent experience for members in this service band is for Tier One and Tier Two members, but a growing number of OPSRP members (whose service will be in the lower part of this range) are represented.

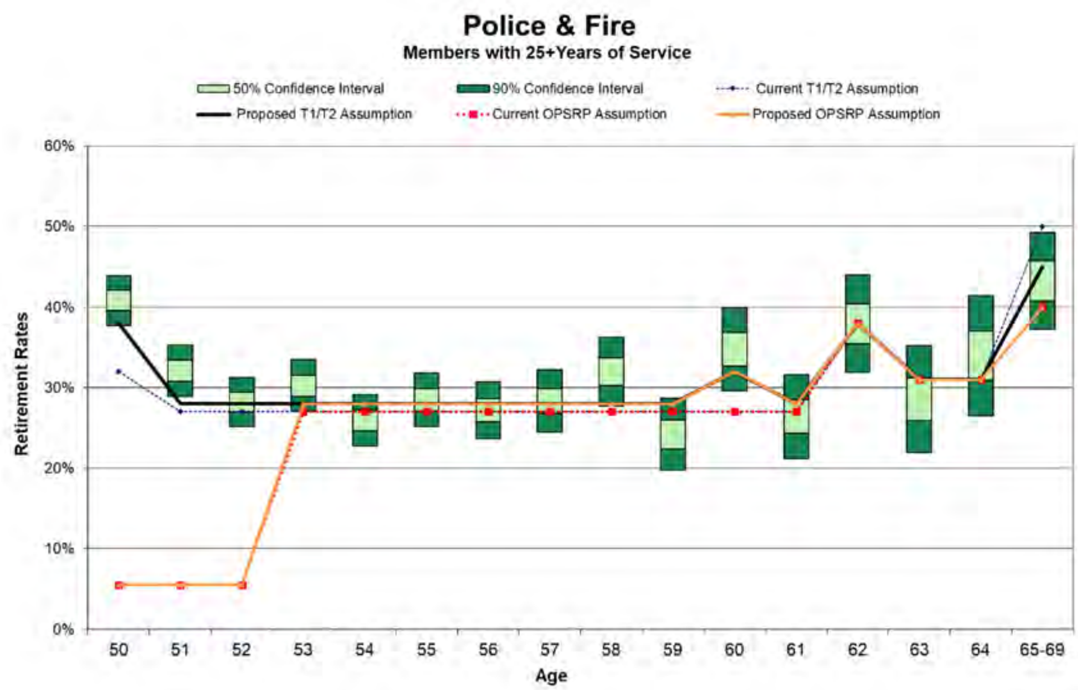


Retirement Assumptions (*continued*)

Members with 25 or More Years of Service

Tier One/Tier Two police & fire members with 25 or more years of service can retire immediately starting at age 50 (age 53 for OPSRP) with unreduced retirement benefits. As a result, retirement rates at all ages are relatively high, with a spike at first eligibility for unreduced benefits, and another increase when Social Security benefits first become available.

The following chart shows the current assumed rates of retirement, the confidence interval around observed experience, and the recommended retirement rate assumption for police & fire members retiring with 25 or more years of service. All experience for members in this service band is for Tier One/Tier Two members. OPSRP assumptions are set based on professional judgment regarding the expected relationship to Tier One/Tier Two experience given the different plan provisions between tiers.

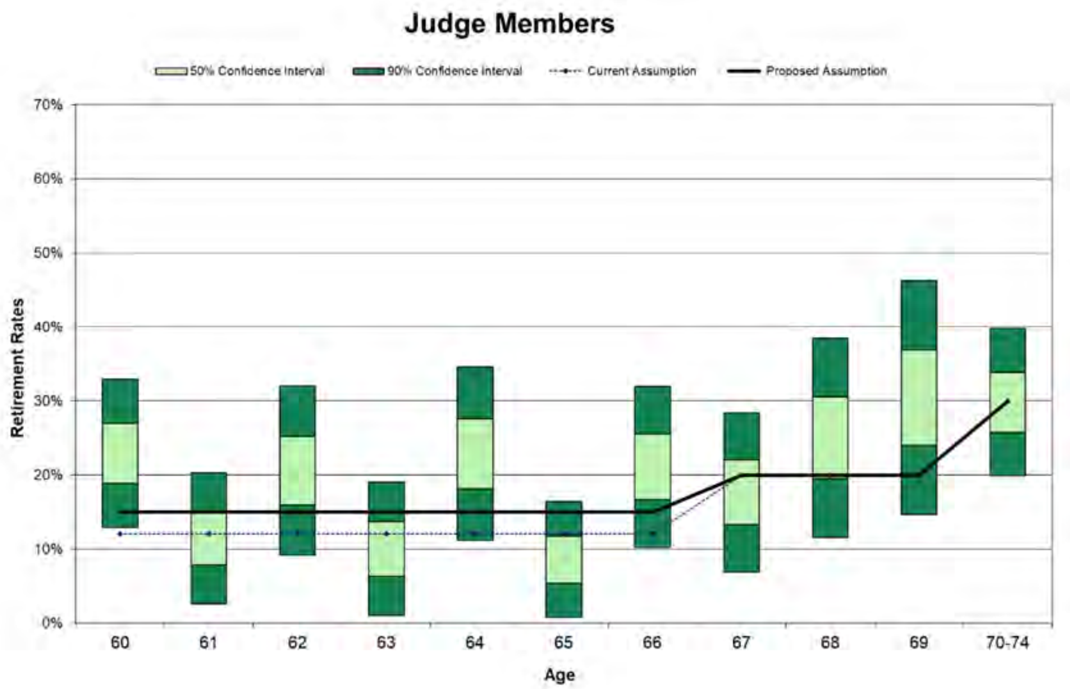


Retirement Assumptions (*continued*)

Judges

The vast majority of members of the State Judiciary elect to receive PERS benefits under Plan B. These benefits are available on an unreduced basis immediately upon retirement eligibility at age 60. As a result, there is relatively little variation in retirement rates by age for these members.

The following chart shows the current assumed rates of retirement, the confidence interval around observed experience, and the recommended retirement rate assumption for members of the State Judiciary.



Retirement Assumptions (*continued*)

Summary of Recommended Retirement Rates

The following table summarizes our recommended Tier One/Tier Two retirement rates:

Tier One/Tier Two Recommended December 31, 2022 and 2023 Valuations										
	Police & Fire			General Service			School Districts			Judges
Age	< 13 yrs	13-24 yrs	25+ yrs	<15 yrs	15-29 yrs	30+ yrs	<15 yrs	15-29 yrs	30+ yrs	
Less than 50						15.0%			25.0%	
50	1.5%	3.5%	38.0%			15.0%			25.0%	
51	1.5%	3.5%	28.0%			15.0%			25.0%	
52	1.5%	3.5%	28.0%			15.0%			25.0%	
53	1.5%	3.5%	28.0%			15.0%			32.0%	
54	1.5%	3.5%	28.0%			15.0%			25.0%	
55	3.0%	20.0%	28.0%	1.5%	2.5%	15.0%	1.5%	3.5%	25.0%	
56	3.0%	12.0%	28.0%	1.5%	2.5%	15.0%	1.5%	3.5%	25.0%	
57	3.0%	12.0%	28.0%	1.5%	2.5%	15.0%	1.5%	3.5%	25.0%	
58	6.0%	12.0%	28.0%	1.5%	8.0%	21.0%	1.5%	11.0%	27.5%	
59	6.0%	12.0%	28.0%	3.5%	8.0%	21.0%	4.5%	11.0%	27.5%	
60	6.0%	13.0%	32.0%	6.0%	12.0%	21.0%	6.5%	14.5%	27.5%	15.0%
61	6.0%	14.0%	28.0%	6.0%	11.0%	21.0%	6.5%	14.5%	27.5%	15.0%
62	15.0%	25.0%	38.0%	13.0%	18.5%	28.5%	15.0%	21.0%	34.0%	15.0%
63	15.0%	15.0%	31.0%	11.5%	16.5%	23.0%	13.0%	19.5%	29.0%	15.0%
64	15.0%	15.0%	31.0%	12.5%	16.5%	23.0%	13.0%	19.5%	29.0%	15.0%
65	40.0%	40.0%	45.0%	19.5%	28.0%	37.5%	25.5%	34.5%	45.0%	15.0%
66	40.0%	40.0%	45.0%	27.5%	36.0%	40.5%	23.0%	36.5%	45.0%	15.0%
67	40.0%	40.0%	45.0%	22.5%	26.5%	34.0%	21.0%	34.5%	38.0%	20.0%
68	40.0%	40.0%	45.0%	19.5%	26.5%	28.5%	21.0%	30.0%	28.5%	20.0%
69	40.0%	40.0%	45.0%	19.5%	26.5%	28.5%	21.0%	30.0%	28.5%	20.0%
70	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
71	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
72	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
73	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
74	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
75+	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Retirement Assumptions (*continued*)

The following table summarizes our recommended OPSRP retirement rates:

OPSRP Recommended December 31, 2022 and 2023 Valuations									
	Police & Fire			General Service			School Districts		
Age	< 13 yrs	13-24 yrs	25+ yrs	<15 yrs	15-29 yrs	30+ yrs	<15 yrs	15-29 yrs	30+ yrs
50	0.5%	1.5%	5.5%						
51	0.5%	1.5%	5.5%						
52	0.5%	1.5%	5.5%						
53	0.5%	1.5%	28.0%						
54	0.5%	1.5%	28.0%						
55	2.0%	5.0%	28.0%	1.0%	2.5%	5.0%	0.5%	2.5%	5.0%
56	2.0%	5.0%	28.0%	1.0%	2.5%	5.0%	0.5%	2.5%	5.0%
57	2.0%	5.0%	28.0%	1.0%	2.5%	7.5%	1.0%	2.5%	7.5%
58	5.0%	5.0%	28.0%	1.5%	3.0%	30.0%	1.5%	3.0%	30.0%
59	5.0%	5.0%	28.0%	2.0%	3.0%	25.0%	1.5%	3.0%	25.0%
60	5.0%	15.0%	32.0%	2.5%	3.75%	20.0%	2.5%	3.75%	20.0%
61	5.0%	8.5%	28.0%	2.5%	5.0%	20.0%	2.5%	5.0%	20.0%
62	10.0%	25.0%	38.0%	6.5%	12.0%	30.0%	6.0%	12.0%	30.0%
63	10.0%	15.0%	31.0%	6.5%	10.0%	20.0%	6.0%	10.0%	20.0%
64	10.0%	15.0%	31.0%	6.5%	10.0%	20.0%	6.0%	10.0%	20.0%
65	20.0%	35.0%	40.0%	15.5%	35.0%	20.0%	12.5%	35.0%	20.0%
66	20.0%	35.0%	40.0%	18.5%	33.0%	20.0%	12.5%	33.0%	20.0%
67	20.0%	35.0%	40.0%	17.0%	22.0%	30.0%	11.0%	22.0%	30.0%
68	20.0%	35.0%	40.0%	14.0%	20.0%	25.0%	9.0%	20.0%	25.0%
69	20.0%	35.0%	40.0%	14.0%	20.0%	25.0%	9.0%	20.0%	25.0%
70	100.0%	100.0%	100.0%	14.0%	20.0%	25.0%	9.0%	20.0%	25.0%
71	100.0%	100.0%	100.0%	14.0%	20.0%	25.0%	9.0%	20.0%	25.0%
72	100.0%	100.0%	100.0%	14.0%	20.0%	25.0%	9.0%	20.0%	25.0%
73	100.0%	100.0%	100.0%	14.0%	20.0%	25.0%	9.0%	20.0%	25.0%
74	100.0%	100.0%	100.0%	14.0%	20.0%	25.0%	9.0%	20.0%	25.0%
75+	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Retirement Assumptions (*continued*)

Lump Sum Option at Retirement

At retirement, a Tier One/Tier Two member has the option of electing a total lump sum distribution equal to two times the member's account balance, a partial lump sum distribution equal to the member's account balance with a reduced monthly allowance, or a monthly allowance with no lump sum distribution. The percentage of active Tier One/Tier Two members electing a lump sum distribution at retirement has declined slightly from the prior experience study. The results of our experience analysis are as follows:

Election at Retirement	Number of Retired Members	Percentage of Retirements	December 31, 2021 Valuation Assumption	Recommended December 31, 2022 and 2023 Valuations
Partial Lump Sum	444	2.0%	2.0%	0.0%
Total Lump Sum	260	1.2%	0.0%	0.0%

When a member elects a total or partial lump sum under Money Match or a partial lump sum under Full Formula, they give up the value of future COLAs (cost of living allowances) on the lump sum amount. A total lump sum election under Full Formula may cause the member to give up significantly more. Because there are no new contributions to member accounts and the system is projected to become dominated by Full Formula over time, we expect the total lump sum rate to decline over time.

For elections of both partial and total lump sum have declined steadily for a number of years, so that experience in recent years is even lower than shown in the table. Based on the data shown above and this continuing trend, we recommend assuming no members elect either total or partial lump sum distributions for purposes of the valuation.

Purchase of Credited Service

A member has the option of purchasing service at retirement to enhance their retirement benefits. Service may be purchased under one or more of the following categories:

- Purchase of forfeited service
- Credit for waiting time
- Credit for educational service
- Credit for military service
- Credit for seasonal positions
- Credit for police officers and firefighters
- Purchase of retirement credit for disability time

Most purchases are full cost purchases, meaning the member pays both the member and employer cost to obtain the service. Since the member pays the full cost of the service purchased, the purchase produces no impact or only a small impact on projected Tier One/Tier Two employer costs. The most common, and predictable, non-full-cost service purchase made by members is purchasing credit for the six-month waiting period at the beginning of PERS-eligible employment. Thus, for valuation purposes, we have included an adjustment to account for those members who are expected to make the waiting period service purchase.

