ANALYSIS

Item 43: Public Employees Retirement System
Changes to Actuarial Methods and Assumptions

Analyst: John Borden

Request: Acknowledge receipt of a report on changes to actuarial methods and assumptions for the December 31, 2020 and December 31, 2021 actuarial valuations.

Analysis: Oregon Revised Statute 238.622 was enacted as part of the Public Employees Retirement System (PERS) reform in 2019 and directs the submission of the following preliminary report:

> At least 30 days before the Public Employees Retirement Board adopts changes to actuarial methods and assumptions used for purposes of the Public Employees Retirement System, the board shall submit a report to the Joint Committee on Ways and Means or the Joint Interim Committee on Ways and Means detailing the proposed changes and the associated, actuarially determined impact to the total liability of the system, the accrued liability of the system and employer contribution rates.

The Board adopted final methods and assumptions at its meeting on October 1, 2021. Prior to the Board's action, PERS submitted, as required by statute, timely notification to the Legislature on August 23, 2021 of a report on preliminary changes to actuarial methods and assumptions.

Background
Actuarial methods and assumptions are used to ascertain the systemwide valuation of assets (whose value is market-based) and liabilities for each calendar year valuation. The assumptions originate as recommendations by the PERS consulting actuary and are then used to determine the present value assets and liabilities and thereby the funded status of the PERS system. The Board's adoption of actuarial methods and assumptions targets achieving 100% funded status of the system by the end of various benefit plan amortization periods. Based on the methods and assumptions in place at the time of the most recent financial modeling presentation (December 2020), the likelihood of the funded status exceeding 100% for at least one valuation in the next 20 years is 60% while the likelihood of falling below 60% funded status for at least one valuation is 53%.

Based on each even-numbered year actuarial valuation, advisory employer contribution rates are developed for preliminary budgeting purposes. Each odd-numbered year actuarial valuation is used to determine the PERS Board adopted employer contribution rates. Adopted rates take effect beginning on July 1st for the subsequent biennium. For example, the calendar year valuation for 2020 (released in the fall of 2021) will determine *advisory* employer rates for the 2023-25 biennium. The valuation for calendar year 2021 (released in the fall of 2022) will be used to set *adopted* or final employer contribution rates for the 2023-25 biennium. The PERS Board has historically made no changes in actuarial methods and assumptions between the even and odd year valuations.

For the most current valuation (2020), actuarial accrued liabilities for the system total $95.3 billion and actuarial valuation of assets totals $67.3 billion. The resulting Unfunded Actuarial Liability (UAL) is $28 billion and the funded status is 71%. Taking into account $5.1 billion in pre-paid or "side account"

contributions reduces the UAL to $22.9 billion, which equates to a funded status of 76%. System funded status for the prior 2019 valuation year, with side account contributions, was 78.6%. The National Association of State Retirement Administrators (NASRA) median funding level of 130 pension plans for Fiscal Year 2020 was 71.9%, excluding side accounts.

Broad Administrative Authority

The PERS Board operates under broad administrative authority to adopt actuarial methods and assumptions and statute vests only the PERS Board with the authority to set the assumed earnings rate. Board-adopted changes directly impact both the cost and the financing of benefits and can increase or decrease the cost of projected benefit liabilities during a period when neither the Legislature nor voters have made any change to the structure of benefits.

The PERS Board formally adopts actuarial methods and assumptions for: (1) changes in actuarial methods; (2) expected future investment returns; (3) other non-investment economic assumptions; (4) demographic assumptions; and (5) allocation of liabilities. The most current valuation captures deviations between actual experience and assumed economic and demographic assumptions from prior valuations. As an aside, statute directs the Secretary of State to coordinate an independent review of all actuarial standards and practices once every four years with the first such report for the current consulting actuary being completed in October of 2019 (ORS 238.606). With minor exception, the review found PERS to be in conformity with actuarial standards and practices.

Changes to Actuarial Methods

The PERS Board formally adopts actuarial methods and assumptions for: benefit costing; amortization period(s); asset valuation method; and contribution stabilization method (i.e., rate collaring). The PERS Board left unchanged the actuarial cost and asset valuation methodologies; however, the Board is reverting back to the previously established amortization period for Tier 1 and Tier 2 UAL, changing the health plans amortization, as well as modifying the rate collar policy.

Statute gives the PERS Board authority to set the amortization period administratively, as long as the period does not exceed 40 years (ORS 238.225). The Tier 1 and Tier 2 UAL amortization schedule will revert back to a 20-year amortization after being re-amortized, on a one-time basis for the December 31, 2019 valuation, from 20-years to 22-years as part of the legislative direction given to the Board by SB 1049 (2019). Of note is that the PERS regular amortization schedule is “layered,” meaning that each biennium only the incremental increase in the UAL is amortized over a new closed 20-year period.

The amortization period for the Oregon Public Service Retirement Plan (OPSRP) remains unchanged at 16-years. The amortization periods for the health plans will go from a 10-year amortization period to a rolling 20-year amortization period, when the funded status of the health plans exceeds 100% funded status. This change would take effect for the 2023-25 biennium as the current funded status for the two PERS’s health plans exceeds 100% funding. From the perspective of the Legislative Fiscal Office (LFO), the extension in amortization period is difficult to understand given that both retiree health plans are overfunded, which would suggest either maintaining or even reducing the current 10-year amortization period; however, the PERS Board is now allowing for a negative UAL rate, which would offset a portion of the normal cost rate.

