WASHINGTON STATE

2023 ACTUARIAL VALUATION

AUGUST • 2024

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Letter of Introduction
Actuarial Valuation Report
As of June 30, 2023

August 2024

As required under Chapter 41.45 of the Revised Code of Washington (RCW), this report documents the results of an actuarial valuation of the following Washington State retirement systems. A high-level overview of which employees are covered by each system can be found in the **Participant Data** section.

- Public Employees' Retirement System (PERS).
- Teachers' Retirement System (TRS).
- School Employees' Retirement System (SERS).
- Public Safety Employees' Retirement System (PSERS).
- Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF).
- Washington State Patrol Retirement System (WSPRS).

The primary purpose of this valuation is to determine contribution requirements for the systems listed above for the 2025-2027 Biennium based on a June 30, 2023, measurement date and under the funding policy established by the Legislature. This valuation also provides information on the funding progress and developments in the plans over the past year.

This report is organized into the following sections:

1. Summary of Key Results.
2. Actuarial Exhibits.
3. Participant Data.
4. Appendix.
5. Resources.

The **Summary of Key Results** provides a high-level summary of the valuation results for all systems combined, funding policy, key plan provisions, and commentary on risk. The **Actuarial Exhibits** provide detailed actuarial asset and liability information by retirement system. The **Participant Data** section provides key metrics of the participant data for each retirement system such as headcounts, average benefits, and average salary. The **Appendix** provide access to a summary of the principal actuarial assumptions and methods, major plan provisions, and additional information used to prepare this valuation. The **Resources** section outlines additional supplemental information found on our website.

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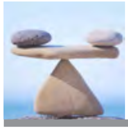

We encourage you to submit any questions you might have concerning this report to our e-mail address state.actuary@leg.wa.gov. We also invite you to visit our website (leg.wa.gov/osa), for further information regarding the actuarial funding of the Washington State retirement systems.

Sincerely,

Kyle Stineman, ASA, MAAA
Actuary

Matthew M. Smith, FCA, EA, MAAA
State Actuary

Sarah Baker, ASA, MAAA
Senior Actuarial Analyst

Graham Dyer
Senior Actuarial Analyst

I. SUMMARY OF KEY RESULTS

INTENDED USE

The purpose of this report is to develop contribution rates required to fund the Washington State retirement systems for the 2025-27 Biennium based on a June 30, 2023, measurement date, the funding policy described in this section, and any legislatively prescribed contribution rates. Throughout this report, we refer to those rates as "calculated contribution rates."

This report provides information on the funding progress and developments in the plans over the past year and changes in calculated contribution rates from the prior rate-setting valuation. This report also discloses the data, assumptions, and methods we used to develop the contribution rates. This report is not intended to satisfy the accounting requirements under the Governmental Accounting Standards Board (GASB) rules.

Similarly, this actuarial valuation is not intended to report on the overall health or financial condition of the pension system. Such information can be found in the *2023 Report on Financial Condition* (RFC), which we issue every two years. The key measures we use in the RFC to assess the health of a pension plan include affordability and solvency of the retirement plans.

CONTRIBUTION RATES

We determine the member and employer contribution rates as a percentage of salary. The following summary table shows contribution rates based on the 2023 valuation. The **Actuarial Exhibits** section of this report shows how we developed the contribution rates for 2023.

2023 Calculated Contribution Rates

		Plan 1	Plans 2/3
PERS	Member*	6.00%	6.57%
	Total Employer	8.62%	8.62%
TRS	Member*	6.00%	8.65%
	Total Employer	9.82%	9.82%
SERS	Member*	N/A	7.92%
	Total Employer	N/A	9.97%
PSERS	Member	N/A	7.71%
	Total Employer	N/A	9.76%
LEOFF	Member	0.00%	9.43%
	Employer	0.00%	5.66%
	State	0.00%	3.77%
WSPRS	Member	8.75%	8.75%
	Employer (State)	21.72%	21.72%

Note: Employer rates exclude administrative expense rate.

**Plan 3 members do not contribute to the defined benefit plan.*

The calculated contribution rates for 2023 reflect the modifications to the funding policy for PERS 1 and TRS 1 under Engrossed Substitute Senate Bill (ESSB) 5294 (Chapter 396, Laws of 2023) and the 7% Rate of Investment Return assumption adopted by the Pension Funding Council (PFC). The calculated rates do not include the PFC October 2021 action to phase-in the rate impacts from changes in the Rate of Investment Return assumption. The PFC action calls for a six-year contribution rate phase-in ending in the 2027-29 Biennium. The 2025-27 adopted contribution rates reflect a continuation of the six-year phase-in.

For more information, please refer to the contribution rate development in the **Actuarial Exhibits** section.

No member or employer or state contributions are required for LEOFF Plan 1, as the plan remains fully funded; see RCW 41.26.080(2). The LEOFF 2 calculated contribution rates for 2023 reflect the modified minimum contribution rate funding policy under Substitute House Bill (SHB) 1701, including an offset to the minimum rates for the 2025-27 Biennium.

PROJECTED CONTRIBUTION RATES

In addition to calculating contribution rates in this report, we also estimate contribution rates for future biennia based upon projected assets and liabilities. These projected rates can be found on our website and will be updated in the fall of 2024 to reflect the results from this *2023 Actuarial Valuation Report* (AVR). Please note that these projected rates may vary from rates calculated in future AVRs based on modifications to plan provisions, assumptions, and the actual experience of the systems.