For Money Match retirements, the purchase of credited service is generally cost-neutral to the system, because the member is depositing both the member and employer contributions. Therefore, in reviewing

Retirement Assumptions (*continued*)

actual experience, we examined non-Money Match retirements. The following table shows the number of members who retired in the experience period and elected to purchase credit for the six-month waiting period:

	Count	Number Electing to Purchase Waiting Time Service	Percentage of Retirements Electing to Purchase	December 31, 2021 Valuation Assumption	Recommended December 31, 2022 and 2023 Valuations
Non-Money Match Retirements	18,275	13,745	75%	75%	75%

We recommend no changes to the assumption of non-Money Match retirements purchasing credited service for the six-month waiting period.

Oregon Residency Status

Tier One/Tier Two members who are eligible for a “tax remedy” upward benefit adjustment under Senate Bill 656 or House Bill 3349 only receive the adjustment if they remain residents of Oregon for tax purposes while retired. Since a member’s residency status may change multiple times during retirement, the residency status of a newly retired member may not be representative of that member’s probability of remaining an Oregon resident later in retirement. As such, we analyzed the entire current population of retired members and beneficiaries who are potentially eligible for a tax remedy and compared that to the number who are currently receiving a tax remedy. The results of that analysis are as follows:

Number Eligible for Tax Remedy	Number Receiving Tax Remedy	Percentage Receiving Tax Remedy	December 31, 2021 Valuation Assumption	Recommended December 31, 2022 and 2023 Valuations
115,668	97,118	84%	85%	85%

We recommend no changes to the assumption of the percentage of potentially eligible members who receive a tax remedy benefit adjustment under Senate Bill 656 or House Bill 3349.

Disability Incidence Assumptions

The Plan provides duty and non-duty disability benefits to members. Members are eligible to receive duty disability benefits if they become disabled as a direct result of a job-related injury or illness, regardless of length of service. Members are eligible for non-duty disability benefits (also referred to as “ordinary” disability) if they become disabled after ten years of service (six years if a judge), but prior to normal retirement eligibility.

Duty disability incidence rates are developed separately for police & fire and general service members. Ordinary (non-duty) disability rates are developed for the system as a whole.

Duty Disability

Due to the limited amount of experience data available at some ages, this assumption employs a standard table adjusted to fit within the aggregate confidence interval.

The current assumed aggregate incidence for general service members is above the 90 percent confidence interval of the actual disability experience. As such, we recommend lowering the assumption.

Disability Incidence Assumptions (*continued*)

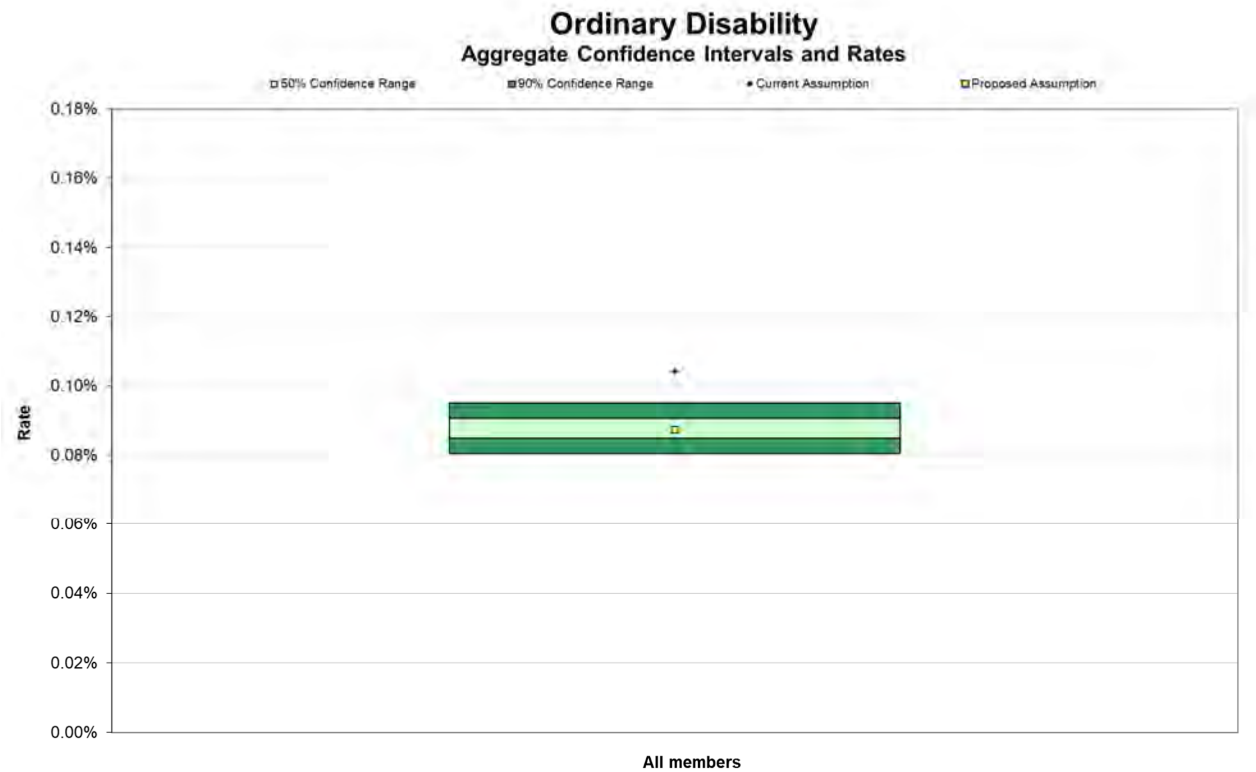
The current assumed aggregate incidence for police & fire members is below the 90 percent confidence interval of the actual disability experience. As such, we recommend increasing the current assumption.

Ordinary (Non-Duty) Disability

As with duty disability, the experience data for ordinary disability is limited at specific ages. Therefore, this assumption also uses a standard table adjusted to fit within the aggregate confidence interval. Based on the actual disability incidence in the experience observation period, we recommend lowering the ordinary disability incidence assumption.

The data underlying the ordinary disability study showed a pattern wherein a member's record would only be recognized as a disability retirement (rather than a service retirement or other separation from service) after a lag period that could span over a year. Because such lagged experience is not yet available for 2022, the final year of our study, we included in our analysis an assumption as to additional disabilities occurring in 2023 that will not be apparent until the subsequent reporting period. This assumption was based on an average of such records observed in the first five years of the study.

Disability Incidence Assumptions (*continued*)



The following table summarizes our recommended disability incidence rate assumptions:

	Percentage of the 1985 Disability Class 1 Rates (Sample rates shown for ages 20–55)	
	December 31, 2021 Valuation	**Recommended December 31, 2022 and 2023 Valuations**
Duty Disability		
• Police & Fire	20% (0.0060%–0.1690%)	25% (0.0075%–0.2113%)
• General Service	0.7% (0.0002%–0.0059%)	0.6% (0.0002%–0.0051%)
Ordinary Disability	25% with 0.16% cap (0.0075%–0.1600%)	20% with 0.14% cap (0.0060%–0.1400%)

Termination Assumptions

Not all active members are expected to continue working for covered employers until retirement. Termination rates represent the probability that a member will leave covered employment for a cause other than retirement, disability, or death at any given point during their working career.

Termination rates have been developed as service-based assumptions. The service-based assumptions reflect the experience of Tier One, Tier Two, and OPSRP members, with each group affecting the period of the table relating to the relevant service amount.

Assumptions are developed for the following groups:

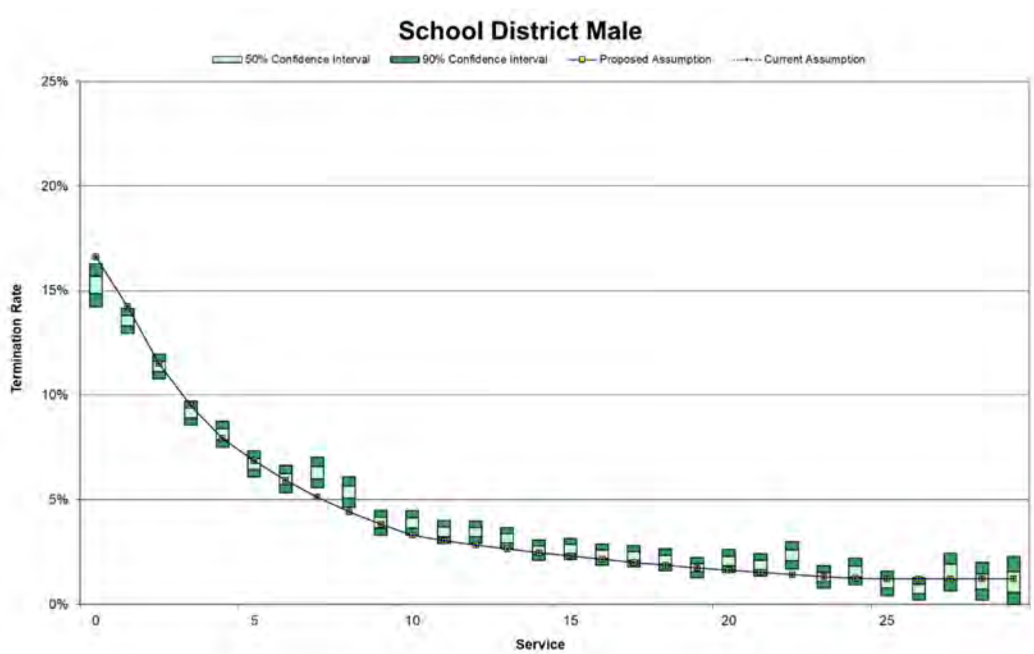
- School District males
- School District females
- Other General Service males
- Other General Service females
- Police & Fire (unisex table)

Termination Rates

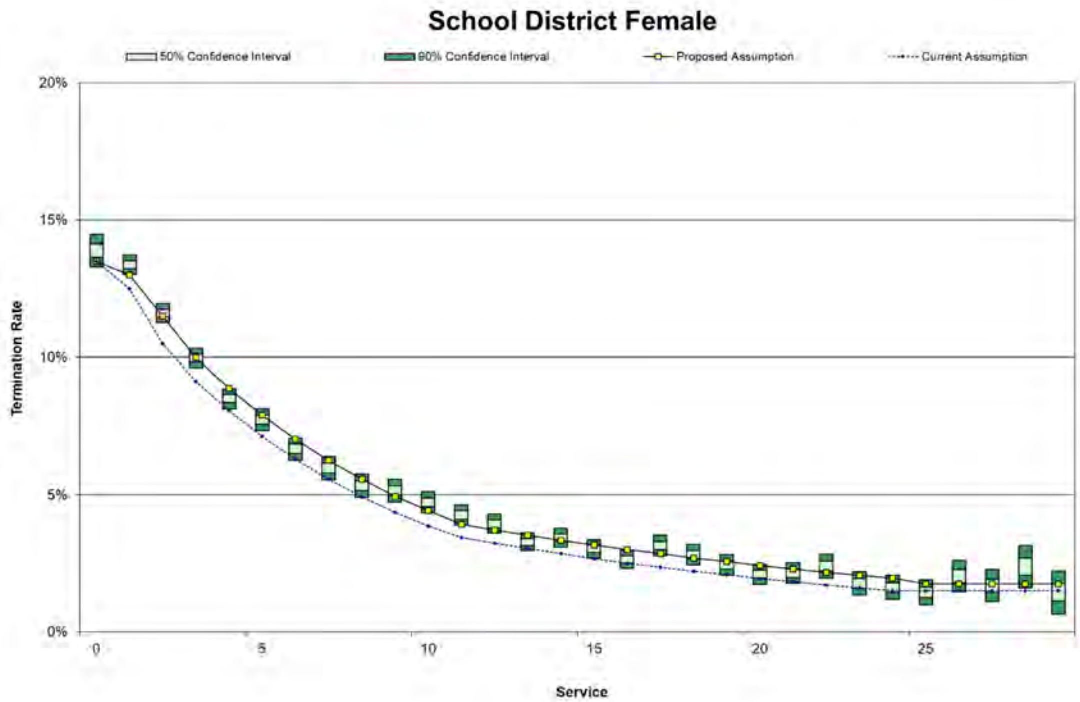
The following charts show the confidence interval around observed experience and the recommended rates of termination by year of service. These charts are based on the observed experience of members in the relevant group during the study period. We recommend changes to the assumption for school district general service females and for police and fire members. For the other three groups, we recommend maintaining the current assumption and, as is standard procedure, evaluating experience again with the next study.

Full listings of recommended termination assumptions are included in the appendix.