The Board uses an actuarial methodology termed "rate collaring" to help manage employer contribution rate fluctuations. Rate collaring is best understood as a deferral of a portion of employer rates to a future period and with the cost of deferral (i.e., “carry costs”) being at the assumed earnings rate

(discussed in more detail below). First adopted in 2004, the PERS Board later modified the original rate collar policy in 2013 by broadening the width of the rate collar. Prior to the Board's adoption of rate collaring, asset-smoothing and some use of reserves were used to mitigate contribution rate volatility.

The PERS Board's now former rate collar policy limited the biennium to biennium change in employer contribution rates to no more than the greater of three percent of payroll or 20% of the current contribution rate. This rate collar methodology also allowed the width of the collar to increase when funded status (which is dependent upon the level of funding or the ratio of assets to liabilities) for the pool or independent employer drops below 70%, or increases above 130%, with the width of the rate collar doubling at a funded status of 60% or 140%. For a double width rate collar, the biennium to biennium change in employer contribution rates was constrained to the greater of 6% of payroll or 40% of the current contribution rate if the funded status drops to 60% or below or increases to 140% or above. If funded status for an actuarial pool or independent employer fell somewhere between 70% and 60%, or between 130% and 140%, the size of the collar was to have increased from single width to double width on a graduated scale.

After a period of study, the PERS Board adopted a substantively revamped rate collar policy. The proposed rate collar would only affect the UAL portion of the employer rate and the normal cost portion of the rate would not be constrained. The proposed changes would be limited to a fixed percentage of three percent of payroll for only the UAL portion of employer rates for the two rate sharing pools (State and Local Government Rate Pool and School District Pool) and one percent of payroll change for OPSRP. In addition, the proposed rate collar methodology will vary between pooled (i.e., State and Local Government Rate Pool and the School Districts rate pool) and independent employers. As independent employers experience more rate volatility, the proposed rate collar policy for independent employers would be the greater of four percent of payroll or one-third of the difference between the collared and the uncollared UAL rate. In addition, the UAL rate for any employer would not be allowed to decrease unless the PERS funded status, *without considering side account offsets*, is 90% or higher, however there was also a provision to allow for a one percent incremental reduction of the rate collar beginning with 87% funded status up to 90% funded status.

The actuarial modeling under of the new rate collaring places the likelihood of the funded status exceeding 100% for at least one valuation in the next 20 years at 62% (+2% change from the current policy) with a likelihood of falling below 60% funded status for at least one valuation at 50% (minus 3% change from the current policy).

From the perspective of the Legislative Fiscal Office (LFO), the change in the rate collaring policy is not without concern for the following reasons: (a) the rate collar would not be allowed to float freely given that the funded status must be above 87% in order for an employer contribution rate reduction to be allowed; (b) the shift away from including normal costs as part of the rate collar methodology is reasonable with the understanding that such a change makes all current employee retirement plan costs payable in the current period rather than having a portion of that expense deferred to a future periods or valuations and will reduce the UAL and the carry cost of the UAL; (c) the rate collar policy change reinforces the PERS Board has a reliance on rate collaring to achieve employer rate stability, when in fact the Board has other tools available, such as phasing-in changes to the assumed rate over several biennia or changing amortization period(s); (d) the rate collaring methodology remains a laggard tool for responding to endogenous or exogenous events; and (e) the new rate collaring policy is overly complex, as compared to the current policy.

In addition, the new rate collar policy, like the prior policy, fails to account for any side account deposits when calculating the UAL, which materially overstates the UAL and makes employer rate reductions less likely. PERS notes, however, that by design, side accounts are not included in the UAL rate calculation, but instead are used to reduce the UAL rate once the UAL rate is calculated. This is done to avoid a double counting of the impact of side accounts. PERS also notes that actuarial standards do not allow side accounts to be taken into account when determining funding status in an actuarial valuation; however, side accounts must be accounted for in financial statements, per governmental accounting standard. While these are legitimate points in the context of the current (and former) rate collar policy, the fact remains that the exclusion of side accounts overstates the UAL thereby making employer rate reductions less likely. The PERS Board has within its power to set whatever rate collar methodology makes the most sense for employers and may want to consider what alternative approaches exists for accounting for side accounts so as to allow for a more accurate collaring of rates, when needed.

Changes to Actuarial Economic Assumptions - Investment Returns

The PERS Board adopts by administrative rule economic assumptions for regular investment return and variable investment return in a single rate that is referred to as the assumed earnings rate. The assumed earnings rate is generally defined as the rate of investment return that the PERS Board expects the Public Employees Retirement Fund to earn over the long-term, which is defined as 20 years and serves the following discrete purposes: (1) the discount rate used to determine the present value of projected assets and liabilities at current benefit levels; (2) assumed (interest) earnings rate is used when crediting Tier One regular accounts with annual earnings; and (3) used to calculate Money Match, one of three possible benefit calculations for Tier 1 and Tier 2 employees; and (4) used to annuitize Tier One and Tier Two member accounts, upon retirement, whether under Money Match or Formula Plus Annuity benefit.