CONTRIBUTION RATE-SETTING CYCLE

Under current Washington State law, in July of even-numbered years, the PFC reviews, and may adopt, the basic contribution rates that we calculate. These rates are based on an actuarial valuation performed on asset, participant, and plan information compiled in odd-numbered valuation years. In calculating basic contribution rates, we apply the statutory funding policies described in this section.

The basic rates adopted by the PFC will remain in place for the ensuing biennium, subject to revision by the Legislature. The LEOFF Plan 2 Retirement Board performs these duties for LEOFF 2 under the same cycle.

RCW 41.45.070 requires that a temporary and supplemental contribution rate increase be charged to fund the cost of benefit enhancements enacted following the adoption of the basic rates. Supplemental contribution rates are included in the basic rates at the beginning of the next contribution rate-setting cycle.

For reference, the following table compares the member and total employer contribution rates that were adopted by the PFC and the LEOFF Plan 2 Retirement Board against the rates that were calculated by the Office of the State Actuary (OSA).

2025-27 Contribution Rates			
		Calculated[1]	Adopted[2]
PERS 1	Member	6.00%	6.00%
	Total Employer	8.62%	8.20%
PERS 2/3	Member[3]	6.57%	6.15%
	Total Employer	8.62%	8.20%
TRS 1	Member	6.00%	6.00%
	Total Employer	9.82%	9.26%
TRS 2/3	Member[3]	8.65%	8.16%
	Total Employer	9.82%	9.26%
SERS 2/3	Member[3]	7.92%	7.59%
	Total Employer	9.97%	9.64%
PSERS 2	Member	7.71%	7.07%
	Total Employer	9.76%	9.12%
LEOFF 1	Member	0.00%	0.00%
	Employer	0.00%	0.00%
	State	0.00%	0.00%
LEOFF 2[4]	Member	9.43%	8.53%
	Employer	5.66%	5.12%
	State	3.77%	3.41%
WSPRS 1/2	Member	8.75%	8.75%
	Employer (State)	21.72%	17.71%

Note: Employer rates exclude administrative expense rate.

[1]Figures reflect calculated contribution rates for FY 2026. Total Employer rates for PERS, SERS, and PSERS are calculated to be 1.00% lower in FY 2027.

[2]Figures reflect adopted contribution rates for FY 2026. Total Employer rates for PERS, SERS, and PSERS are 1.00% lower in FY 2027.

[3]Plan 3 members do not contribute to the defined benefit plan.

[4]The LEOFF 2 Board adopts contribution rates for LEOFF 2. Please see the 2023 LEOFF 2 Actuarial Valuation Report for more information.

FUNDING POLICY

Washington State relies on systematic actuarial funding to finance the ongoing cost of the state retirement systems. Under this financing approach, we reduce the cost of future pension payments by the expected long-term return on invested contributions. The investment of these contributions is under the direction of the Washington State Investment Board (WSIB). RCW 43.33A.110 requires WSIB to maximize investment returns at a prudent level of risk.

The state's funding policy is found in Chapter 41.45 RCW — Actuarial Funding of State Retirement Systems. Under this funding policy, if all actuarial assumptions are realized and all future contributions required under this funding policy are made, we expect the funding policy to accumulate sufficient assets to provide for all future benefits for current members when due.

Funding policy includes the following goals:

- ❖ Provide a dependable and systematic process for funding the benefits to members and retirees of the Washington State retirement systems.
- ❖ Fully fund the retirement system Plans 2 and 3, and WSPRS, as provided by law.
- ❖ Fully amortize the total cost of LEOFF Plan 1 not later than June 30, 2024.
- ❖ Fully amortize the Unfunded Actuarial Accrued Liability (UAAL) in PERS Plan 1 and TRS Plan 1 within a rolling ten-year period using methods and assumptions that balance needs for increased benefit security, decreased contribution rate volatility, and affordability of pension contribution rates.
- ❖ Establish long-term employer contribution rates that will remain a relatively predictable proportion of future state budgets.
- ❖ Fund, to the extent feasible, all benefits for Plans 2 and 3 members over the working lives of those members so that the taxpayers who receive the services of those members pay the cost of their benefits.
- ❖ Based on the funding policy, the same contribution rate is charged to employers within each system regardless of the plan in which employees hold membership (except for LEOFF). In addition, all benefit increases that become effective after June 30, 2009, for PERS Plan 1 and TRS Plan 1 members, are funded solely from employer contributions over a fixed ten-year period.

Based on the funding policy, the same contribution rate is charged to employers within each system regardless of the plan in which employees hold membership (except for LEOFF). In addition, all benefit increases that become effective after June 30, 2009, for PERS Plan 1 and TRS Plan 1 members, are funded solely from employer contributions over a fixed ten-year period.

COMMENTS ON 2023 VALUATION RESULTS

Many factors influence actuarial valuation results from one measurement date to the next. These factors include changes in the plan provisions or funding policy, changes in assumptions or methods, and covered population and plan experience that varies from our expectations.

CHANGES IN PLAN PROVISIONS OR FUNDING POLICY

The Department of Retirement Systems (DRS) holds authority over certain sections of the Washington Administrative Code (WAC) which govern aspects of the state retirement system. Consistent with their authority, DRS lowered the saving fund regular interest from 5.5% to 2.75%, effective July 1, 2022. The Washington Administrative Code 415-02-150 provides information on regular interest credited to Plan 1 and Plan 2 individual accounts and the current savings fund interest rate can be found on the DRS website.