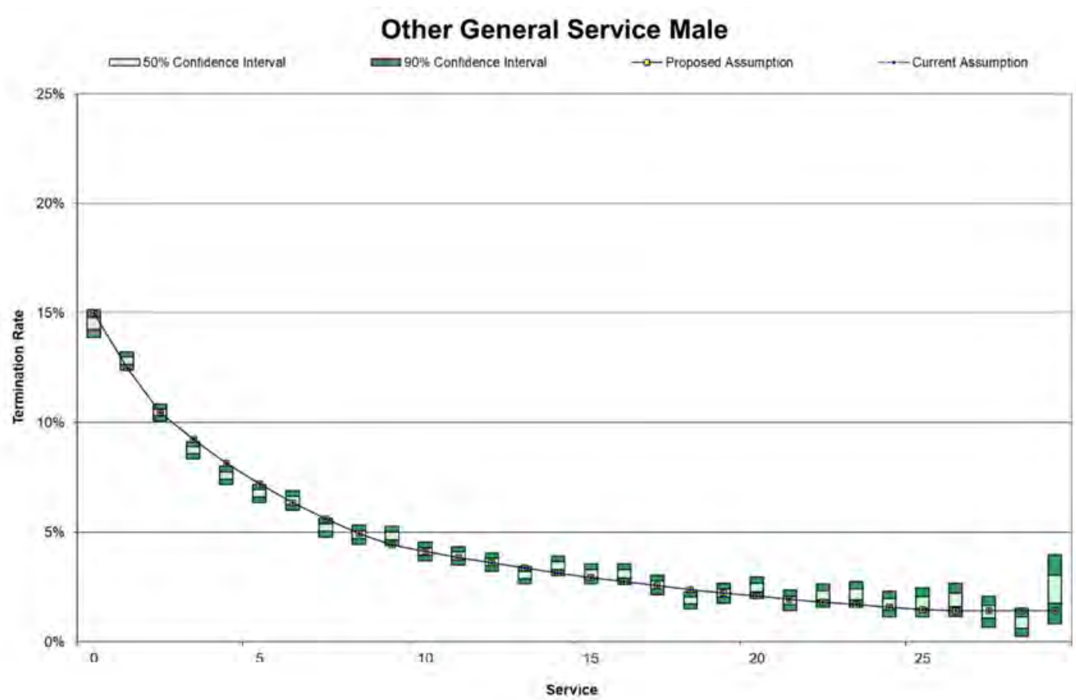
School Districts



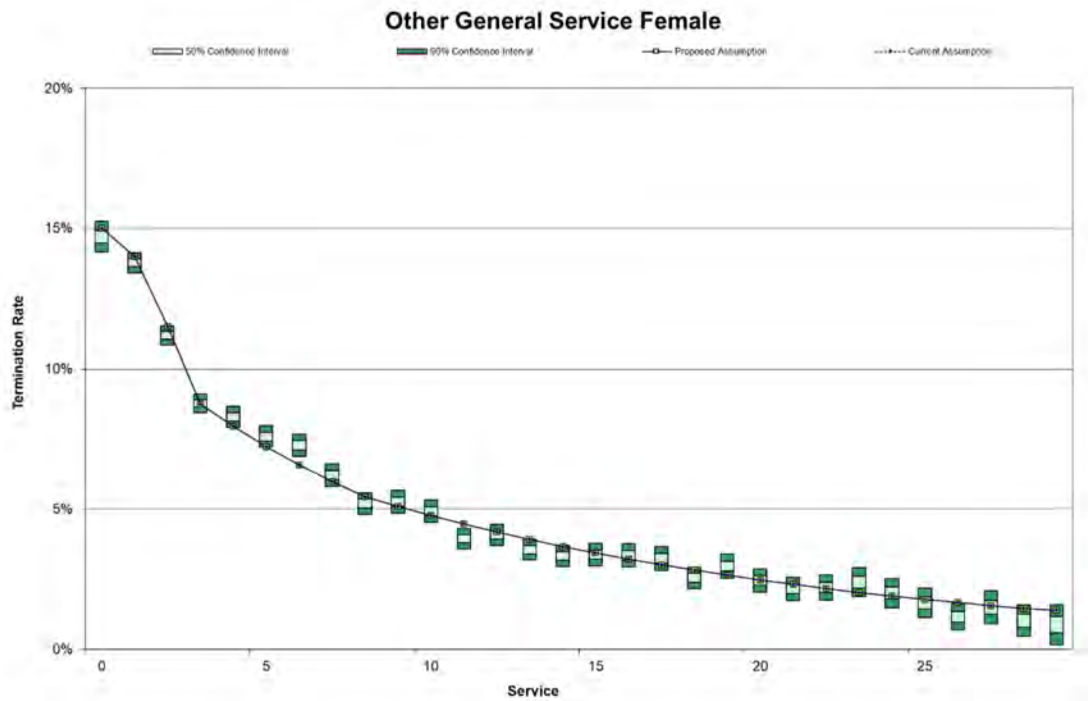
Termination Assumptions (*continued*)



General Service

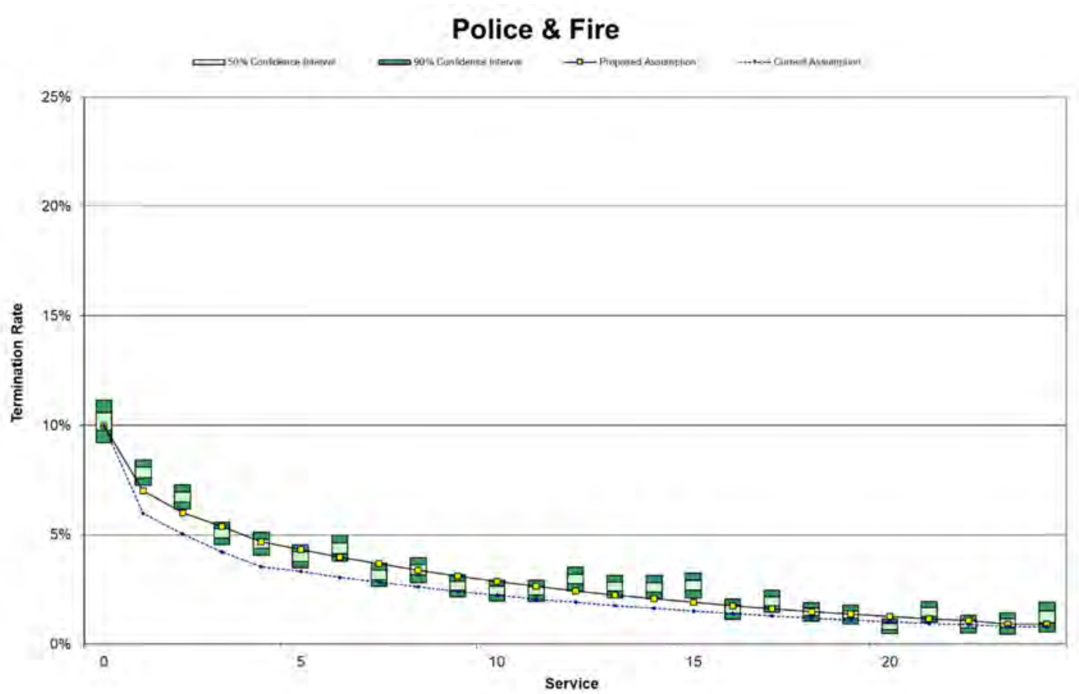


Termination Assumptions (*continued*)



Police & Fire

All police & fire members were rated together, with no variation by group or gender.



Salary Increase Assumptions

The salary increase assumptions analyzed with demographic experience were:

- Annual individual member merit/longevity salary increases
- Unused sick leave adjustments to final average salary at time of retirement for eligible members
- Unused vacation cash out adjustments to final average salary at time of retirement for eligible members

Annual Individual Member Merit/Longevity Salary Increases

The merit (or longevity) scale component of the annual individual member salary increase assumption is used in conjunction with the inflation and real wage growth assumptions to project annual individual member salary increases. In developing this assumption, our analysis first determined the gross salary increases received by members during the observation period on a payroll weighted basis. The assumed merit (or longevity) component of the overall annual increase was then determined by backing out the annualized increase in average valuation salary of 3.85% for the ten-year study period, which represents the realized combined effect of actual inflation and real wage growth for the period.

In order to capture experience across a broader range of budget, collective bargaining, and economic cycles, our initial analysis covered observed salary experience from 2012 through 2022. However, after discussion with PERS staff, certain data points were excluded due to the existence of one-off salary changes that are not expected to be indicative of anticipated future salary experience. These were:

- School district salary experience for 2020 was lower than most other years in the study. We understand at least part of the reason was due to furloughs effective in Spring 2020 during the early months of the pandemic. Reported salary experience for 2020 was replaced with the average of 2019 and 2021 experience.

- Salary increases for many other (i.e., non-school district) general service members in 2017 and 2019 and for many police & fire members in 2019 were affected by bargained changes wherein the 6% member contribution would no longer be “picked up” by the employer for a large number of members. Those members then received a 6.95% salary increase when the change occurred.

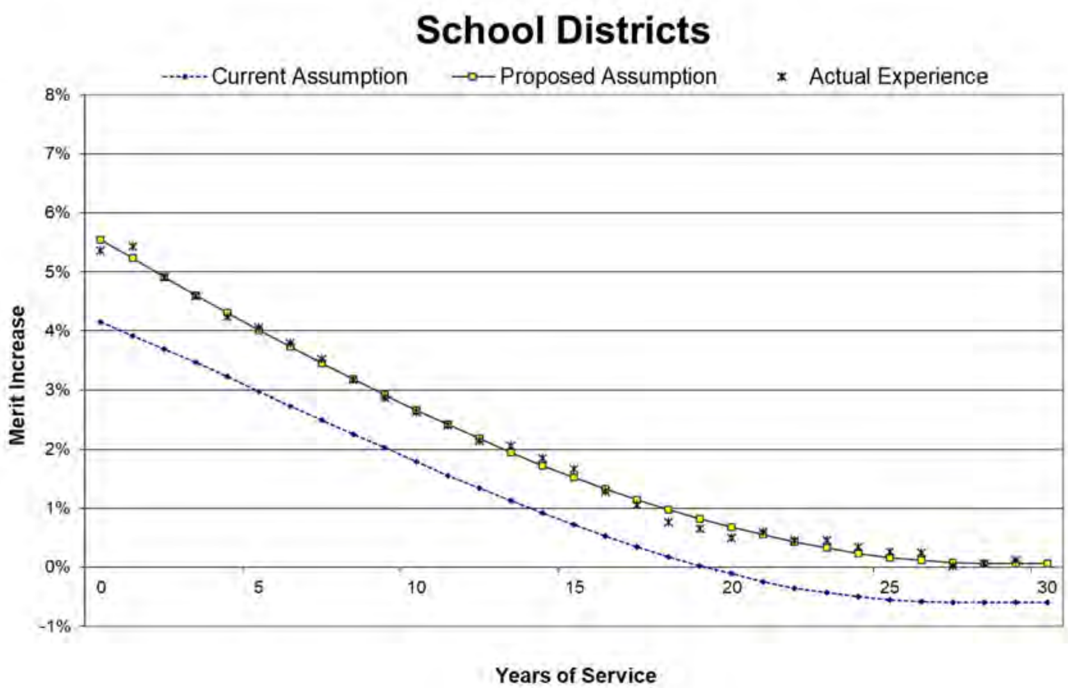
Assumptions are developed for the following groups:

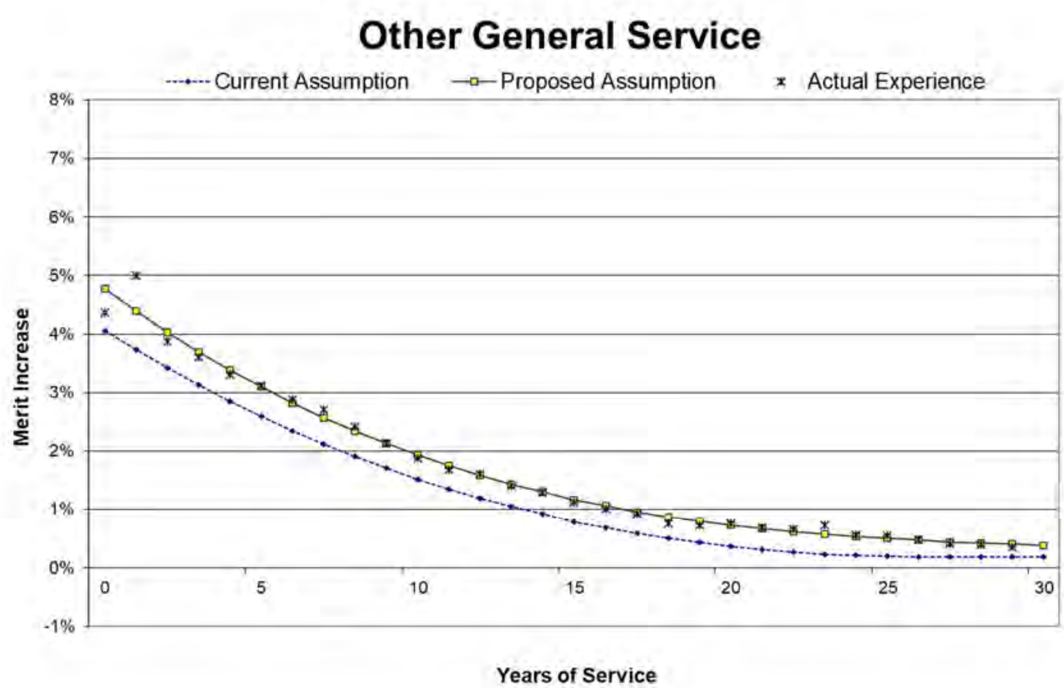
- School Districts
- Other General Service
- Police & Fire

The following charts show the current assumed rates of merit/longevity salary increases, the average of merit/longevity salary increases based on the included experience (per the discussion above) over the study's experience observation period, and the recommended rates of assumed merit/longevity salary increases. We recommend increasing the current merit/longevity salary increase assumption for all groups.