There is perhaps no other actuarial assumption more financially significant to Oregon's public pension system than the assumed earnings rate, yet it is only vaguely referenced in statute. The lower (higher) the assumed earnings rate, the less (more) investment-generated funding is assumed to be available to fund system liabilities and therefore driving higher (lower) employer and employee contributions. Year-to-year valuations account for the impact of actual investment returns.

Technically, the assumed earnings rate is comprised of a series of assumptions about current and projected interest rates and rates of inflation and a cumulative projected market rate of return for various asset classes; however, financial modeling does not take into consideration past returns on the PERS portfolio, but is instead based on a general market return estimate. Of note is that nominal interest rates are at an unprecedented 4,000 year low in financial history.

Table-A provides a recent history of the assumed earnings rate factors compared to the PERS Board's proposed change, along with recent factors from NASRA and the Oregon Investment Council (OIC). The Board lowered the real return from 4.7% to 4.5% and the inflation factor from 2.5% to 2.4%, which reduced the assumed rate from 7.2% to 6.9%. The table illustrates that the PERS Board has been pursuing a multi-biennia strategy to lower the assumed rate, primarily through changing the assumption about real returns. The PERS report makes no corresponding mention of how the OIC investment strategy may be changing in light of lower assumed returns. Other state pension systems have made investments in more risky and less liquid assets in an attempt to compensate for lower assumed and actual returns.

Table-A: Recent History of the Nominal Assumed Earnings Rate Assumptions

Valuation	2020	2021	PERS		**2021**	2019	2017	2015	2013	2011

Year	NASRA	OIC	Actuary	**PERS**	PERS	PERS	PERS	PERS	PERS
Real return	4.53%	4.50%	3.87%	**4.50%**	4.70%	4.70%	5.00%	5.00%	5.25%
Inflation	2.6%	2.10%	2.40%	**2.40%**	2.50%	2.50%	2.50%	2.75%	2.75%
Assumed Rate	7.13%	6.60%	6.27%	**6.90%**	7.20%	7.20%	7.50%	7.75%	8.00%

Table-B provides a history of assumed rate changes and the number of years each adopted rate was or has been in effect and the resulting directional change to the UAL. Since PERS inception in 1946, the Legislature has delegated to the PERS Board the authority to set the assumed earnings rate administratively. Over the period of the last 75 years, beginning in 1946, the PERS Board has made or proposed ten changes to the assumed earnings rate.

Table-B: History of the Assumed Earnings Rate

Valuation Year	Assumed Earnings Rate	Rate Change	Number of Years	Change in Unfunded Liability
2021	6.90% Adopted	(0.30%)	--	Increase
2017	7.20%	(0.30%)	4 years	Increase
2015	7.50%	(0.25%)	2 years	Increase
2013	7.75%	(0.25%)	2 years	Increase
1989	8.00%	+0.50%	24 years	Reduction
1979	7.50%	+0.50%	10 years	Reduction
1975	7.00%	+1.50%	4 years	Reduction
1973	5.50%	+0.50%	2 year	Reduction
1970	5.00%	+1.25%	3 years	Reduction
1966	3.75%	+1.50%	4 years	Reduction
1946	2.25%	--	20 years	Reduction

The current NASRA median assumed rate of return across 130 public pension plans is 7%. The PERS consulting actuary calculated an annualized geometric mean return of 6.27% over a 20-year period. OIC, the entity charged with investing the Oregon Public Employees Retirement Fund (OPERF), received a consultant's report that calculated a geometric median return over 10 years at 6.6%. PERS states that, in order to receive a non-qualified actuarial valuation from the agency's consulting actuarial, the PERS Board was "*required*" to adopt an assumed rate that was less than 7.00%, which is disconcerting.

LFO notes that there is a difference between amortizing a liability over a 20-year period versus accurately predicting the assumed rate of return over that same period. This is illustrated by the PERS Board's changing of the assumed earnings rate four out of the last five rate-setting valuations. In fact, given the PERS Board's frequent changes to the assumed earnings rate, as well as that of investment advisors and other pension systems, it is difficult to see how the assumed earnings rate has returned to being anything other than a short-term assumption. Finally, further illustrating this point is that actual earnings crediting of investment returns occurs annually.
A distribution of the last 24 years of earning crediting, as summarized in the Table-C, is helpful to understanding the proposed change to the assumed earnings rate. What the table illustrates is that over the last 24 years, 17 times (or 71%) actual annual returns exceeded 7% and 14 times (or 58%) returns exceeded 8%.