Laws passed during the 2024 Legislative Session that impacted the results in this report through benefit enhancements include the following:

- ❖ Second Substitute House Bill 2014 – Expands access to fully subsidized Interruptive Military Service Credit (IMSC) by broadening the definition of veteran to include certain qualifying discharges.
- ❖ Substitute Senate Bill (SSB) 6106 – Expands PSERS eligibility to include members who work at facilities serving residents who are civilly committed, or patients considered not guilty by reason of insanity.
- ❖ SHB 1985 – Provides a one-time, 3% Cost-Of-Living Adjustment (COLA) for eligible PERS 1 and TRS 1 retirees up to a maximum of $110 per month.
- ❖ SSB 6197 – Enacts four changes to the LEOFF Plan 2 Retirement System related to death benefits, the definition of "firefighter," managing overpayments, and disability benefits.

The laws noted above represent material changes to benefit plan provisions from the 2024 Legislative Session and are not meant to be exhaustive.

CHANGES IN ASSUMPTIONS OR METHODS

- This valuation does not include any changes to economic or demographic assumptions since the prior valuation.
- We adjusted our methods for calculating UAAL contribution rates in PERS 1 and TRS 1 to reflect the delay between the measurement date of calculated Plan 1 rates and when the rates are collected.
- We made an adjustment to our model to reflect past inflation experience when modeling future COLAs for current annuitants in all plans except PERS 1 and TRS 1

Please see the **Appendix** section of this report for more information and further method and assumption changes since the last valuation

CHANGES IN COVERED POPULATION AND PLAN EXPERIENCE

- The actual rate of investment return on the Market Value of Assets (MVA), for all plans, was 6.96% for Fiscal Year (FY) ending June 30, 2023.
- Salaries increases were notably higher-than-expected, particularly in the public safety plans.

Detailed gain and loss information by system can be found in the **Actuarial Exhibits** section of this report.

ACTUARIAL LIABILITIES

The following table summarizes key measures of actuarial liability along with the liabilities from last year's valuation. The Present Value of Fully Projected Benefits (PVFB) represents the total expected value of all future benefits payments for current members when discounted at the valuation interest rate. The Actuarial Accrued Liability identifies the portion of the PVFB that has been accrued or "earned" as of the valuation date based on the Entry Age Normal (EAN) actuarial cost method.

Actuarial Liabilities		
(Dollars in Millions)	**2023**	**2022**
All Systems		
Present Value of Fully Projected Benefits	$174,065	$160,589
Actuarial Accrued Liability	$140,437	$130,623
Valuation Interest Rate	7.00%	7.00%

See the **Actuarial Exhibits** section of this report for a summary of actuarial liabilities by system and plan. For projected benefit payments by year for each system and plan, please visit our Interactive Reports webpage. Also, see the Glossary on our website for brief explanations of the actuarial terms.

ASSETS

The following table shows the combined MVA and Actuarial Value of Assets (AVA) along with the approximate rates of investment returns for all the systems combined.

An AVA is used to limit the volatility in contribution rates and funded status due to annual investment earnings. We smooth (or defer recognition of) the difference between actual and expected annual investment returns over a specific period not to exceed eight years.

Assets		
(Dollars in Millions)	**2023**	**2022**
All Systems		
MVA	$144,174	$135,808*
AVA**	135,070	125,026
Member/Employer Contributions	4,901	4,246
Disbursements	(6,578)	(5,720)
Investment Return	9,411	273
Other Revenue	$632	$202
MVA Return***	6.96%	0.22%
AVA Return**	9.51%	9.71%

**Excludes adjustments made for anticipated future transfers of funds. Please see the 2022 AVR for more information.*

***The AVA is used in determining contribution rates and funded status.*

****Dollar-weighted rate of return on the MVA, net of expenses. Please note the dollar-weighted investment return may differ from the time-weighted investment return published by the WSIB for the same period.*

See the **Actuarial Exhibits** section of this report for a summary of assets by system and plan, and for the development of the AVA.

FUNDED STATUS

The following table displays a summary of combined funded status across all retirement systems included in this report. Please see the **Actuarial Exhibits** section for information on individual systems and plans.

Funded Status		
(Dollars in Millions)	**2023**	**2022**
All Systems		
a. Accrued Liability*	$140,437	$130,623
b. Market Value of Assets	144,174	136,492
c. Deferred Gains/(Losses)	9,104	11,466
d. Actuarial Value of Assets (b - c)	135,070	125,026
Unfunded Liability (a - d)	$5,368	$5,597
Funded Ratio (d / a)	96%	96%

Note: Totals may not agree due to rounding.

**Liabilities valued using Entry Age Normal cost method.*

Funded status is one of several measures that helps explain the health of a pension plan. The funded status represents the portion of the actuarial accrued liabilities covered by today's actuarial assets. This means a plan with 100% funded status has one dollar in actuarial assets for each dollar of accrued liabilities at the valuation date. A plan with funded status around 100% is generally considered to be on target with funding. However, funded status above/below 100% is not automatically considered over-funded/at-risk. The funded statuses presented in this report are not sufficient to determine whether a plan has enough assets to terminate or settle the plan obligations. Furthermore, a plan with a funded status above 100% may still require ongoing contributions.

COMMENTARY ON RISK

Actuarial Standards of Practice (ASOP) guide actuaries when performing and communicating their work. ASOP No. 51 – *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions* is specific to communicating risk in defined benefit pension plans, particularly in how actual future measurements may differ significantly from expected future measurements.