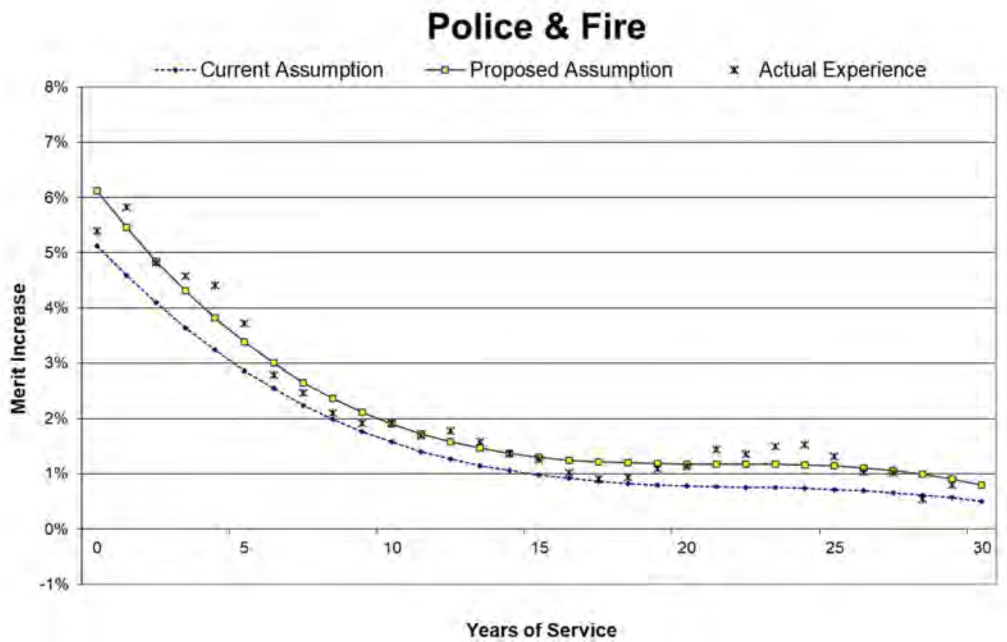
Note that to determine the gross salary increase assumption that would apply for an individual member in the valuation, the relevant merit/longevity assumption shown below would be added to the adopted system payroll growth assumption (for example, 3.40%).

Salary Increase Assumptions (*continued*)





Salary Increase Assumptions (*continued*)



Additional Salary Increase Assumption for Next Two Years

The increased merit/longevity salary assumptions shown above are based on a normal-course process for reviewing and updating this assumption. However, due to the high inflation environment of recent years and job market pressures, we anticipate that there may be unusually high salary increases for at least a portion of PERS active members in the near term. This expectation has been supported both by recently announced collective bargaining agreements covering large groups of PERS members and by input we've received from System stakeholders.

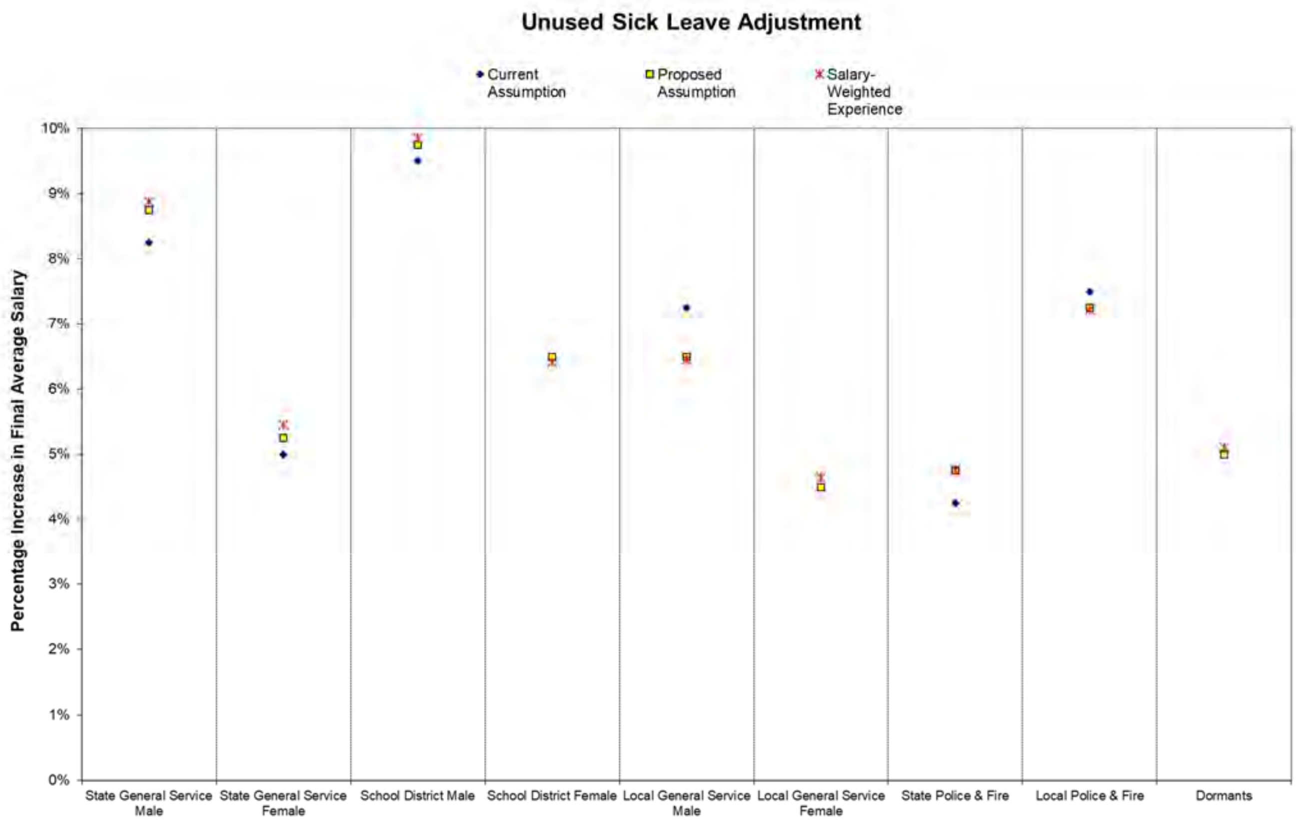
In recognition of this expectation and with the intent to mitigate or fully avoid potential salary experience losses in the upcoming two actuarial valuations, **we recommend an additional "select period" salary increase assumption. That assumption will apply as an extra 2% annual increase in pay to the standard increase assumption for the next two years.** It will apply to salary increases from 2023 to 2024 and from 2024 to 2025.

Salary Increase Assumptions (*continued*)

Unused Sick Leave Adjustment at Time of Retirement

Employers may elect to participate in the Unused Sick Leave Program. This program allows Tier One/Tier Two members to convert the value of one-half of their accumulated sick leave into additional retirement benefits. Our assumption represents the percentage increase in a member's final average salary due to the inclusion of the value of 50 percent of the member's accumulated sick leave and is only applied to the projected benefit of members whose employers who participate in the program.

For active members, there are currently eight sets of rates developed by employer group, employment category (general service or police & fire), and gender. In addition, a single rate is developed for eligible dormant members. The chart below shows the current assumption, the four-year average of the observed experience, and the recommended assumption for each of the groups studied.

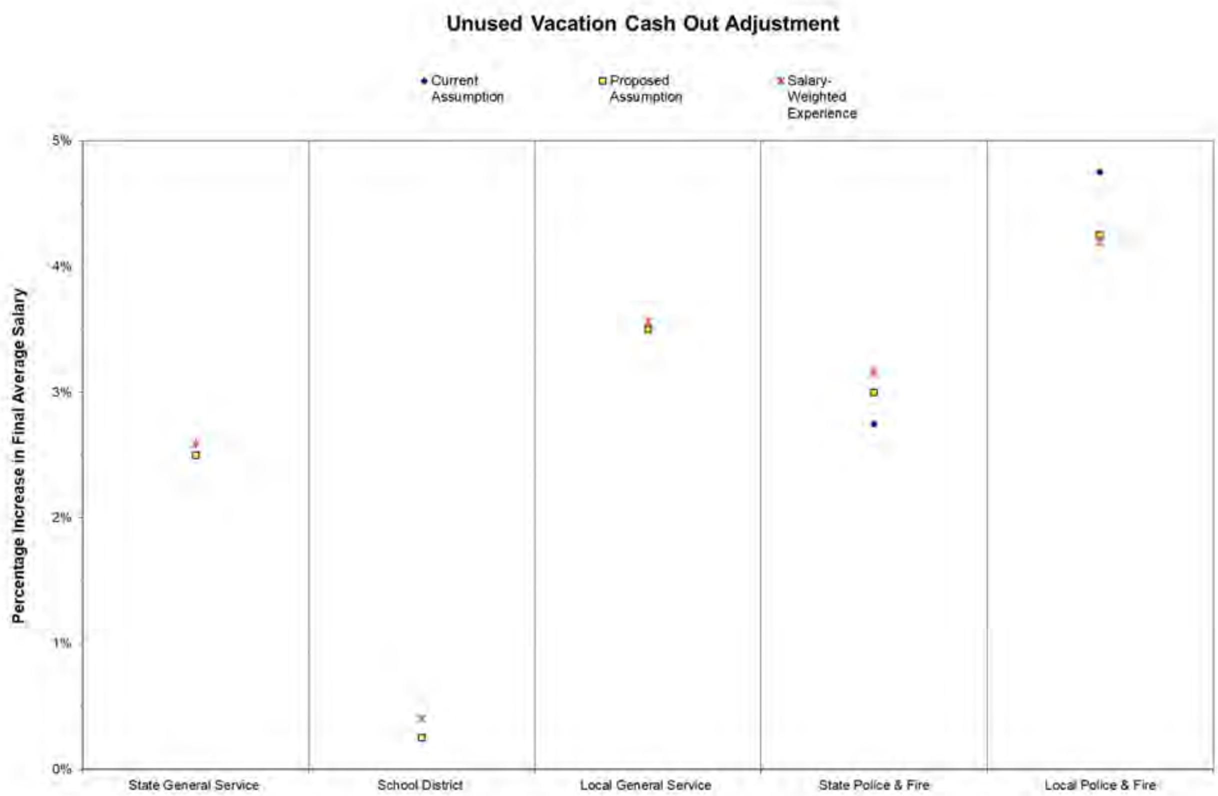


The non-retired Tier One/Tier Two population continues to decrease in size. While decreasing in number, we anticipate the remaining group over time will have an increasing level of average service. As a result of these factors, we have continued to see the average unused sick leave adjustment per eligible member increase for most groups. While the recommended assumptions are higher for some groups, the assumption will apply to a smaller group over time.

Salary Increase Assumptions (*continued*)

Unused Vacation Cash Out Adjustment

Tier One members are eligible to include the value of any lump sum payment of unused vacation pay in the calculation of their final average salary. The assumption shown below represents the percentage increase in a member's final average salary expected to result from this provision.



Retiree Healthcare Assumptions

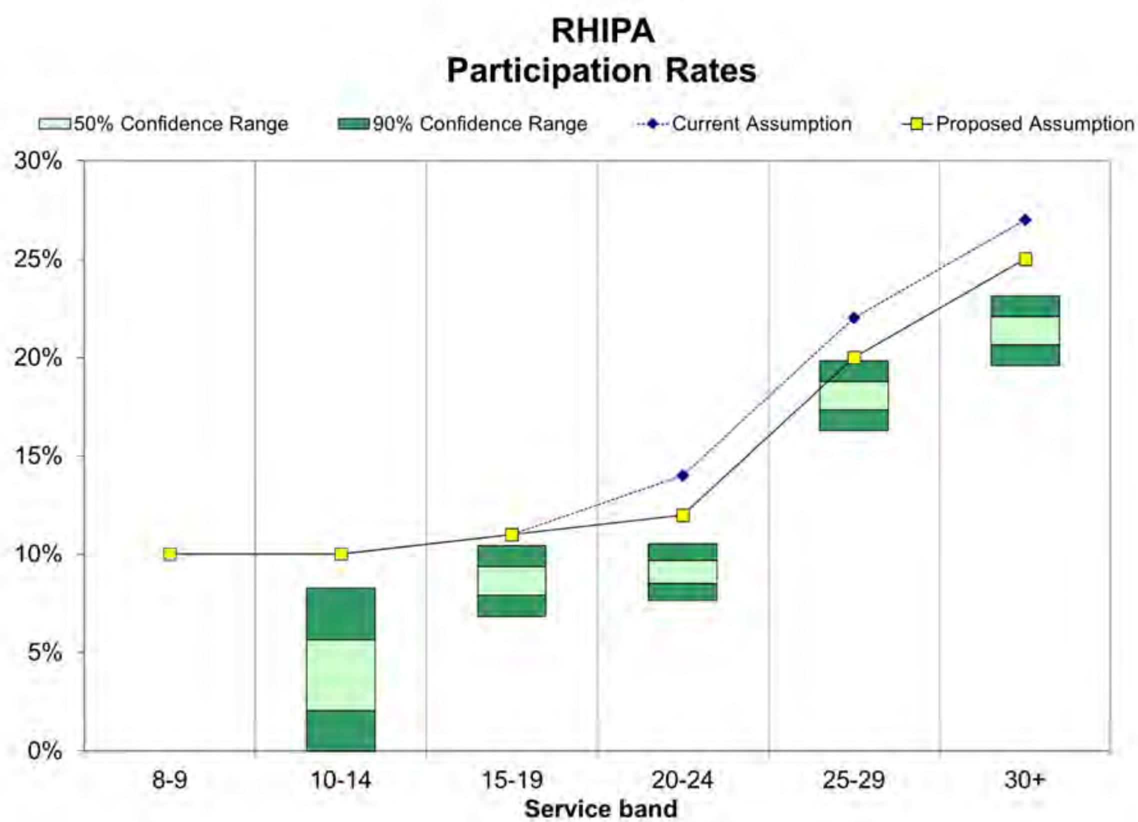
There are two retiree healthcare programs offered to eligible Tier One/Tier Two members, the Retiree Health Insurance Premium Account (RHIPA) and the Retiree Health Insurance Account (RHIA).

RHIPA

RHIPA is a program for eligible retirees from State of Oregon employment that provides a subsidized pre-Medicare insurance plan. In the previous valuation, the participation rate assumption for future eligible retirees varied based on service at the time of retirement, as the level of employer-paid benefits in the RHIPA program varies by service level. We recommend continuing this structure for the assumption.