Table-C: Distribution of Actual Investment Earnings (Calendar Year 1997-2020)

Rates of Return	<0%	>0%≤7%	>7%≤8%	≥8%

Percentage	13%	17%	13%	58%
Calendar Year and Actual earnings crediting	2001 (-7.17%); 2002 (-8.93%); 2008 (-27.18%)	2000 (0.63%); 2011(2.21%); 2015 (2.21%); 2018 (0.11%)	2014 (7.29%); 2016 (7.10%); 2020 (7.66%)	1997 (20.42%); 1998 (15.43%); 1999 (24.89%); 2003 (23.79%); 2004 (13.80%); 2005 (13.04%) 2006 (15.57%); 2007 (10.22%); 2009 (19.19%); 2010 (12.44%); 2012 (14.29%); 2013 (15.76%) 2017 (15.15%); 2019 (13.33%)

When evaluating a change to the assumed earning rates, a review of historic OPERF earnings is also informative. The actual 24-year return between 1997-2020 is 8.80%, including the 2008 financial crisis. OPERF 20-year return was 7.49%, and 8.51%, 8.67%, and 7.03% respectively for the 10, 5, and 3-year returns. Comparable NASRA returns were 6.7%, 8.10%, 9.40%, and 8.20%, for the 20, 10, 5, and 3-year periods.

Changes to Actuarial Economic Assumptions - Other than Investment Returns

The PERS Board adopts other economic assumptions for: inflation, real wage growth, payroll growth, Retiree Health Insurance Premium Account, and administrative expenses. Contingency reserves, which do not include side accounts or pre-paid employer contributions, are excluded from the actuarial valuation. The PERS Board reduced the actuarial assumptions for annual inflation from 2.5% to 2.4%, left wage growth unchanged at 1.00%, and payroll growth, which is the sum of annual inflation and real wage growth declining to 3.4%. The reduction in various inflation factors is at odds with the current economic trending of higher rates of inflation, which presumably may eventually translate into higher payroll growth. The administrative expense assumption increased from $40.5 to $59 million annually ($81 to $118 million biennially) due primarily to the one-time cost of implementing SB 1049 (2019). The Board also adopted updated assumptions for Retiree Health Insurance Premium Account.

The actuary's analysis also includes the impact of recent legislation, including SB 111 (2021) that increased the spousal death benefit for members who die after earliest retirement date and while employed with a PERS employer or within 120 days after termination from service. The beneficiary's pension benefit increases from 50% the allowed service retirement allowance to the full service retirement allowance. This increased death benefit's cost is estimated to be between $100 up to $200 million and alone may comprise 50% of the $500 million increase in the accrued liability.

Changes to Actuarial Demographic Assumptions

The PERS Board adopts demographic assumptions for: mortality, retirement, disability incidence, termination, salary increase factors (e.g., Final Average Salary), and retiree healthcare. ORS 238.607 states that PERS must use the best actuarial information on mortality available at the time the PERS Board adopts rates. The PERS Board updated a variety of assumptions: improved select base mortality assumptions for school district males; adjusted retirement rates; reduced percentage of retirees selecting partial lump sum payments; increase percentage of retirees purchase of credited service at retirement; increase merit pay component based on last eight years of actual experience; updated pre-retirement termination of employment for select members; lowered assumed rates of both non-duty disability and general service duty disability; increased Tier 1 unused vacation cash payout and Tier 1/Tier 2 vacation leave assumptions; decreased program participation in both retiree health programs.

The PERS Board made no change to the methodology for how the cost of an employee's benefits are allocated between employers when an employee has worked for more than one employer. The

methodology allocates a member's actuarial accrued liability among employers based on a weighted average of the Money Match methodology, which utilizes account balance, and the Full Formula methodology, which utilizes years of service. Normal costs are assigned to an employee's current employer.

Lastly, the employee earnings threshold was updated from $2,500 to $3,333 for member redirect contributions for Tier 1/Tier 2 and OPSRP, per HB 2906 (2021). This will change the employer member redirect(s) offset from 2.45% of Tier 1/Tier 2 payroll to 2.40% and 0.70% of OPSRP payroll to 0.65%.

Estimated Financial Impact of Assumption Changes

Table-D summarizes the PERS actuary's estimated impact on the 2023-25 (uncollared) systemwide employer contribution rates. The impact is estimated to increase contribution rates by 2.7% of payroll due to normal cost rate increases (i.e., merit and demographic changes) of 0.5% and the change in the assumed earnings rate (2.2%). This increase exceeds the rate relief provided by legislative reforms redirecting member contributions (anticipated to be 2.40% of Tier 1/Tier 2 payroll, 0.65% of OPSRP payroll). Absent the proposed change in the assumed earnings rate, the (uncollared) rate increase would be only 0.5% and may otherwise decrease, which is a possibility, if 2021 earnings exceed the assumed earnings rate, as currently being reported (estimated at 16.48% vs the current 7.2% assumed rate, as of August 2021). The combined impact to the UAL is $3.4 billion.

Table-D: Estimated Employer Rate Change

Change in Employer Contribution Rates due to Change in Assumed Rate	Assumed Return of 7.2%	Assumed Return of 6.9%	Estimated UAL Cost
Assumed Earnings Rate	--	2.2%	$2.9 billion
All Other Actuarial Changes	0.5%	0.5%	$0.5 billion
Percent of payroll/ Total Impact to UAL	0.5%	2.7%	$3.4 billion

Table-E shows the historic UAL increases associated with changes in the assumed earnings rate, along with the proposed assumed rate change increasing the UAL by an estimated $2.9 billion for a total UAL of $22.1 billion, including side accounts. Of the current $19.1 billion UAL, and prior to the proposed assumed rate increase, an estimated $9.2 billion, or one-half of the UAL is attributable to decreases in the assumed rate between the 2013-15 and the 2017-19 biennia.