In the course of developing our actuarial valuation we make hundreds of assumptions, such as the level of returns on future investments, rates of retirement and mortality, and the future salary growth for active members. In some cases, small changes in these assumptions or unexpected plan experience can lead to significant changes in measurements, like the calculation of a plan's contribution rates or the projection of a plan's funded status. This can affect plan risk, and these sensitivities can evolve as the plans grow and mature over time. The Legislature's response to these changes and their action governing the state's pension system also affects plan risk. To help readers better understand some of these risks and their potential impacts, we have a Commentary on Risk webpage which can be found on our website.

In the **Actuarial Exhibits** section of this report, we have also included the impact to the total retirement systems' funded status from changes in assumed rates of investment return and mortality. One such illustration shows the change to plan liabilities if the Commingled Trust Fund portfolio was invested in low-default-risk fixed income securities.

SUMMARY OF PARTICIPANT DATA

The following table summarizes participant data used in the actuarial valuation for the plan year ending June 30, 2023, along with information from the 2022 AVR. See the **Participant Data** section of this report for participant data summarized by system and plan.

Participant Data		
All Systems	**2023**	**2022**
Active Members		
Number	352,278	339,636
Average Annual Salary	$83,812	$78,865
Average Attained Age	45.8	46.1
Average Service	10.3	10.6
Retirees and Beneficiaries		
Number	224,021	216,729
Average Annual Benefit	$26,742	$25,741
Terminated Members		
Number Vested	71,888	70,302
Number Non-Vested*	172,849	168,695

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

KEY ECONOMIC ASSUMPTIONS

This table shows key economic assumptions used in this actuarial valuation. There were no changes in these assumptions from our prior year's valuation. Please see our *2023 Economic Experience Study* (EES) for information on the development of these assumptions and the asset allocation policy.

Key Assumptions	
All Systems	
Valuation Interest Rate	7.00%
General Salary Growth	3.25%
Inflation	2.75%

II. ACTUARIAL EXHIBITS

Office of the State Actuary

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Actuarial Certification Letter
Actuarial Valuation Report
As of June 30, 2023

August 2024

This report documents the results of an actuarial valuation of the retirement plans defined under Chapters 41.26, 41.32, 41.35, 41.37, 41.40, and 43.43 of the Revised Code of Washington (RCW). The primary purpose of this funding valuation is to determine contribution requirements for the retirement plans for the 2025-27 Biennium based on a June 30, 2023, measurement date, consistent with the prescribed funding policies. This valuation also provides information on the funding progress and developments in the plans over the past year. This valuation report should not be used for other purposes. Please replace this report with a more recent report when available.

Future actuarial measurements may differ significantly from the current measurements presented in this report if plan experience differs from that anticipated by the assumptions, or if changes occur in the methods, assumptions, plan provisions, or applicable law. The Risk Assessment webpage provides further information on the range and likelihood of potential outcomes that vary from expected results. The Commentary on Risk webpage provides additional risk education.

The valuation results summarized in this report involve calculations that require assumptions about future economic and demographic events. We believe that the assumptions and methods used in the underlying valuation are reasonable and appropriate for the primary purpose stated above. However, the use of another set of assumptions and methods could also be reasonable and could produce materially different results. Actual results may vary from our expectations.

For all plans except for the Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF) Plan 2, the assumptions used in this valuation for investment return, inflation, salary growth, and membership growth were prescribed by the Pension Funding Council (PFC) and are subject to revision by the Legislature. For LEOFF Plan 2, these assumptions are prescribed by the LEOFF Plan 2 Retirement Board. Please see our ***2023 Economic Experience Study*** (EES) for further information on economic assumptions. We developed the demographic assumptions used in this valuation during the ***2013-2018 Demographic Experience Study***.

In our opinion, the combined effect of all the assumptions used in this funding valuation to calculate actuarially determined contribution rates is expected to have no significant bias.

According to ASOP 4 – *Measuring Pension Obligations And Determining Pension Plan Costs Or Contributions*, a "contribution allocation procedure" is defined as a procedure that determines the actuarially determined contributions for a plan. The procedure uses an actuarial cost method and may use an asset valuation method, an amortization method, or an output smoothing method.

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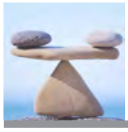


The Legislature prescribed the contribution allocation procedures for all the plans in this report including prescribed amortization and asset valuation methods. In our opinion, all the methods under the contribution allocation procedures are reasonable and produce reasonable actuarially determined contributions. The contribution allocation procedures are consistent with all plans accumulating sufficient assets to pay benefit payments when due assuming all assumptions are realized and actuarially determined contributions are made when due.

The Legislature prescribed the use of the aggregate actuarial cost method to determine contribution requirements for the opens plans in this report. This is a standard actuarial cost method applied in a standard manner. The cost method does not produce an Unfunded Actuarial Accrued Liability (UAAL) as no unfunded benefits are funded outside the plan's normal cost contributions. Based on the results of our most recent **Projections Model** (2022 Valuation Projections Model), if all assumptions are realized and all actuarially determined contributions are made when due, we expected all opens plans to reach a funded status, calculated under the Entry Age Normal actuarial cost method, of at least 100% within approximately the next five years. After reviewing the results of this actuarial valuation and considering the expected impact of material changes since our last projections model, including the impact of the PFC (and LEOFF 2 Board) adopting contribution rates below actuarially determined levels for the 2025-27 Biennium, we, based on our professional judgment, continue to expect the plans to reach a funded status of at least 100% within a similar time frame as our prior projections.