The current participation assumptions are consistently higher than recent observed participation experience. We recommend decreasing the assumed participation level at most age ranges, as shown below. The level of participation in RHIPA may be affected, at least in part, by economic conditions, cost of coverage, competition from alternative programs available to retirees, and the impact of healthcare reform legislation becoming effective. Since changes in these factors could change participation rates in RHIPA quickly, we recommend that PERS monitor RHIPA participation levels of future eligible retirees on a regular basis.

The data underlying this study showed a pattern wherein members would sometimes not appear until one or two years after retirement. This may be due to a combination of participant behavior and administrative delay. Because such time-lagged experience is not yet available for the final two years of our study, we included in our analysis an assumption as to the number of additional enrollments not yet reported for members who retired during 2021 or 2022. This assumption was based on the number of such records observed in 2019 and 2020.

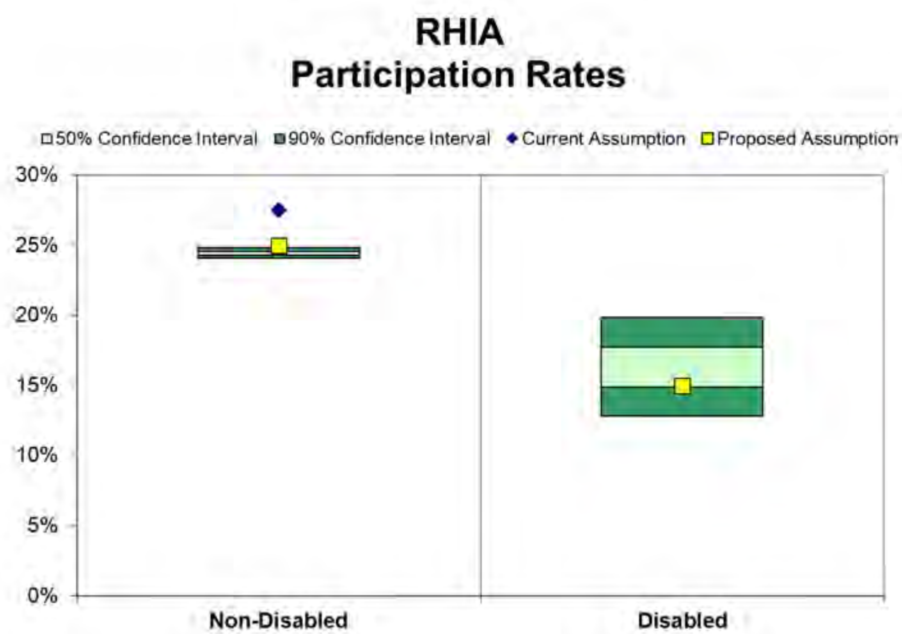


Retiree Healthcare Assumptions (*continued*)

RHIA

RHIA is a subsidized Medicare supplemental insurance program offered to all eligible Tier One/Tier Two retirees. Actual participation rates during the period of study were approximately 24% for non-disabled retirees, compared to the current assumption of 27.5%. For disabled retirees, actual participation rates were approximately 16%, compared to the current assumption of 15%. As shown in the table below, we recommend decreasing the non-disabled assumption to 25% and retaining the disabled assumption of 15%.

The data underlying this study showed a pattern wherein members would sometimes not appear until one or two years after retirement (or reaching age 65 if already retired). This may be due to a combination of participant behavior and administrative delay. Because such time-lagged experience is not yet available for the final two years of our study, we included in our analysis an assumption as to the number of additional enrollments not yet reported for members who retired (or reached age 65 if already retired) during 2021 or 2022. This assumption was based on the number of such records observed in 2019 and 2020.



5. Appendix

Data

Except where noted, the analysis in this study was based on data for the experience period from January 1, 2017 to December 31, 2022 as provided by the Oregon Public Employees Retirement System (PERS). PERS is solely responsible for the validity, accuracy, and comprehensiveness of this information; the results of our analysis can be expected to differ and may need to be revised if the underlying data supplied is incomplete or inaccurate.

The member data was summarized according to the actual and potential member decrements for each year in the study. Actual and potential decrements were grouped according to age or service depending on the demographic assumption.

Assumption Tables

A complete listing of all the assumptions, methods and procedures presented to the Board for review on July 28, 2023 that are recommended to be used in the December 31, 2022 and December 31, 2023 actuarial valuations are summarized on the following pages.

Methods and Procedures

Actuarial cost method: Entry Age Normal

UAL amortization method: Level percent of combined Tier One, Tier Two, and OPSRP payroll

UAL amortization period:

- Closed, layered amortization from the first rate-setting valuation in which newly arising UAL (from either experience different than assumption or assumption or method changes) is recognized
  - Tier One/Tier Two – 20 years
  - OPSRP – 16 years
  - RHIA/RHIPA – 10 years
  - Senate Bill 1049 was signed into law in June 2019 and required a one-time re-amortization of Tier One /Tier Two UAL over a closed 22-year period at the December 31, 2019 rate-setting actuarial valuation. This base will continue to be amortized as a closed period, with 18 years remaining as of the December 31, 2023 rate-setting actuarial valuation.
- In general side accounts are aligned with a 20-year period from the most recent rate-setting valuation. Employers who make lump sum payments in accordance with the rules under OAR 459-009-0086(9) may select a shorter amortization period of either 6, 10, or 16 years since the most recent rate-setting valuation.
- When RHIA or RHIPA is in an actuarial surplus position with a negative UAL, the actuarial surplus for that program is amortized over Tier One/Tier Two payroll using a rolling 20-year amortization basis. The resulting negative UAL Rate would be allowed to offset the Normal Cost Rate of the program, but not below a combined contribution rate of 0.0%.
- As of the December 31, 2022 actuarial valuation, amortization periods for existing transition liabilities/surpluses and other Pre-SLGRP amounts will be extended 18 months to align with the biennial rate-setting cycle so that the associated rate offsets will expire coincident with the usual timing for biennial rate changes. New transition liabilities will be amortized over the 19½ year period beginning when the employer joins the SLGRP.

- Regular UAL Rate amortization bases are not adjusted for the 18-month time lag between the rate-setting actuarial valuation date and the date the calculated rate becomes effective. Rate adjustments for side accounts and Pre-SLGRP amounts are adjusted for the 18-month lag.

Asset valuation method: Market value

Excluded reserves: Contingency Reserve, Capital Preservation Reserve. Rate Guarantee Reserve is excluded only when it is positive.

Contribution Rate Stabilization Method: The UAL Rate contribution rate component for a rate pool (e.g., Tier One/Tier Two SLGRP, Tier One/Tier Two School Districts, OPSRP) is confined to a collared range based on the prior biennium's collared UAL Rate contribution rate component (prior to consideration of side account offsets, SLGRP transition liability or surplus rates, or pre-SLGRP liability rate charges or offsets).

Collar Width: the rate pool's new UAL Rate contribution rate component will generally not increase or decrease from the prior biennium's collared UAL Rate contribution rate component by more than the following amount:

- Tier One/Tier Two SLGRP and Tier One/Tier Two School District Pool: 3% of payroll
- OPSRP: 1% of payroll
- Tier One/Tier Two rates for independent employers: greater of 4% of payroll or one-third of the difference between the collared and uncollared UAL Rate at the prior rate-setting valuation. In addition, the UAL Rate will not be allowed to be less than 0.00% of payroll for any Tier One/Tier Two independent employer with a funded status (excluding side accounts) less than 100%.

UAL Rate decrease restrictions**:** the UAL Rate for any rate pool will not be allowed to decrease if the pool's funded status is 87% (excluding side accounts) or lower; the allowable decrease will phase into the full collar width from 87% funded to 90% funded.

Liability Allocation for Actives with Several Employers: Allocate Actuarial Accrued Liability 5% (0% for police & fire) based on account balance with each employer and 90% (100% for police & fire) based on service with each employer.

Allocate Normal Cost to current employer.

Projected System-Average Level of Member Redirect Contributions:

- Tier One/Tier Two – 2.40% of payroll
- OPSRP – 0.65% of payroll

Allocation of Benefits-In-Force (BIF) Reserve: The BIF is allocated to each rate pool in proportion to the retiree liability attributable to the rate pool.

Recommended Economic Assumptions

Inflation	2.40%
Real wage growth	1.00% or lower
Payroll growth	3.40% or lower
Investment return	We recommend the Board not increase the investment return assumption above the current level of 6.90%, though capital market outlook models have shown a somewhat higher median projected return. The Board will select the assumption at its July 28, 2023 meeting.
Interest crediting	
▪ Regular account	Equal to investment return assumption
▪ Variable account	Equal to investment return assumption
RHIPA subsidy cost trend rates ▪ 2023 trend rate ▪ Ultimate trend rate ▪ Year reaching ultimate trend	 6.60% 3.80% 2074