Table-E: History of Assumed Rate/UAL Changes

Biennia	Actuarial Valuation	Prior Assumed Rate	Adopted Assumed Rate	Unfunded Accrued Liability Increase (*estimated*)
2023-25	2021	7.20%	6.90%	$2.9 billion
2017-19	2017	7.50%	7.20%	$2.3 billion
2015-17	2015	7.75%	7.50%	$4.2 billion
2013-15	2013	8.00%	7.75%	$2.7 billion

With a 2023-25 estimated statewide PERS-eligible biennial payroll of $26.8 billion, a 2.7% employer contribution rate increase translates into an incremental cost increase of $725 million, with $590 million, or 82%, of this amount attributable to the change in the assumed rate. The PERS Board had little if any discussion of employer's ability to pay for this level of increase and little substantive discussion of the reduction to benefits caused by the reduction in the assumed earnings rate for select employees.

Final 2023-25 Advisory and Adopted Employer Contribution Rates
Changes to actuarial methods and assumptions have financial impacts to the UAL and consequently employer contribution rates. The estimate, as noted above, is preliminary due to the fact that the estimate does not take into consideration the impact of 2021 investment earning (once known in the spring of 2022), or rate collaring, or the routine growth in the UAL (i.e., carry costs). The totality of these and other lessor actuarial changes will be reflected in the 2021 valuation and Board-adopted employer contribution rates for the 2023-25 biennium.

Advisory and adopted employer contribution rates for the 2023-25 biennium and adopted by the PERS Board will differ materially from what was reported by PERS in the agency's preliminary report and as outlined in this analysis. For example, the final statewide preliminary advisory rate of 21.34%, as reported by the PERS actuary in October 2021, will be 3.41% higher (rather than 2.7% noted above) than the 2021-23 final employer contribution rate of 17.93%. With a 2023-25 estimated statewide PERS-eligible biennial payroll of $26.8 billion, a 3.41% collared net employer contribution rate increase translates into an incremental cost increase of $1.2 billion above the 2021-23 biennium. Systemwide, PERS employer contributions are currently estimated to increase from $4.7 billion for the 2021-23 biennium to $5.9 billion for the 2021-23 biennium. This estimate will continue to be refined during the regular PERS Board's rate setting process.

Recommendation: The Legislative Fiscal Office recommends that the Joint Interim Committee on Ways and Means acknowledge receipt of the report.

43
Public Employees Retirement System
Heath

Request: Report on changes to actuarial methods and assumptions used to value PERS' assets and liabilities, as required by Senate Bill 1049 (2019).

Recommendation: Acknowledge receipt of the report.

Discussion: The Public Employees Retirement System (PERS) is required to report to the Joint Interim Committee on Ways and Means on changes to actuarial methods and assumptions and any associated impacts on liabilities and employer rates at least 30 days prior to adopting such changes. The PERS Board formally adopts actuarial methods and assumptions every two years as part of its two-year employer rate setting cycle. These methods and assumptions form a key input into the employer rates the PERS Board will adopt for the 2023-25 biennium, during the Fall of 2022. PERS provided a report for the September meeting of the Interim Committee on Ways and Means on its plan to change its actuarial methods and assumptions on August 18, 2021, and the PERS Board formally adopted those changes at its October 1, 2021 board meeting.

The PERS Board changed several of its major actuarial methods and assumptions for the 2023-25 rate cycle. Most importantly, the Board reduced the assumed rate of return for the Oregon Public Employees Retirement Fund (OPERF) from 7.2% to 6.9%. PERS' actuaries recommended the Board reduce the assumed rate of return to 7.0% or lower given the most recent projections of investment returns. Briefly, PERS' actuary Milliman projected 20-year returns at 6.27%, the Oregon Investment Council's (OIC) contractor Meketa projected 20-year returns at 6.6%, and a survey of industry professionals by Horizon projected returns over a ten-year time horizon at 6.8%.

Historically, the PERS Board has given significant weight to the OIC's projections of future returns due to OIC's familiarity with the OPERF portfolio and the opportunity for direct input from OIC's staff. In this case, the Board elected to further analyze the components of the OIC projection, decomposing the projected 6.6% increase into its components parts of 4.5% investment returns before inflation plus a 2.1% rate of inflation. In reviewing these assumptions in conjunction with the assumption for overall inflation (discussed below), the Board decided to use its assumed inflation rate of 2.4% in place of OIC's assumption of 2.1% to reach an assumed rate of return of 6.9%.

The proposed assumed rate of 6.9% is slightly lower than those of other public plans: in 2021, plans had an average return assumption of 7.12% and a median of 7.0%, which reflects a steadily declining outlook for long-term investment returns. Specifically, low fixed income returns are expected over the projection period. Like other public plans, PERS has steadily walked down its assumed rate over time from 8.0% in 2011 to 6.9% in 2021. Given this history and that the proposed assumed rate is higher than what PERS' investment advisors have projected, it is not clear whether the proposed reduction represents a stable 20-year investment outlook or another point along a continued downward trajectory.