The actuarial cost method prescribed by the Legislature for the Public Employees' Retirement System (PERS) Plan 1 and the Teachers' Retirement System (TRS) Plan 1 includes a non-standard amortization method since it includes payroll outside the plan. Additionally, the contribution allocation procedure includes prescribed contribution rates, excluding those used to fund past benefit improvements, through the 2025-27 Biennium and minimum contribution rates effective at the beginning of the 2027-29 Biennium. All contributions required under this allocation procedure are necessary to fully amortize the UAAL in these plans. Failure to make all future required contributions may result in premature plan insolvency.

The actuarial cost method for PERS 1 and TRS 1 is also non-standard in its use of the employer normal cost rate from the Plans 2/3 instead of the underlying Plan 1 employer normal cost rate. However, we find this method reasonable and appropriate given the limited remaining future salary in Plan 1 and the relatively short period for amortizing the UAAL. Furthermore, Plan 1 member normal cost rates are fixed in statute at 6% and the use of the Plan 2/3 employer normal cost for Plan 1 allows the Legislature to charge all employers the same contribution rate regardless of the plan in which employees hold membership (except for LEOFF).

As noted above, no amortization methods are necessary to calculate actuarially determined contributions for the opens plans. For LEOFF 1, no contributions (or amortization method) are required when the plan's assets exceed the present value of fully projected benefits. For PERS 1 and TRS 1, the Legislature prescribed two amortization methods to determine total Plan 1 UAAL rates. Benefit improvements enacted after 2009 are amortized over a fixed ten-year period. Any remaining UAAL, the "base UAAL," is funded through a rolling ten-year amortization period with minimum contribution rates effective at the beginning of the 2027-29 Biennium. Due to the rolling amortization period, minimum contributions may be required to fully amortize the base UAAL depending on future experience. We expect these amortization methods to fully amortize benefit improvements within a reasonable period and reduce the base UAAL by a reasonable amount each year.

Total contributions for PERS 1 and TRS 1 under the contribution allocation procedure exceed the normal cost, plus interest on the PERS and TRS Plan 1 UAAL. As of this measurement, we expect the base UAAL to be fully amortized within the next five years and benefit improvements to be fully amortized within the next ten years. The actual period of amortization may vary from this estimate.

I (Matthew M. Smith) provided advice to the Legislature on the development of the asset valuation method, the modification of the original contribution allocation procedure for the open plans to add minimum contribution rates, and on the development of the contribution allocation procedure for PERS 1 and TRS 1.

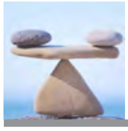
The asset smoothing method adopted during the 2003 Legislative Session (Chapter 11, Laws of 2003, E1) was developed to address the volatility of actuarially determined contributions under the aggregate actuarial cost method when used in combination with the existing asset allocation policy of the WSIB. The combination of the current asset smoothing method with any other funding method or asset allocation policy may not be appropriate. The Legislature may need to revisit the application of the current asset smoothing method with the Plan 1 funding method as the duration of liabilities in those plans becomes shorter.

The contribution allocation procedure for the open plans was modified from the original procedure to add minimum normal cost contribution rates. These minimum contribution rates ensure the plans receive adequate long-term funding and reduce the risk of the plans collecting inadequate contributions during short-term periods of significantly, better-than-expected experience.

The contribution allocation procedure for PERS 1 and TRS 1 includes a rolling ten-year amortization of the base UAAL to support the Legislature's goals under RCW 41.45.010(3) to "... balance needs for increased benefit security, decreased contribution rate volatility, and affordability of pension contribution rates." In recognition of the expected impact of an ongoing, rolling amortization period on plan funding, the procedure includes minimum base UAAL contribution rates to support the Legislature's desire to fully amortize the PERS 1 and TRS 1 UAAL. The procedure also relies on a ten-year fixed amortization of benefit improvements enacted after 2009 to support the goals under RCW 41.45.010(3) and recognize the shorter duration of expected future benefit payments in PERS 1 and TRS 1. The Legislature may need to revisit the length of this amortization period for future enacted benefit improvements as the duration of expected future benefit payments becomes shorter.

When calculating actuarially determined contributions in this valuation, we considered the period between the measurement date and collection of contributions based on this actuarial valuation. We adjusted PERS 1 and TRS 1 base UAAL rates to account for expected contributions during this period. We determined that no adjustments were necessary for the open plans.

The Department of Retirement Systems (DRS) provided us with audited member and beneficiary data as of June 30, 2023. We checked the data for reasonableness as appropriate based on the purpose of the valuation. The Washington State Investment Board and DRS provided audited financial and asset information as of June 30, 2023. We relied on all the information provided as complete and accurate.



In our opinion, this information is adequate and substantially complete for purposes of this valuation.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this report is intended to be complete, we are available to offer extra advice and explanations as needed.