Demographic Assumptions

Mortality

Non-Disabled Retiree Mortality												
Age	School District Male		Other General Service Male		Police & Fire Male		School District Female		Other General Service Female		Police & Fire Female	
	Pub2010 Retiree, Blended 80% Teachers/20% General Employees, Generational w/Social Security Data Scale, 0 year setback		Pub2010 Retiree, General Employees, Generational w/Social Security Data Scale, 1 year setback		Pub2010 Retiree, Public Safety, Generational w/Social Security Data Scale, 0 year setback		Pub2010 Retiree, Teachers, Generational w/Social Security Data Scale, 0 year setback		Pub2010 Retiree, General Employees, Generational w/Social Security Data Scale, 0 year setback		Pub2010 Retiree, Public Safety, Generational w/Social Security Data Scale, 1 year setback	
Year of Birth	1950	1960	1950	1960	1950	1960	1950	1960	1950	1960	1950	1960
50	0.001656	0.001484	0.001537	0.001380	0.002142	0.001920	0.000815	0.000730	0.002477	0.002220	0.001492	0.001340
51	0.001789	0.001600	0.003289	0.002948	0.002333	0.002087	0.000873	0.000781	0.002576	0.002304	0.001644	0.001474
52	0.001920	0.001717	0.003510	0.003139	0.002526	0.002259	0.000940	0.000841	0.002690	0.002406	0.001826	0.001633
53	0.002064	0.001850	0.003741	0.003346	0.002732	0.002448	0.000993	0.000890	0.002797	0.002506	0.002011	0.001799
54	0.002212	0.001987	0.003973	0.003560	0.002965	0.002663	0.001056	0.000948	0.002901	0.002605	0.002211	0.001981
55	0.002789	0.002510	0.004232	0.003800	0.003226	0.002903	0.002035	0.001831	0.003015	0.002713	0.002438	0.002189
56	0.003009	0.002711	0.004496	0.004045	0.003514	0.003165	0.002179	0.001963	0.003139	0.002827	0.002691	0.002422
57	0.003245	0.002926	0.004778	0.004303	0.003837	0.003460	0.002331	0.002102	0.003280	0.002958	0.002972	0.002677
58	0.003507	0.003158	0.005074	0.004575	0.004207	0.003789	0.002502	0.002253	0.003431	0.003090	0.003277	0.002955
59	0.003786	0.003407	0.005386	0.004851	0.004618	0.004156	0.002678	0.002410	0.003618	0.003256	0.003618	0.003259
60	0.004086	0.003673	0.005730	0.005156	0.005080	0.004566	0.002870	0.002580	0.003840	0.003452	0.003990	0.003590
61	0.004418	0.003968	0.006085	0.005470	0.005599	0.005028	0.003087	0.002772	0.004115	0.003696	0.004413	0.003967
62	0.004792	0.004294	0.006469	0.005809	0.006173	0.005532	0.003317	0.002972	0.004442	0.003981	0.004864	0.004368
63	0.005194	0.004640	0.006899	0.006183	0.006806	0.006081	0.003577	0.003196	0.004834	0.004319	0.005361	0.004804
64	0.005658	0.005035	0.007361	0.006577	0.007511	0.006684	0.003865	0.003440	0.005268	0.004688	0.005908	0.005278
65	0.006181	0.005483	0.007886	0.007018	0.008298	0.007362	0.004201	0.003727	0.005774	0.005122	0.006509	0.005792
66	0.006788	0.006010	0.008497	0.007539	0.009175	0.008123	0.004573	0.004049	0.006340	0.005613	0.007166	0.006358
67	0.007483	0.006612	0.009211	0.008155	0.010151	0.008970	0.005007	0.004424	0.006969	0.006158	0.007879	0.006976
68	0.008291	0.007326	0.010036	0.008867	0.011249	0.009940	0.005516	0.004874	0.007690	0.006795	0.008668	0.007659
69	0.009211	0.008139	0.010995	0.009715	0.012480	0.011027	0.006110	0.005399	0.008499	0.007509	0.009554	0.008442
70	0.010271	0.009084	0.012088	0.010680	0.013869	0.012267	0.006811	0.006024	0.009402	0.008316	0.010524	0.009298
71	0.011474	0.010159	0.013333	0.011792	0.015429	0.013661	0.007618	0.006745	0.010417	0.009223	0.011611	0.010270
72	0.012839	0.011379	0.014715	0.013029	0.017164	0.015212	0.008548	0.007575	0.011550	0.010236	0.012806	0.011338
73	0.014387	0.012764	0.016274	0.014424	0.019103	0.016948	0.009620	0.008535	0.012812	0.011367	0.014129	0.012522
74	0.016132	0.014326	0.018005	0.015973	0.021274	0.018893	0.010849	0.009634	0.014219	0.012628	0.015595	0.013835
75	0.018151	0.016168	0.019952	0.017719	0.023759	0.021164	0.012283	0.010941	0.015831	0.014102	0.017215	0.015288
76	0.020448	0.018270	0.022197	0.019773	0.026556	0.023727	0.013929	0.012446	0.017629	0.015751	0.019073	0.016989
77	0.022957	0.020532	0.024731	0.022097	0.029596	0.026470	0.015741	0.014078	0.019587	0.017518	0.021139	0.018887
78	0.025716	0.023000	0.027492	0.024589	0.032940	0.029461	0.017750	0.015875	0.021742	0.019446	0.023353	0.020887
79	0.028802	0.025760	0.030536	0.027311	0.036667	0.032795	0.020012	0.017899	0.024154	0.021603	0.025763	0.023042
80	0.032315	0.028931	0.033941	0.030356	0.040903	0.036620	0.022587	0.020222	0.026932	0.024112	0.028413	0.025412
81	0.036343	0.032604	0.037845	0.033882	0.045720	0.041015	0.025555	0.022925	0.030148	0.027046	0.031408	0.028119
82	0.041087	0.037008	0.042320	0.037965	0.051327	0.046232	0.029040	0.026158	0.033974	0.030602	0.034807	0.031226
83	0.046600	0.042186	0.047585	0.042862	0.057742	0.052274	0.033099	0.029964	0.038453	0.034811	0.038763	0.034915
84	0.053145	0.048454	0.053642	0.048562	0.065278	0.059515	0.037938	0.034589	0.043850	0.039979	0.043309	0.039208
85	0.060491	0.055485	0.060765	0.055400	0.073609	0.067518	0.043400	0.039809	0.049999	0.045862	0.048685	0.044387
86	0.069010	0.063748	0.068630	0.062951	0.083213	0.076868	0.049796	0.045999	0.057290	0.052921	0.054658	0.050135
87	0.078482	0.072938	0.077615	0.071697	0.093818	0.087190	0.056993	0.052967	0.065535	0.060905	0.061608	0.056910
88	0.089176	0.083379	0.087423	0.081247	0.105765	0.098888	0.065230	0.060989	0.074939	0.070067	0.069341	0.064442
89	0.100931	0.094845	0.098309	0.091917	0.118883	0.111715	0.074454	0.069965	0.085301	0.080157	0.078140	0.073060
90	0.114082	0.107744	0.110031	0.103396	0.133606	0.126183	0.084991	0.080269	0.096768	0.091391	0.087892	0.082592
91	0.128646	0.122111	0.122894	0.116066	0.149062	0.141490	0.097030	0.092101	0.109179	0.103632	0.098963	0.093465
92	0.144602	0.137947	0.136853	0.129901	0.164779	0.157196	0.110647	0.105555	0.122464	0.116828	0.111065	0.105423
93	0.161929	0.155255	0.151900	0.144910	0.180609	0.173165	0.125892	0.120703	0.136658	0.131026	0.124071	0.118361
94	0.180575	0.174004	0.168064	0.161137	0.196646	0.189490	0.142746	0.137552	0.151880	0.146353	0.137965	0.132278
95	0.199785	0.193289	0.185388	0.178642	0.212426	0.205519	0.160584	0.155363	0.167684	0.162232	0.152855	0.147292
96	0.219221	0.212732	0.203202	0.196595	0.228113	0.221361	0.179093	0.173792	0.184029	0.178582	0.168302	0.162830
97	0.238507	0.231912	0.221290	0.214741	0.243871	0.237128	0.197869	0.192398	0.200826	0.195273	0.184282	0.178827
98	0.257247	0.250385	0.239421	0.232801	0.259799	0.252869	0.216504	0.210729	0.217894	0.212081	0.200740	0.195190
99	0.275043	0.267706	0.257280	0.250417	0.275782	0.268426	0.234593	0.228335	0.234998	0.228729	0.217530	0.211728
100	0.292665	0.284858	0.274508	0.267186	0.292665	0.284858	0.252735	0.245993	0.252735	0.245993	0.234426	0.228173
101	0.311295	0.303295	0.291874	0.284089	0.311295	0.303295	0.272010	0.265020	0.272010	0.265020	0.252053	0.245329
102	0.328450	0.320009	0.310485	0.302506	0.328450	0.320009	0.290280	0.282820	0.290280	0.282820	0.271303	0.264331
103	0.346647	0.338077	0.327596	0.319177	0.346647	0.338077	0.309741	0.302084	0.309741	0.302084	0.289525	0.282085
104	0.364474	0.355821	0.345780	0.337232	0.364474	0.355821	0.329108	0.321295	0.329108	0.321295	0.308966	0.301329
105	0.381832	0.373141	0.363600	0.354967	0.381832	0.373141	0.348231	0.340304	0.348231	0.340304	0.328319	0.320523
106	0.396794	0.387762	0.380954	0.372282	0.396794	0.387762	0.365276	0.356961	0.365276	0.356961	0.347430	0.339521
107	0.412836	0.403843	0.395882	0.386870	0.412836	0.403843	0.383378	0.375027	0.383378	0.375027	0.364436	0.356140
108	0.428179	0.419272	0.411927	0.402954	0.428179	0.419272	0.400851	0.392512	0.400851	0.392512	0.382535	0.374202
109	0.442791	0.434015	0.427280	0.418391	0.442791	0.434015	0.417625	0.409347	0.417625	0.409347	0.400009	0.391688
110	0.454645	0.446081	0.441905	0.433146	0.454645	0.446081	0.433641	0.425472	0.433641	0.425472	0.416790	0.408529
111	0.453782	0.445233	0.453782	0.445233	0.453782	0.445233	0.446566	0.438154	0.446566	0.438154	0.432817	0.424663
112	0.455285	0.447156	0.452919	0.444387	0.455285	0.447156	0.455285	0.447156	0.455285	0.447156	0.445718	0.437321
113	0.456885	0.449177	0.454466	0.446351	0.456885	0.449177	0.456885	0.449177	0.456885	0.449177	0.454466	0.446351
114	0.458582	0.451297	0.456108	0.448413	0.458582	0.451297	0.458582	0.451297	0.458582	0.451297	0.456108	0.448413
115	0.460377	0.453518	0.457848	0.450575	0.460377	0.453518	0.460377	0.453518	0.460377	0.453518	0.457848	0.450575
116	0.459687	0.452838	0.459687	0.452838	0.459687	0.452838	0.459687	0.452838	0.459687	0.452838	0.459687	0.452838
117	0.458997	0.452158	0.458997	0.452158	0.458997	0.452158	0.458997	0.452158	0.458997	0.452158	0.458997	0.452158
118	0.458309	0.451480	0.458309	0.451480	0.458309	0.451480	0.458309	0.451480	0.458309	0.451480	0.458309	0.451480
119	0.457621	0.450803	0.457621	0.450803	0.457621	0.450803	0.457621	0.450803	0.457621	0.450803	0.457621	0.450803
120	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000

Demographic Assumptions *(continued)*

	Beneficiary Mortality				Disabled Retired Mortality			
Age	Male		Female		Police & Fire Male	Police & Fire Female	General Service Male	General Service Female
	Pub2010 Retiree, General Employees, Generational w/Social Security Data Scale, 1 year setback		Pub2010 Retiree, General Employees, Generational w/Social Security Data Scale, 0 year setback		Blended 50% Pub2010 Public Safety Disabled Retiree/50% Non-Safety Disabled Retiree, Generational w/Social Security Data Scale, 0 year setback		Pub2010 Non-Safety Disabled Retiree, Generational w/Social Security Data Scale, 2 year setforward	Pub2010 Non-Safety Disabled Retiree, Generational w/Social Security Data Scale, 1 year setforward
Year of Birth	1950	1960	1950	1960	1950	1950	1950	1950
50	0.001537	0.001380	0.002477	0.002220	0.010924	0.009970	0.020327	0.017163
51	0.003289	0.002948	0.002576	0.002304	0.011527	0.010310	0.021201	0.017547
52	0.003510	0.003139	0.002690	0.002406	0.012099	0.010639	0.022015	0.017903
53	0.003741	0.003346	0.002797	0.002506	0.012638	0.010959	0.022761	0.018243
54	0.003973	0.003560	0.002901	0.002605	0.013163	0.011285	0.023435	0.018559
55	0.004232	0.003800	0.003015	0.002713	0.013673	0.011612	0.024011	0.018850
56	0.004496	0.004045	0.003139	0.002827	0.014170	0.011939	0.024556	0.019105
57	0.004778	0.004303	0.003280	0.002958	0.014653	0.012260	0.025061	0.019337
58	0.005074	0.004575	0.003431	0.003090	0.015148	0.012591	0.025569	0.019548
59	0.005386	0.004851	0.003618	0.003256	0.015654	0.012921	0.026119	0.019770
60	0.005730	0.005156	0.003840	0.003452	0.016190	0.013275	0.026770	0.020000
61	0.006085	0.005470	0.004115	0.003696	0.016783	0.013652	0.027538	0.020286
62	0.006469	0.005809	0.004442	0.003981	0.017448	0.014073	0.028409	0.020630
63	0.006899	0.006183	0.004834	0.004319	0.018200	0.014540	0.029366	0.021031
64	0.007361	0.006577	0.005268	0.004688	0.019021	0.015051	0.030412	0.021505
65	0.007886	0.007018	0.005774	0.005122	0.019921	0.015621	0.031518	0.022075
66	0.008497	0.007539	0.006340	0.005613	0.020901	0.016263	0.032718	0.022747
67	0.009211	0.008155	0.006969	0.006158	0.021949	0.016983	0.033984	0.023558
68	0.010036	0.008867	0.007690	0.006795	0.023096	0.017807	0.035361	0.024509
69	0.010995	0.009715	0.008499	0.007509	0.024324	0.018728	0.036862	0.025627
70	0.012088	0.010680	0.009402	0.008316	0.025685	0.019777	0.038500	0.026907
71	0.013333	0.011792	0.010417	0.009223	0.027185	0.020944	0.040316	0.028362
72	0.014715	0.013029	0.011550	0.010236	0.028865	0.022238	0.042321	0.030005
73	0.016274	0.014424	0.012812	0.011367	0.030765	0.023674	0.044672	0.031863
74	0.018005	0.015973	0.014219	0.012628	0.032914	0.025263	0.047293	0.034045
75	0.019952	0.017719	0.015831	0.014102	0.035449	0.027096	0.050082	0.036502
76	0.022197	0.019773	0.017629	0.015751	0.038293	0.029145	0.053089	0.039129
77	0.024731	0.022097	0.019587	0.017518	0.041329	0.031325	0.056429	0.041978
78	0.027492	0.024589	0.021742	0.019446	0.044559	0.033783	0.060215	0.045128
79	0.030536	0.027311	0.024154	0.021603	0.048045	0.036680	0.064508	0.048684
80	0.033941	0.030356	0.026932	0.024112	0.051884	0.039953	0.069490	0.052714
81	0.037845	0.033882	0.030148	0.027046	0.056157	0.043666	0.075132	0.057406
82	0.042320	0.037965	0.033974	0.030602	0.061092	0.047990	0.081682	0.062755
83	0.047585	0.042862	0.038453	0.034811	0.066719	0.052938	0.088665	0.069013
84	0.053642	0.048562	0.043850	0.039979	0.073369	0.058758	0.096538	0.075841
85	0.060765	0.055400	0.049999	0.045862	0.080692	0.065160	0.104953	0.083350
86	0.068630	0.062951	0.057290	0.052921	0.089116	0.072395	0.114216	0.091036
87	0.077615	0.071697	0.065535	0.060905	0.098622	0.080111	0.125638	0.099064
88	0.087423	0.081247	0.074939	0.070067	0.109228	0.088534	0.138491	0.107182
89	0.098309	0.091917	0.085301	0.080157	0.121484	0.097479	0.152000	0.115775
90	0.110031	0.103396	0.096768	0.091391	0.135261	0.107323	0.166052	0.125006
91	0.122894	0.116066	0.109179	0.103632	0.149743	0.118001	0.180697	0.135105
92	0.136853	0.129901	0.122464	0.116828	0.164779	0.129564	0.196085	0.146306
93	0.151900	0.144910	0.136658	0.131026	0.180609	0.142119	0.211764	0.158877
94	0.168064	0.161137	0.151880	0.146353	0.196646	0.155855	0.227763	0.172466
95	0.185388	0.178642	0.167684	0.162232	0.212426	0.170378	0.244073	0.187094
96	0.203202	0.196595	0.184029	0.178582	0.228113	0.185685	0.260591	0.202891
97	0.221290	0.214741	0.200826	0.195273	0.243871	0.201813	0.277088	0.219198
98	0.239421	0.232801	0.217894	0.212081	0.259799	0.218363	0.294251	0.235832
99	0.257280	0.250417	0.234998	0.228729	0.275782	0.235128	0.312920	0.253419
100	0.274508	0.267186	0.252735	0.245993	0.292665	0.252735	0.330164	0.272719
101	0.291874	0.284089	0.272010	0.265020	0.311295	0.272010	0.348387	0.291037
102	0.310485	0.302506	0.290280	0.282820	0.328450	0.290280	0.366230	0.310517
103	0.327596	0.319177	0.309741	0.302084	0.346647	0.309741	0.383595	0.329900
104	0.345780	0.337232	0.329108	0.321295	0.364474	0.329108	0.398626	0.349034
105	0.363600	0.354967	0.348231	0.340304	0.381832	0.348231	0.414658	0.366118
106	0.380954	0.372282	0.365276	0.356961	0.396794	0.365276	0.429983	0.384224
107	0.395882	0.386870	0.383378	0.375027	0.412836	0.383378	0.444568	0.401694
108	0.411927	0.402954	0.400851	0.392512	0.428179	0.400851	0.456378	0.418462
109	0.427280	0.418391	0.417625	0.409347	0.442791	0.417625	0.455511	0.434466
110	0.441905	0.433146	0.433641	0.425472	0.454645	0.433641	0.456929	0.447417
111	0.453782	0.445233	0.446566	0.438154	0.453782	0.446566	0.458442	0.456106
112	0.452919	0.444387	0.455285	0.447156	0.455285	0.455285	0.460053	0.457663
113	0.454466	0.446351	0.456885	0.449177	0.456885	0.456885	0.461761	0.459317
114	0.456108	0.448413	0.458582	0.451297	0.458582	0.458582	0.461069	0.461069
115	0.457848	0.450575	0.460377	0.453518	0.460377	0.460377	0.460377	0.460377
116	0.459687	0.452838	0.459687	0.452838	0.459687	0.459687	0.459687	0.459687
117	0.458997	0.452158	0.458997	0.452158	0.458997	0.458997	0.458997	0.458997
118	0.458309	0.451480	0.458309	0.451480	0.458309	0.458309	1.000000	0.458309
119	0.457621	0.450803	0.457621	0.450803	0.457621	0.457621	1.000000	1.000000
120	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000