The reduction in the assumed rate of return was made based on expected future returns rather than the past performance of the OPERF, which is managed by the OIC. As of September 30,

2021, the OPERF had returned an average of 9.94% per year over the period from October 2011 to September 2021, higher than the 6.9% rate of return recommended by the PERS Board. Despite this, the PERS Board anticipates the OPERF is unlikely to realize the same level of returns in the future, as the recent increase in asset prices in public equities and fixed income (which, as of September 2021, together account for approximately half of the value of the OPERF) will be difficult to replicate at current asset valuations.

Second, the PERS Board reduced its inflation assumption from 2.5% to 2.4%. The assumed inflation rate is used to project system payroll growth out into the future as well as influencing the assumed rate of investment return and health care inflation. This aligns with the Social Security Administration's current 30-year average inflation assumption of 2.4%. Future inflation estimates using the relative price of inflation protected Treasury Bonds imply a 10-year inflation rate of 2.41% and a 20-year inflation rate of 2.28%.

A third change made by the PERS Board was to its rate collaring policy. Rate collaring is a tool used by the Board to limit the rate at which PERS employer rates can grow or shrink biennium over biennium in order to achieve the Board's goals of stable and predictable employer rates. The Board's prior rate collaring method was put into place in 2005. As a result of a recommendation from an actuarial audit required by SB 1049 (2019), the Board worked with its actuaries to review and update its rate collaring methodology into the future.

The prior rate collar policy limited the change in employer rates to 20% (or 3.0% of payroll, if greater) in either direction when the system is funded at 80% or higher; this rate of change increases incrementally to limit changes of 40% (or 6.0% of payroll) in either direction when the system is funded at 60% or less. The new rate collar will apply only to the "UAL rate" (the portion of the rate used to fund benefits for retirees or inactive members) where the prior policy applied to both the UAL rate and the "normal cost" (the portion of the rate used to fund benefits for the current workforce). The Board is proposing to limit increases in the Tier 1 / Tier 2 UAL rate for employers who are members of a rate pool to 3.0% of payroll, while *decreases* in the Tier 1 / Tier 2 UAL rate will not be allowed under the new policy until the rate pool reaches 87% funded status or better, at which point decreases will be allowed on a phased in basis up to 3.0% of payroll when the rate pool is 90% funded. Independent employers who are not a member of a rate pool for their Tier 1 and Tier 2 liabilities will have a rate collar policy more similar to the current policy, allowing changes up to 4.0% of payroll or 33% of the difference between the collared and uncollared rates. OPSRP will have a rate collar of 1.0% of payroll for increases in the UAL rate and will have a policy of not allowing decreases in the UAL rate until the rate pool reaches 87% funded status.

For the 2021-23 employer rates, neither of the large Tier 1 / Tier 2 rate pools nor OPSRP were under a rate collar. As of December 31, 2019, employer rate pools (including side accounts) ranged between 82.9% and 73.2% funded. Given the current funded status, in the short to medium term, it is reasonable to expect the new rate collar policy to exhibit a ratcheting effect, allowing increases in the UAL rate up to 3.0% of payroll per biennium but not allowing decreases in the event that investment earnings are volatile and spike upwards. This effect shows most clearly in the modelling of the system's future funded status performed by PERS' actuaries. The actuaries simulated future investment returns for 10,000 different economic scenarios and examined how the new rate collar would affect the funded status of the system. Under scenarios where investment results are strong, the system will end up better funded at the end of 2038 than under the current policy, while under scenarios where investment results are very weak the new rate collar would result in the same or slightly worse funded status during that same period.

Fourth, the Board changed the amortization period for newly accrued Tier 1 / Tier 2 unfunded actuarial liabilities (UAL) back to 20 years. SB 1049 directed the Board to re-amortize its Tier 1 / Tier 2 unfunded actuarial liabilities (UAL) over a 22-year period starting in 2019, to be fully paid off in 2041. While the current Tier 1 / Tier 2 UAL remains on this schedule, this change will ensure any new Tier 1 / Tier 2 liabilities accrued will be amortized over a 20-year period. The amortization period for OPSRP UALs remains 16 years. The Board changed the amortization of RHIA and RHIPA programs to amortize the surplus on a rolling 20-year basis, with a policy to amortize any subsequent UAL on a 10-year closed basis. This is due to an actuarial surplus in both the RHIA and RHIPA program caused by fewer members enrolling than expected and a change in the contracts for health insurance from self-insured contracts, which required PERS to maintain reserves to pay excess claims, to fully insured contracts, where reserves are no longer required to be maintained.

The Board also changed its assumption related to the administrative expenses for PERS from $81 million to $118 million per biennium. This change is due to investments in information technology projects necessitated by SB 1049 (2019), inflation, and increases in the state's central administrative charges.