Sincerely,

Kyle Stineman, ASA, MAAA
Actuary

Matthew M. Smith, FCA, EA, MAAA
State Actuary

CONTRIBUTION RATES

Calculated Member and Employer Rate Summary					
		Plan 1		Plans 2/3	
		2023	2021	2023	2021
PERS	**Member***	**6.00%**	**6.00%**	**6.57%**	**7.20%**
	Employer (Normal Cost)	6.57%	7.20%	6.57%	7.20%
	Employer (Plan 1 UAAL)**	2.05%	3.85%	2.05%	3.85%
	Total Employer	**8.62%**	**11.05%**	**8.62%**	**11.05%**
TRS	**Member***	**6.00%**	**6.00%**	**8.65%**	**8.64%**
	Employer (Normal Cost)	8.72%	9.70%	8.72%	9.70%
	Employer (Plan 1 UAAL)**	1.10%	6.46%	1.10%	6.46%
	Total Employer	**9.82%**	**16.16%**	**9.82%**	**16.16%**
SERS	**Member***	**N/A**	**N/A**	**7.92%**	**8.47%**
	Employer (Normal Cost)	N/A	N/A	7.92%	8.47%
	Employer (PERS Plan 1 UAAL)**	N/A	N/A	2.05%	3.85%
	Total Employer	**N/A**	**N/A**	**9.97%**	**12.32%**
PSERS	**Member**	**N/A**	**N/A**	**7.71%**	**7.46%**
	Employer (Normal Cost)	N/A	N/A	7.71%	7.46%
	Employer (PERS Plan 1 UAAL)**	N/A	N/A	2.05%	3.85%
	Total Employer	**N/A**	**N/A**	**9.76%**	**11.31%**
LEOFF	**Member**	**0.00%**	**0.00%**	**9.43%**	**9.94%**
	Employer	**0.00%**	**0.00%**	**5.66%**	**5.96%**
	State (Normal Cost)	0.00%	0.00%	3.77%	3.98%
	State (Plan 1 UAAL)	0.00%	0.00%	0.00%	0.00%
	Total State	**0.00%**	**0.00%**	**3.77%**	**3.98%**
WSPRS	**Member**	**8.75%**	**8.61%**	**8.75%**	**8.61%**
	Employer (State)	**21.72%**	**24.10%**	**21.72%**	**24.10%**

Note: Employer rates exclude administrative expense rate.

**Plan 3 members do not contribute to the defined benefit plan.*

***2023 figures reflect ESSB 5294 (Chapter 396, Laws of 2023) which prescribes base PERS 1 and TRS 1 UAAL contribution rates through FY 2027. Figures reflect the prescribed base contribution rates for FY 2026. The prescribed base contribution rate is 1.00% lower in FY 2027 for PERS, SERS, and PSERS employers.*

TRS Plan 2 Maximum Member Contribution Rates					
Valuation Year	**Prior Max**	**Supplemental**	**New Max**	**Description**	**Source**
2022 - 2023	8.64%	0.01%	8.65%	Prospectively increased retirement benefits for certain annuitants.	C 410 L 23
2010 - 2021	8.63%	0.01%	8.64%	AFC protection against reduced salaries.	C 5 L 11
2007 - 2009	8.55%	0.08%	8.63%	Out-of-state service credit purchases.	C 101 L 08
2006	7.76%	0.79%	8.55%	Improved Subsidized ERFs for certain Plan 2/3 members.	C 491 L 07
2005	7.75%	0.01%	7.76%	Lowered vesting requirements for certain Plan 3 members.	C 33 L 06
1999 - 2004	6.59%	1.16%	7.75%	Subsidized ERFs for Plan 2/3 members.	C 247 L 00
1997 - 1998	N/A	N/A	6.59%		

Note: Maximum member contribution rates change each year by 50% of benefit improvements, except as stated in RCW 41.45.070.

WSPRS Plan 1/2 Maximum Member Contribution Rates					
Valuation Year	**Prior Max**	**Supplemental**	**New Max**	**Description**	**Source**
2023	8.74%	0.01%	8.75%	Modified the definition of "Veteran."	C 146 L 24
2022	8.61%	0.13%	8.74%	Modified the definition of "Veteran."	C 18 L 23
2019 - 2021	8.45%	0.16%	8.61%	Modified the definition of "Veteran" and leave cash-out as pensionable salary.	C 97 L 20
2017 - 2018	8.44%	0.01%	8.45%	Modified the definition of "Veteran."	C 61 L 18
2016*	7.68% 7.34%	0.76% 0.34%	8.44% 7.68%	Expanded the definition of pensionable overtime.	C 181 L 17
2014 - 2015	7.19%	0.15%	7.34%	L&I duty-related death benefits paid from pension trust fund on remarriage.	C 78 L 15
2009 - 2013	7.18%	0.01%	7.19%	Increased duty-related death benefits.	C 261 L 10
2008	6.95%	0.23%	7.18%	Survivor benefits for registered domestic partners.	C 522 L 09
2006 - 2007**	N/A	N/A	6.95%		

Note: Maximum member contribution rates change each year by 50% of benefit improvements, except as stated in RCW 41.45.070.

**This law stipulated a phased increase to the member maximum rate by applying 0.34% in FY 2018 and 0.76% in FY 2019.*

***The original maximum contribution rate of 7% was decreased by 0.05% for C 87 L 07 (raised maximum retirement age, 0.14% decrease) and C 488 L 07 (provided medical premium reimbursements for certain survivors, 0.09% increase).*

The following table compares the member and total employer contribution rates that were adopted by the PFC and the LEOFF Plan 2 Retirement Board against the rates that were calculated by OSA. Note the 2023-25 adopted rates we display include the supplemental rates charged following the 2023 and 2024 Legislative Sessions and modifications to the UAAL contribution rates for PERS 1 and TRS 1 under ESSB 5294 (Chapter 396, Laws of 2023).