Demographic Assumptions *(continued)*

Non-Annuitant Mortality												
Age	School District Male		Other General Service Male		Police & Fire Male		School District Female		Other General Service Female		Police & Fire Female	
	125% of Pub2010 Employee, Blended 80% Teachers/20% General Employees, Generational w/Social Security Data Scale, 0 year setback		115% of Pub2010 Employee, General Employees, Generational w/Social Security Data Scale, 1 year setback		125% of Pub2010 Employee, Public Safety, Generational w/Social Security Data Scale, 0 year setback		100% Pub2010 Employee, Teachers, Generational w/Social Security Data Scale, 0 year setback		125% of Pub2010 Employee, General Employees, Generational w/Social Security Data Scale, 0 year setback		100% of Pub2010 Employee, Public Safety, Generational w/Social Security Data Scale, 1 year setback	
Year of Birth	1950	1960	1950	1960	1950	1960	1950	1960	1950	1960	1950	1960
30	0.000335	0.000327	0.000421	0.000411	0.000554	0.000540	0.000151	0.000147	0.000203	0.000198	0.000269	0.000263
31	0.000363	0.000353	0.000446	0.000435	0.000569	0.000554	0.000163	0.000158	0.000217	0.000211	0.000291	0.000284
32	0.000380	0.000369	0.000473	0.000460	0.000583	0.000566	0.000174	0.000169	0.000244	0.000237	0.000303	0.000294
33	0.000408	0.000395	0.000498	0.000483	0.000598	0.000580	0.000185	0.000179	0.000258	0.000250	0.000324	0.000315
34	0.000426	0.000412	0.000524	0.000508	0.000615	0.000594	0.000208	0.000201	0.000287	0.000277	0.000347	0.000336
35	0.000457	0.000441	0.000551	0.000533	0.000643	0.000620	0.000219	0.000211	0.000315	0.000303	0.000370	0.000358
36	0.000490	0.000471	0.000589	0.000568	0.000674	0.000648	0.000242	0.000233	0.000344	0.000331	0.000393	0.000379
37	0.000525	0.000502	0.000631	0.000606	0.000695	0.000664	0.000267	0.000255	0.000389	0.000372	0.000417	0.000400
38	0.000576	0.000546	0.000675	0.000644	0.000745	0.000706	0.000292	0.000277	0.000422	0.000400	0.000454	0.000433
39	0.000617	0.000580	0.000733	0.000695	0.000796	0.000749	0.000330	0.000310	0.000469	0.000441	0.000481	0.000456
40	0.000672	0.000627	0.000793	0.000746	0.000847	0.000790	0.000356	0.000332	0.000517	0.000482	0.000520	0.000489
41	0.000738	0.000683	0.000866	0.000808	0.000898	0.000831	0.000394	0.000364	0.000579	0.000536	0.000559	0.000522
42	0.000805	0.000740	0.000938	0.000869	0.000973	0.000895	0.000430	0.000396	0.000625	0.000575	0.000598	0.000553
43	0.000880	0.000806	0.001020	0.000939	0.001031	0.000944	0.000476	0.000436	0.000683	0.000625	0.000645	0.000594
44	0.000958	0.000873	0.001100	0.001006	0.001103	0.001005	0.000511	0.000465	0.000740	0.000674	0.000680	0.000622
45	0.001057	0.000960	0.001191	0.001084	0.001185	0.001076	0.000555	0.000504	0.000809	0.000735	0.000725	0.000660
46	0.001160	0.001049	0.001290	0.001171	0.001266	0.001145	0.000610	0.000552	0.000878	0.000794	0.000767	0.000696
47	0.001270	0.001145	0.001402	0.001268	0.001359	0.001225	0.000664	0.000598	0.000944	0.000851	0.000809	0.000732
48	0.001393	0.001254	0.001510	0.001362	0.001447	0.001302	0.000715	0.000643	0.001007	0.000906	0.000861	0.000776
49	0.001514	0.001360	0.001640	0.001476	0.001562	0.001403	0.000765	0.000687	0.001083	0.000973	0.000898	0.000808
50	0.001654	0.001483	0.001767	0.001587	0.001674	0.001500	0.000815	0.000730	0.001158	0.001038	0.000947	0.000850
51	0.001797	0.001607	0.001891	0.001695	0.001783	0.001595	0.000873	0.000781	0.001244	0.001113	0.001004	0.000900
52	0.001933	0.001728	0.002037	0.001822	0.001913	0.001711	0.000940	0.000841	0.001326	0.001186	0.001061	0.000949
53	0.002087	0.001870	0.002176	0.001946	0.002038	0.001826	0.000993	0.000890	0.001417	0.001270	0.001114	0.000996
54	0.002237	0.002009	0.002321	0.002080	0.002160	0.001940	0.001056	0.000948	0.001507	0.001353	0.001164	0.001043
55	0.002390	0.002151	0.002464	0.002212	0.002306	0.002075	0.001128	0.001015	0.001621	0.001458	0.001224	0.001099
56	0.002565	0.002310	0.002627	0.002364	0.002476	0.002231	0.001199	0.001080	0.001733	0.001561	0.001283	0.001155
57	0.002752	0.002481	0.002800	0.002522	0.002643	0.002383	0.001279	0.001153	0.001857	0.001674	0.001352	0.001218
58	0.002959	0.002665	0.002994	0.002699	0.002846	0.002564	0.001379	0.001242	0.001991	0.001794	0.001429	0.001289
59	0.003183	0.002865	0.003196	0.002879	0.003070	0.002762	0.001486	0.001337	0.002148	0.001932	0.001496	0.001347
60	0.003438	0.003090	0.003404	0.003063	0.003300	0.002966	0.001610	0.001447	0.002325	0.002090	0.001580	0.001422
61	0.003730	0.003349	0.003630	0.003263	0.003561	0.003198	0.001751	0.001572	0.002510	0.002254	0.001662	0.001494
62	0.004048	0.003628	0.003872	0.003477	0.003852	0.003452	0.001918	0.001718	0.002715	0.002433	0.001742	0.001564
63	0.004392	0.003924	0.004129	0.003700	0.004157	0.003714	0.002098	0.001874	0.002949	0.002635	0.001839	0.001648
64	0.004774	0.004249	0.004408	0.003939	0.004474	0.003981	0.002310	0.002055	0.003209	0.002856	0.001931	0.001725
65	0.005199	0.004613	0.004697	0.004180	0.004827	0.004283	0.002543	0.002256	0.003485	0.003092	0.002028	0.001805
66	0.005647	0.005000	0.005009	0.004444	0.005403	0.004784	0.002807	0.002486	0.003800	0.003364	0.002122	0.001883
67	0.006135	0.005421	0.005344	0.004731	0.006029	0.005327	0.003100	0.002739	0.004149	0.003666	0.002406	0.002130
68	0.006662	0.005886	0.005708	0.005043	0.006759	0.005972	0.003442	0.003041	0.004529	0.004001	0.002717	0.002401
69	0.007233	0.006391	0.006111	0.005400	0.007559	0.006679	0.003838	0.003391	0.004943	0.004367	0.003086	0.002727
70	0.007825	0.006922	0.006564	0.005800	0.008469	0.007491	0.004290	0.003794	0.005406	0.004782	0.003499	0.003092
71	0.008447	0.007479	0.007063	0.006247	0.009490	0.008402	0.004811	0.004259	0.005915	0.005237	0.003967	0.003508
72	0.009103	0.008068	0.007622	0.006748	0.010641	0.009431	0.005407	0.004792	0.006467	0.005731	0.004502	0.003986
73	0.009798	0.008692	0.008227	0.007292	0.011929	0.010583	0.006077	0.005391	0.007072	0.006274	0.005111	0.004530
74	0.010529	0.009351	0.008899	0.007895	0.013370	0.011874	0.006851	0.006085	0.007738	0.006872	0.005801	0.005147
75	0.011358	0.010117	0.009634	0.008556	0.015049	0.013405	0.007743	0.006897	0.008491	0.007564	0.006586	0.005849
76	0.012810	0.011446	0.010475	0.009330	0.016932	0.015128	0.008819	0.007879	0.009322	0.008329	0.007504	0.006685
77	0.014415	0.012893	0.011395	0.010181	0.019004	0.016997	0.010017	0.008959	0.010195	0.009118	0.008555	0.007643
78	0.016204	0.014493	0.012370	0.011063	0.021298	0.019049	0.011362	0.010162	0.011145	0.009968	0.009726	0.008699
79	0.018220	0.016296	0.013395	0.011981	0.023873	0.021351	0.012878	0.011518	0.012174	0.010888	0.011041	0.009875
80	0.020539	0.018389	0.014516	0.012983	0.026802	0.023995	0.014636	0.013104	0.013326	0.011930	0.012527	0.011204

Demographic Assumptions *(continued)*

Mortality Improvement Scale

Unisex Social Security Data Mortality Projection Scale Based on 60-year average of experience through 2019					
Age	Improvement Rate	Age	Improvement Rate	Age	Improvement Rate
15	1.35%	50	1.09%	85	0.86%
16	1.26%	51	1.11%	86	0.79%
17	1.16%	52	1.11%	87	0.73%
18	1.03%	53	1.09%	88	0.67%
19	0.90%	54	1.07%	89	0.62%
20	0.78%	55	1.05%	90	0.57%
21	0.69%	56	1.04%	91	0.52%
22	0.61%	57	1.03%	92	0.47%
23	0.53%	58	1.04%	93	0.42%
24	0.46%	59	1.05%	94	0.37%
25	0.39%	60	1.06%	95	0.33%
26	0.33%	61	1.07%	96	0.30%
27	0.28%	62	1.09%	97	0.28%
28	0.26%	63	1.12%	98	0.27%
29	0.25%	64	1.16%	99	0.27%
30	0.26%	65	1.19%	100	0.27%
31	0.28%	66	1.21%	101	0.26%
32	0.29%	67	1.23%	102	0.26%
33	0.31%	68	1.23%	103	0.25%
34	0.34%	69	1.23%	104	0.24%
35	0.36%	70	1.22%	105	0.23%
36	0.40%	71	1.21%	106	0.23%
37	0.46%	72	1.20%	107	0.22%
38	0.53%	73	1.19%	108	0.21%
39	0.61%	74	1.18%	109	0.20%
40	0.69%	75	1.15%	110	0.19%
41	0.77%	76	1.12%	111	0.19%
42	0.83%	77	1.11%	112	0.18%
43	0.88%	78	1.11%	113	0.17%
44	0.93%	79	1.11%	114	0.16%
45	0.96%	80	1.10%	115	0.15%
46	1.00%	81	1.08%	116	0.15%
47	1.03%	82	1.04%	117	0.15%
48	1.05%	83	0.99%	118	0.15%
49	1.07%	84	0.92%	119	0.15%

Demographic Assumptions *(continued)*

Retirement Assumptions

Retirement from Active Status (Tier One/Tier Two)

	Police & Fire			General Service / School Districts						Judges
				General Service			School Districts			
Age	<13 Years	13 - 24	25+ Years	< 15 years	15-29 Years	30+ Years	< 15 years	15-29 Years	30+ Years	
< 50						15.0%			25.0%	
50	1.5%	3.5%	38.0%			15.0%			25.0%	
51	1.5%	3.5%	28.0%			15.0%			25.0%	
52	1.5%	3.5%	28.0%			15.0%			25.0%	
53	1.5%	3.5%	28.0%			15.0%			32.0%	
54	1.5%	3.5%	28.0%			15.0%			25.0%	
55	3.0%	20.0%	28.0%	1.5%	2.5%	15.0%	1.5%	3.5%	25.0%	
56	3.0%	12.0%	28.0%	1.5%	2.5%	15.0%	1.5%	3.5%	25.0%	
57	3.0%	12.0%	28.0%	1.5%	2.5%	15.0%	1.5%	3.5%	25.0%	
58	6.0%	12.0%	28.0%	1.5%	8.0%	21.0%	1.5%	11.0%	27.5%	
59	6.0%	12.0%	28.0%	3.5%	8.0%	21.0%	4.5%	11.0%	27.5%	
60	6.0%	13.0%	32.0%	6.0%	12.0%	21.0%	6.5%	14.5%	27.5%	15.0%
61	6.0%	14.0%	28.0%	6.0%	11.0%	21.0%	6.5%	14.5%	27.5%	15.0%
62	15.0%	25.0%	38.0%	13.0%	18.5%	28.5%	15.0%	21.0%	34.0%	15.0%
63	15.0%	15.0%	31.0%	11.5%	16.5%	23.0%	13.0%	19.5%	29.0%	15.0%
64	15.0%	15.0%	31.0%	12.5%	16.5%	23.0%	13.0%	19.5%	29.0%	15.0%
65	40.0%	40.0%	45.0%	19.5%	28.0%	37.5%	25.5%	34.5%	45.0%	15.0%
66	40.0%	40.0%	45.0%	27.5%	36.0%	40.5%	23.0%	36.5%	45.0%	15.0%
67	40.0%	40.0%	45.0%	22.5%	26.5%	34.0%	21.0%	34.5%	38.0%	20.0%
68	40.0%	40.0%	45.0%	19.5%	26.5%	28.5%	21.0%	30.0%	28.5%	20.0%
69	40.0%	40.0%	45.0%	19.5%	26.5%	28.5%	21.0%	30.0%	28.5%	20.0%
70	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
71	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
72	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
73	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
74	100.0%	100.0%	100.0%	25.0%	28.5%	28.5%	21.0%	30.0%	28.5%	30.0%
75 +	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Lump Sum Option at Retirement