Finally, the Board updated a number of other demographic assumptions to match the most recent employer experience, including changes to the mortality assumption for school district males, changes to the retirement rates for certain member categories and service bands to more closely align with recent and expected future experience and increasing the age at which it is assumed all members retire, increasing the merit component of the salary increase assumptions, changing the assumption on pre-retirement termination of employment for one member type, reducing the assumed rates of certain types of disability, increasing the unused vacation and unused sick leave assumptions for certain member types, changing the participation assumptions for retiree health insurance programs. and changing the final average salary assumption related to higher liability members. These demographic assumptions are estimated to increase the UAL by $0.3 billion and employer rates by 0.6% over the current amounts.

In total, the proposed changes to actuarial methods and assumptions will increase system liabilities from $91.8 billion under the previous assumptions to $95.1 billion and increases system-wide employer rates by 2.7% of payroll. Although not caused by changes in actuarial methods and assumptions, PERS has included the impact of legislation passed in the 2021 legislative session in its letter and presentation, which increases system liabilities to $95.3 million.

PERS' actuaries have used the updated actuarial methods and assumptions and the impact of legislative changes passed during the 2021 Legislative Session to calculate advisory employer rates for the 2023-25 biennium. On a system-wide basis, with everything else being equal, net employer rates will increase by 3.41% of payroll; 2.7 percentage points of that increase is due to changes in actuarial methods and assumptions. The 3.41% of payroll increase equates to approximately $1.2 billion in additional contributions, of which approximately $900 million will be paid by employers during the 2023-25 biennium. Final employer rates will not be set until the Fall of 2022 and will include additional adjustments, including the market value of plan assets as of December 2021, the impact of any legislative changes to benefits and system financing, the value of employer payrolls, the impacts of rate collars, changes inside account funding, changes in employee contributions, and the planned amortization of unfunded actuarial liabilities that were accrued in prior periods.

Oregon

Kate Brown, 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

October 21, 2021

The Honorable Senator Betsy Johnson, Co-Chair
The Honorable Senator Elizabeth Steiner-Hayward, Co-Chair
The Honorable Representative Dan Rayfield, Co-Chair
Joint Interim Committee on Ways and Means
900 Court Street NE
H-178 State Capitol
Salem, OR 97301-4048

Dear Co-Chairpersons:

Nature of the Request

As a follow up to our original letter of August 18, 2021, the Public Employees Retirement System (PERS) requests acknowledgement of receipt of this report on the PERS Board's preliminary approval of changes to actuarial methods and assumptions. This report is provided in accordance with Section 57 of Senate Bill 1049 (2019) (Chapter 355, 2019 Oregon Laws), which requires PERS to submit this report to the Joint Interim Committee on Ways and Means at least 30 days prior to the final adoption of actuarial methods and assumptions. Final adoption occurred at the October 1, 2021 PERS Board meeting.

Agency Action

On July 23, 2021, the PERS Board preliminarily approved actuarial methods and assumptions that will be used for the December 31, 2020 and December 31, 2021 actuarial valuations of the system. These actuarial methods and assumptions are based on the results of the 2020 Experience Study (attached) prepared by the Board's actuaries, Milliman.

In this preliminary action, the Board retained or changed the following actuarial methods and assumptions:

<u>ACTUARIAL METHODS</u>

- Retain the Funding Policy based on the following objectives, while they might have competing interests: transparent; predictable and stable rates; protect funded status; equitable across generations; actuarially sound; and GASB compliant.
- Retain continued use of the Entry Age Normal methodology.
- Change the rate collaring policy to use a fixed percent of pay with a decrease limit. The collar width proposed is 3% of pay for the Tier One/Tier Two UAL rate for the two large Tier One/Tier Two experience-sharing pools and 1% of pay for OPSRP, which pools its experience state-wide. The decrease limit will have a phase-in approach depending on funded status as shown in the chart below. Additionally, there will be a different rate collar for independent employers given their higher contribution-rate volatility. The width of the

independent rate collar for the Tier One/Tier Two UAL rate will be the greater of 4% of pay or one-third of the difference between the collared and uncollared UAL rates calculated at the last rate-setting valuation.

	Allowable UAL Rate Decrease	
Rate Pool Funded Status	Tier 1/Tier 2 Schools/SLGRP	OPSRP
87% or less	0.00%	0.00%
88%	1.00%	0.33%
89%	2.00%	0.67%
90% or more	3.00%	1.00%

- Retain the amortization period for OPSRP liability at 16 years.
- Change the amortization period for Tier One and Tier Two liability to 20 years. SB 1049 directed a one-time re-amortization of the full liability of those two tiers over a 22 year period, for the December 31, 2019 valuation, and the amortization period is being brought back down to 20 years as per the board's previous amortization policy.
- Change the policy for amortization of RHIA and RHIPA when in surplus as follows: When funded status is over 100% at a rate-setting valuation, amortize the actuarial surplus over Tier 1/Tier 2 payroll using a rolling 20-year amortization basis; Allow the resulting negative UAL Rate to offset the normal cost for the program, but not below 0.0%; If either program subsequently fell below 100%, the UAL would then be amortized over combined payroll following the existing 10-year closed, layered amortization policy.