Contribution Rates

		2023-25 Adopted[1]	2025-27 Calculated[2]	2025-27 Adopted[3]
PERS 1	Member	6.00%	6.00%	6.00%
	Total Employer	8.91%	8.62%	8.20%
PERS 2/3	Member[4]	6.36%	6.57%	6.15%
	Total Employer	8.91%	8.62%	8.20%
TRS 1	Member	6.00%	6.00%	6.00%
	Total Employer	9.66%	9.82%	9.26%
TRS 2/3	Member[4]	8.06%	8.65%	8.16%
	Total Employer	9.66%	9.82%	9.26%
SERS 2/3	Member[4]	7.76%	7.92%	7.59%
	Total Employer	10.31%	9.97%	9.64%
PSERS 2	Member	6.76%	7.71%	7.07%
	Total Employer	9.31%	9.76%	9.12%
LEOFF 1	Member	0.00%	0.00%	0.00%
	Employer	0.00%	0.00%	0.00%
	State	0.00%	0.00%	0.00%
LEOFF 2[5]	Member	8.53%	9.43%	8.53%
	Employer	5.12%	5.66%	5.12%
	State	3.41%	3.77%	3.41%
WSPRS 1/2	Member	8.75%	8.75%	8.75%
	Employer (State)	17.80%	21.72%	17.71%

Note: Employer rates exclude administrative expense rate.

[1]Adopted rates as of FY 2025 and including 2024 Session supplemental rates. Adopted rates for FY 2024 were 0.50% higher for PERS, SERS, and PSERS employers.

[2]2025-27 Calculated total employer contribtuion rates reflect ESSB 5294 (Chapter 396, Laws of 2023) which prescribes base PERS 1 and TRS 1 UAAL contribution rates through FY 2027. Figures reflect the prescribed base contribution rates for FY 2026. The prescribed base contribution rate is 1.00% lower in FY 2027 for PERS, SERS, and PSERS employers.

[3]Figures reflect the adopted contribution rates for FY 2026. The adopted total employer contribution rate is 1.00% lower in FY 2027 for PERS, SERS, and PSERS employers consistent with ESSB 5294 (Chapter 396, Laws of 2023).

[4]Plan 3 members do not contribute to the defined benefit plan.

[5]The LEOFF 2 Board adopts contribution rates for LEOFF 2.

The tables which follow show the development of the normal cost rates and the Plan 1 UAAL rates. Plan 2 members and members in WSPRS 1 pay the applicable normal cost only. Employers in each system pay the normal cost plus any applicable UAAL.

Consistent with current funding policy, the normal cost rates include minimum contribution rates to provide stable and adequate contribution rates over time. These minimum rates are a percent of the normal cost calculated under the EAN funding method. The percent is 70% for WSPRS Plans 1 and 2, 80, 90, or 100% for LEOFF Plan 2 (dependent on the funded ratio), and 80% for all other plans.

The calculated normal cost contribution rates are based on the 7% Rate of Investment Return assumption adopted by the PFC without adjustment for any contribution rate phase-in. The 2025-27 adopted normal cost contribution rates, however, do reflect a continuation of the contribution rate phase-in of the reduced Rate of Investment Return assumption.

Development of Normal Cost Rates			
(Dollars in Millions)	**PERS 2/3**	**TRS 2/3**	**SERS 2/3**
1. Calculated Member Normal Cost Rate			
a. Present Value of Fully Projected Benefits	$73,890	$35,064	$12,197
b. Valuation Assets	58,592	23,569	8,858
c. Unfunded Fully Projected Benefits (a - b)	15,298	11,495	3,338
d. Past Liability Balance	0	0	0
e. Adjusted Unfunded (c - d)	**$15,298**	**$11,495**	**$3,338**
Present Value of Projected Salaries to Current Members (PVS)			
f. Plan 1 PVS	N/A	N/A	N/A
g. Plan 2 PVS	$101,789	$36,416	$14,993
h. Plan 3 PVS	29,288	59,397	12,160
i. Weighted PVS (2f + 2g + h)	**$232,867**	**$132,229**	**$42,146**
j. Member Normal Cost (e / i)	6.57%	8.69%	7.92%
k. Member Minimum Contribution Rate	4.86%	5.91%	5.23%
l. Prior Year Member Maximum Contribution Rate	N/A	8.64%	N/A
m. Member Contribution Rate with Max/Min	6.57%	8.64%	7.92%
n. Change In Plan Provisions (Laws of 2024)*	0.00%	0.01%	0.00%
o. Calculated Member Contribution Rate (m + n)**	**6.57%**	**8.65%**	**7.92%**
2. Calculated Employer Normal Cost Rate			
a. Present Value of Fully Projected Benefits	$73,890	$35,064	$12,197
b. Valuation Assets	58,592	23,569	8,858
c. Unfunded Benefits (a - b)	15,298	11,495	3,338
d. Present Value of Member Contributions	6,687	3,146	1,188
e. Past Liability Balance	N/A	N/A	N/A
f. Employer Responsibility (c - d - e)	**$8,611**	**$8,349**	**$2,151**
Present Value of Projected Salaries to Current Members (PVS)			
g. Plan 1 PVS	N/A	N/A	N/A
h. Plan 2 PVS	$101,789	$36,416	$14,993
i. Plan 3 PVS	29,288	59,397	12,160
j. Total PVS (g + h + i)	**$131,077**	**$95,813**	**$27,153**
k. Employer Normal Cost (f / j)	6.57%	8.71%	7.92%
l. Employer Minimum Contribution Rate	4.86%	5.91%	5.23%
m. Employer Contribution Rate with Minimum	6.57%	8.71%	7.92%
n. Change In Plan Provisions (Laws of 2024)*	0.00%	0.01%	0.00%
o. Calculated Employer Contribution Rate (m + n)	**6.57%**	**8.72%**	**7.92%**
3. Adopted Normal Cost Rates for 2025-27			
a. Member Contribution Rate	6.15%	8.16%	7.59%
b. Employer Contribution Rate	6.15%	8.16%	7.59%
c. State Contribution Rate	N/A	N/A	N/A
d. Total Contribution Rate (a + b + c)	**12.30%**	**16.32%**	**15.18%**

Note: Totals may not agree due to rounding.