Partial Lump Sum	0%
Total Lump Sum	0%

Purchase of Credited Service at Retirement

Money Match Retirements	0%
Non-Money Match Retirements	75%

Oregon Residency Status

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

Demographic Assumptions *(continued)*

Retirement from Active Status (OPSRP)

	Police & Fire			General Service / School Districts					
				General Service			School Districts		
Age	<13 Years	13 - 24	25+ Years	< 15 years	15-29 Years	30+ Years	< 15 years	15-29 Years	30+ Years
50	0.50%	1.50%	5.50%						
51	0.50%	1.50%	5.50%						
52	0.50%	1.50%	5.50%						
53	0.50%	1.50%	28.00%						
54	0.50%	1.50%	28.00%						
55	2.00%	5.00%	28.00%	1.00%	2.50%	5.00%	0.50%	2.50%	5.00%
56	2.00%	5.00%	28.00%	1.00%	2.50%	5.00%	0.50%	2.50%	5.00%
57	2.00%	5.00%	28.00%	1.00%	2.50%	7.50%	1.00%	2.50%	7.50%
58	5.00%	5.00%	28.00%	1.50%	3.00%	30.00%	1.50%	3.00%	30.00%
59	5.00%	5.00%	28.00%	2.00%	3.00%	25.00%	1.50%	3.00%	25.00%
60	5.00%	15.00%	32.00%	2.50%	3.75%	20.00%	2.50%	3.75%	20.00%
61	5.00%	8.50%	28.00%	2.50%	5.00%	20.00%	2.50%	5.00%	20.00%
62	10.00%	25.00%	38.00%	6.50%	12.00%	30.00%	6.00%	12.00%	30.00%
63	10.00%	15.00%	31.00%	6.50%	10.00%	20.00%	6.00%	10.00%	20.00%
64	10.00%	15.00%	31.00%	6.50%	10.00%	20.00%	6.00%	10.00%	20.00%
65	20.00%	35.00%	40.00%	15.50%	35.00%	20.00%	12.50%	35.00%	20.00%
66	20.00%	35.00%	40.00%	18.50%	33.00%	20.00%	12.50%	33.00%	20.00%
67	20.00%	35.00%	40.00%	17.00%	22.00%	30.00%	11.00%	22.00%	30.00%
68	20.00%	35.00%	40.00%	14.00%	20.00%	25.00%	9.00%	20.00%	25.00%
69	20.00%	35.00%	40.00%	14.00%	20.00%	25.00%	9.00%	20.00%	25.00%
70	100.00%	100.00%	100.00%	14.00%	20.00%	25.00%	9.00%	20.00%	25.00%
71	100.00%	100.00%	100.00%	14.00%	20.00%	25.00%	9.00%	20.00%	25.00%
72	100.00%	100.00%	100.00%	14.00%	20.00%	25.00%	9.00%	20.00%	25.00%
73	100.00%	100.00%	100.00%	14.00%	20.00%	25.00%	9.00%	20.00%	25.00%
74	100.00%	100.00%	100.00%	14.00%	20.00%	25.00%	9.00%	20.00%	25.00%
75 +	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Disability Assumptions

	Duty Disability		
Age	Police & Fire	General Service	Ordinary Disability
20	0.0075%	0.0002%	0.0060%
25	0.0108%	0.0003%	0.0086%
30	0.0160%	0.0004%	0.0128%
35	0.0245%	0.0006%	0.0196%
40	0.0395%	0.0009%	0.0316%
45	0.0648%	0.0016%	0.0518%
50	0.1120%	0.0027%	0.0896%
55	0.2113%	0.0051%	0.1400%
60	-	0.0072%	0.1400%
65	-	-	-

Demographic Assumptions *(continued)*

Termination Assumptions

Termination Assumptions					
Duration	School District Male	School District Female	General Service Male	General Service Female	Police & Fire
0	16.63%	13.50%	15.00%	15.00%	10.00%
1	14.25%	13.00%	12.50%	14.00%	7.00%
2	11.50%	11.50%	10.46%	11.50%	6.00%
3	9.50%	10.00%	9.23%	8.74%	5.38%
4	7.93%	8.89%	8.15%	7.95%	4.69%
5	6.86%	7.91%	7.19%	7.23%	4.32%
6	5.93%	7.03%	6.35%	6.57%	3.98%
7	5.12%	6.25%	5.60%	5.98%	3.67%
8	4.43%	5.56%	4.94%	5.44%	3.38%
9	3.82%	4.94%	4.42%	5.09%	3.11%
10	3.31%	4.43%	4.13%	4.77%	2.87%
11	3.04%	3.92%	3.85%	4.47%	2.64%
12	2.84%	3.72%	3.60%	4.18%	2.43%
13	2.65%	3.53%	3.36%	3.92%	2.24%
14	2.47%	3.34%	3.13%	3.67%	2.07%
15	2.30%	3.17%	2.93%	3.43%	1.90%
16	2.15%	3.00%	2.73%	3.22%	1.75%
17	2.00%	2.85%	2.55%	3.01%	1.62%
18	1.87%	2.70%	2.38%	2.82%	1.49%
19	1.74%	2.56%	2.22%	2.64%	1.37%
20	1.62%	2.43%	2.08%	2.47%	1.26%
21	1.52%	2.30%	1.94%	2.32%	1.16%
22	1.41%	2.18%	1.81%	2.17%	1.07%
23	1.32%	2.07%	1.69%	2.03%	0.90%
24	1.23%	1.96%	1.58%	1.90%	0.90%
25	1.20%	1.75%	1.47%	1.78%	0.90%
26	1.20%	1.75%	1.40%	1.67%	0.90%
27	1.20%	1.75%	1.40%	1.56%	0.90%
28	1.20%	1.75%	1.40%	1.46%	0.90%
29	1.20%	1.75%	1.40%	1.40%	0.90%
30 +	1.20%	1.75%	1.40%	1.40%	0.90%

Demographic Assumptions *(continued)*

Merit Salary Increase Assumptions

Duration	School District	Other General Service	Police & Fire
0	5.54%	4.77%	6.12%
1	5.23%	4.39%	5.46%
2	4.92%	4.03%	4.85%
3	4.61%	3.70%	4.31%
4	4.31%	3.39%	3.82%
5	4.02%	3.10%	3.38%
6	3.73%	2.82%	3.00%
7	3.45%	2.57%	2.66%
8	3.18%	2.34%	2.37%
9	2.92%	2.13%	2.12%
10	2.66%	1.93%	1.91%
11	2.42%	1.75%	1.73%
12	2.18%	1.58%	1.58%
13	1.95%	1.43%	1.47%
14	1.73%	1.30%	1.37%
15	1.53%	1.17%	1.30%
16	1.33%	1.06%	1.25%
17	1.15%	0.96%	1.22%
18	0.98%	0.87%	1.20%
19	0.82%	0.80%	1.19%
20	0.68%	0.73%	1.18%
21	0.55%	0.67%	1.18%
22	0.43%	0.61%	1.18%
23	0.33%	0.57%	1.18%
24	0.24%	0.53%	1.17%
25	0.17%	0.50%	1.15%
26	0.12%	0.47%	1.11%
27	0.08%	0.44%	1.07%
28	0.06%	0.42%	1.00%
29	0.06%	0.40%	0.91%
30 +	0.06%	0.38%	0.80%

An across-the-board select assumption of an additional 2.0% of pay will be added to the merit salary increases shown in the table for pay increases from 2023 to 2024 and 2024 to 2025.

Demographic Assumptions *(continued)*

Unused Sick Leave Adjustment

Actives	
• State General Service Male	8.75%
• State General Service Female	5.25%
• School District Male	9.75%
• School District Female	6.50%
• Local General Service Male	6.50%
• Local General Service Female	4.50%
• State Police & Fire	4.75%
• Local Police & Fire	7.25%
Dormants	5.00%

Unused Vacation Cash Out Adjustment

Tier One	
• State General Service	2.50%
• School District	0.25%
• Local General Service	3.50%
• State Police & Fire	3.00%
• Local Police & Fire	4.25%
Tier Two	0.00%

Retiree Healthcare Assumptions

Retiree Healthcare Participation

RHIPA	
• 8 – 9 years of service	10.0%
• 10 – 14 years of service	10.0%
• 15 – 19 years of service	11.0%
• 20 – 24 years of service	12.0%
• 25 – 29 years of service	20.0%
• 30+ years of service	25.0%
RHIA	
• Non-Disabled Retired	25.0%
• Disabled Retired	15.0%

RHIPA Subsidy Cost Trend Rates

Year	Rate
2023	6.60%
2024	7.00%
2025	6.40%
2026	5.70%
2027	5.10%
2028	4.90%
2029	4.80%
2030	4.60%
2031	4.40%
2032-2054	4.20%
2055-2064	4.30%
2065-2066	4.20%
2067-2068	4.10%
2069-2070	4.00%
2071-2073	3.90%
2074+	3.80%

July 28, 2023
PERS Board meeting agenda

Action and discussion items

1. Legislative session review and 2023-25 budget update
   a. Session overview and 2024 preview
   b. 2023-25 budget
2. SB 1049 update
3. Valuation methods and assumptions including assumed rate of return
4. Notice of Assumed Rate OAR

OREGON PERS
PUBLIC EMPLOYEES RETIREMENT SYSTEM

Oregon
Tina Kotek, Governor

Public Employees Retirement System
Headquarters
11410 S.W. 68th Parkway, Tigard, OR
Mailing Address:
P.O. Box 23700
Tigard, OR 97281-3700
888-320-7377
TTY (503) 603-7788
www.oregon.gov/pers

July 28, 2023

TO: Members of the PERS Board

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

SUBJECT: Notice of Rulemaking for Assumed Rate Rule:
OAR 459-007-0007, *Assumed Rate*

OVERVIEW

- Action: None. This is notice that staff will begin rulemaking.
- Reason: Review and establish the assumed rate beginning January 1, 2024.

BACKGROUND

The PERS Board reviews the assumed rate in odd-numbered years as part of the board's adoption of actuarial methods and assumptions. The rate is then adopted in an administrative rule; even though the actual assumed rate will not be determined until the PERS Board's September meeting, we must open the relevant rule at this time to allow for adoption at that subsequent meeting. For now, these rule modifications include a blank space; the assumed rate will be filled in for public notice once the PERS Board decides on a preliminary rate in this meeting.

The rule specifies that the new assumed rate will be effective for PERS transactions with an effective date of January 1, 2024, consistent with this board's policy decision from 2013 that changes to the assumed rate will be effective January 1 following the board's adoption of the new rate. This decision gives staff ample time to perform the necessary preparations and communicate with members and employers. A January 1 effective date also provides equitable treatment to all members who retire in a year that a change is adopted, no matter in which month they retire. The new assumed rate will be aligned with the new actuarial equivalency factors (AEF), which will allow for a clear effective date for all transactions that involve calculations using both the latest year-to-date rate and AEF components.

PUBLIC COMMENT AND HEARING TESTIMONY

A rulemaking hearing will be held remotely on August 29, 2023, at 2:00 p.m. The public comment period ends September 4, 2023, at 5:00 p.m.

LEGAL REVIEW

The attached draft rule was submitted to the Department of Justice for legal review and any comments or changes will be incorporated before the rule is presented for adoption.

IMPACT

Mandatory: Yes, the assumed rate determined by the board must be adopted by rule and clearly describe the effective date of the assumed rate change on PERS transactions.

Benefit: The proposed rule benefits members, employers, and staff by setting forth the assumed rate and a clear effective date for implementing a change in the rate.

Cost: There are no discrete costs directly attributable to specifying the assumed rate in rule.

RULEMAKING TIMELINE

July 27, 2023	Staff begins the rulemaking process by filing Notice of Rulemaking with the Secretary of State.
July 28, 2023	PERS Board notified that staff began the rulemaking process.
August 1, 2023	Secretary of State publishes the Notice in the Oregon Administrative Rules Database. Notice is sent to employers, legislators, and interested parties. Public comment period begins.
August 29, 2023	Rulemaking hearing to be held remotely at 2:00 p.m.
September 5, 2023	Public comment period ends at 5:00 p.m.
September 29, 2023	Staff will propose adopting the rule modifications, including any changes resulting from public comment or reviews by staff or legal counsel.

NEXT STEPS

The rule is scheduled to be brought before the PERS Board for adoption at the September 29, 2023, board meeting.

C.4. Attachment 1 – 459-007-0007, *Assumed Rate*

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

459-007-0007

Assumed Rate

(1) The Board will review the assumed rate in odd-numbered years as part of the Board's review and adoption of actuarial assumptions and methods.

(2) The Board may adopt a change in the assumed rate at any time. A change in the assumed rate is effective the first of the year following the Board's adoption of the change.

(3) The assumed rate is set at *[6.90]* ____ percent, effective on January 1, *[2022]* **2024**.

Stat. Auth.: ORS 238.650 & 238A.450

Stats. Implemented: ORS Chapters 238 & 238A