NON-ECONOMIC ASSUMPTIONS

- Change the inflation rate to 2.4%, a reduction of 0.10%. This change affects all other assumptions including system payroll growth, investment return and health care inflation.
- Retain the real wage growth rate of 1.0%, which represents the increase in wages in excess of inflation for the whole population.
- Change the system payroll growth to 3.4%, a reduction of 0.10%. This is assumed to equal the sum of inflation and real wage growth.

ECONOMIC ASSUMPTIONS and ASSUMED RATE of RETURN

- Change the explicit assumptions regarding administrative expenses for Tier One/Tier Two and OPSRP given the increased cost as a result of implementing SB 1049.
- Change the assumed rate of return to 6.90%, a reduction of 0.30%. This reduction to the investment return assumption was based on an analysis of PERS' current target asset allocation using different sets of capital market outlook assumptions. PERS' actuaries,

Milliman, recommended that the Board reduce the assumed rate of return to below 7.00%. The 50th percentile of average annual returns for those outlooks across 10-year (one outlook) and 20-year (two outlooks) time horizons fell in the range between 6.27% and 6.80%. The median investment return assumption used by large public sector plans currently sits at 7.00%. The selected rate of 6.9% reflects the sum of OIC's real return rate of 4.5% and the intermediate Social Security inflation outlook of 2.4%.

DEMOGRAPHIC ASSUMPTIONS

- Retain, except as noted in the following sentence, the mortality assumptions using Pub-2010 base tables and mortality improvement scale based on 60-year unisex average Social Security experience updated to reflect most recent information available (January 2019). Change the mortality assumption for School District males to use a blend of 80% teacher mortality and 20% general mortality, rather than 100% teacher mortality used previously.
- Change retirement rates for certain member categories and service bands to more closely align with recent and expected future experience; also change (increase) age at which 100% retirement assumption starts to 70 for Police & Fire and 75 for all others.
- Change (increase) the merit component of the salary increase assumptions reflecting a blend of current assumption and recent observed experience.
- Change pre-retirement termination of employment assumptions to better reflect observed experience.
- Change (reduce) assumed rates of ordinary disability and general service duty disability to more closely match recent experience.
- Change final average salary assumption to more heavily weight experience for higher liability members and to more closely track recent experience as it relates to sick leave and vacation.

ACTUARIALLY DETERMINED IMPACT TO THE ACCRUED LIABILITY OF THE SYSTEM

Based on the October 1, 2021 adoption of the new assumptions and methodologies, the effect on combined Tier One, Tier Two and OPSRP liabilities based on Milliman's valuation work for the period ending December 31, 2020 would be to increase the Accrued Liability to $95.3 billion. The impact to the Accrued Liability with the new assumptions are shown below including the difference in moving from the current assumed rate of 7.2% to the new assumed rate of 6.9%.

12/31/2020 Accrued Liability	Assumed Return 7.2%	Assumed Return 6.9%
Current assumptions	$91.8 B	
Salary, Sick Leave, Vacation	$0.4 B	
Other Demographic Assumptions	$0.1 B	
Revised assumptions (before assumed return)	$92.4 B	$92.4 B
Assumed return	$0.0 B	$2.9 B
Revised assumptions	$92.4 B	$95.3 B

Numbers shown may not add due to rounding

LEGISLATIVE IMPACTS

Senate Bill 111 (2021) increased spousal death benefit for members who die while retirement eligible and either actively employed or recently terminated. This increased death benefit provided led to $0.1 -$0.2 billion of the $0.4 billion increase shown in the chart above.

ACTUARIALLY DETERMINED IMPACT TO EMPLOYER CONTRIBUTION RATES

On a final basis, the estimated effect on uncollared system-average advisory contribution rates for 2023-2025 based on Milliman's valuation work would be to add 1.2% to the Normal Cost and 1.5% impact to the Unfunded Actuarial Liability for a combined total of 2.7%. The impact to the Contribution Rate with the new assumptions is shown below including the difference in moving from the current assumed rate of 7.2% to the preliminary assumed rate of 6.9%.

	Assumed Return 7.2%		Assumed Return 6.9%	
	UAL	Normal Cost	UAL	Normal Cost
Salary/sick lv/vaca	0.2%	0.4%	0.2%	0.4%
Other assumptions	(0.1%)	0.0%	(0.1%)	0.0%
Assumed return	0.0%	0.0%	1.4%	0.8%
Total	**0.1%**	**0.4%**	**1.5%**	**1.2%**
Combined Total	**0.4%**		**2.7%**	

The final effect on combined Tier One, Tier Two and OPSRP liabilities as well as the 2023-2025 advisory contribution rates based on Milliman's valuation work for the period ending December 31, 2020 was presented to the PERS board at its October 1, 2021 board meeting. The PERS Board's final approval of changes to actuarial methods and assumptions took place at that meeting.

It is important to note that these are estimated impacts to the 2023-2025 contribution rates. The actual 2023-2025 rates will be determined based on the December 31, 2021 actuarial valuation.

Action Requested

PERS requests the Committee acknowledge receipt of the report.

Legislation Affected

No legislation is affected by this request.

Sincerely,

Kevin Olineck, Director

Attachment
2020 Experience Study