**Includes 2023 Legislation effective after measurement date of June 30, 2023.*

***Plan 3 members do not contribute to the defined benefit plan.*

Development of Normal Cost Rates *(Continued)*			
(Dollars in Millions)	**PSERS 2**	**LEOFF 2**	**WSPRS 1/2**
1. Calculated Member Normal Cost Rate			
a. Present Value of Fully Projected Benefits	$2,589	$25,392	$2,045
b. Valuation Assets	1,376	19,342	1,675
c. Unfunded Fully Projected Benefits (a - b)	1,213	6,050	370
d. Past Liability Balance	0	0	1
e. Adjusted Unfunded (c - d)	**$1,213**	**$6,050**	**$369**
Present Value of Projected Salaries to Current Members (PVS)			
f. Plan 1 PVS	N/A	N/A	$111
g. Plan 2 PVS	$8,031	$32,207	1,110
h. Plan 3 PVS	N/A	N/A	N/A
i. Weighted PVS (2f + 2g + h)	**$16,062**	**$64,413**	**$2,442**
j. Member Normal Cost (e / i)	7.55%	9.39%	15.09%
k. Member Minimum Contribution Rate	6.09%	9.22%	7.72%
l. Prior Year Member Maximum Contribution Rate	N/A	N/A	8.61%
m. Member Contribution Rate with Max/Min	7.55%	9.39%	8.61%
n. Change In Plan Provisions (Laws of 2024)*	0.16%	0.04%	0.14%
o. Calculated Member Contribution Rate (m + n)	**7.71%**	**9.43%**	**8.75%**
2. Calculated Employer Normal Cost Rate			
a. Present Value of Fully Projected Benefits	$2,589	$25,392	$2,045
b. Valuation Assets	1,376	19,342	1,675
c. Unfunded Benefits (a - b)	1,213	6,050	370
d. Present Value of Member Contributions	606	3,025	105
e. Past Liability Balance	N/A	N/A	1
f. Employer Responsibility (c - d - e)	**$606**	**$3,025**	**$263**
Present Value of Projected Salaries to Current Members (PVS)			
g. Plan 1 PVS	N/A	N/A	$111
h. Plan 2 PVS	$8,031	$32,207	1,110
i. Plan 3 PVS	N/A	N/A	N/A
j. Total PVS (g + h + i)	**$8,031**	**$32,207**	**$1,221**
k. Employer Normal Cost (f / j)	7.55%	9.39%	21.58%
l. Employer Minimum Contribution Rate	6.09%	9.22%**	7.72%
m. Employer Contribution Rate with Minimum	7.55%	9.39%	21.58%
n. Change In Plan Provisions (Laws of 2024)*	0.16%	0.04%	0.14%
o. Calculated Employer Contribution Rate (m + n)	**7.71%**	**9.43%**	**21.72%**
3. Adopted Normal Cost Rates for 2023-25***			
a. Member Contribution Rate	7.07%	8.53%	8.75%
b. Employer Contribution Rate	7.07%	5.12%	17.71%
c. State Contribution Rate	N/A	3.41%	N/A
d. Total Contribution Rate (a + b + c)	**14.14%**	**17.06%**	**26.46%**

Note: Totals may not agree due to rounding.

**Includes 2023 Legislation effective after measurement date of June 30, 2023.*

***LEOFF 2 minimum rates vary based on the plan's funded status as of the measurement date.*

****LEOFF 2 rates adopted by LEOFF 2 Board; all others adopted by the PFC. LEOFF 2 rate: 50% Member, 30% Employer, 20% State.*

The table which follows shows the development of the Plan 1 UAAL rates. Currently no UAAL contributions are required for LEOFF 1. All employers of PERS, SERS, and PSERS members contribute toward the PERS 1 UAAL, while all employers of TRS members contribute toward the TRS 1 UAAL.

The PERS 1 and TRS 1 UAAL contribution rates are comprised of two components. Benefit improvements enacted after 2009 are amortized over a fixed ten-year period. Any remaining UAAL, the "base UAAL," is funded through a rolling ten-year amortization period with minimum contribution rates of 0.50% effective at the beginning of the 2027-29 Biennium. For the 2025-27 Biennium, this base UAAL rate is replaced by prescribed rates.

Amortization of the Plan 1 UAAL

(Dollars in Millions)	PERS 1	TRS 1	LEOFF 1
a. Present Value of Fully Projected Benefits (PVFB)	$10,593	$7,691	$4,269
b. Valuation Assets	8,561	6,732	6,365
c Actuarial Present Value of Future Normal Costs	13	3	0
d. Balance of Plan 1 Benefit Improvements[1]	598	580	N/A
e. Contribution Receivable Adjustment[2]	855	168	N/A
f. Base UAAL (a - b - c - d - e)	**$566**	**$208**	**($2,095)**
g. Present Value of Projected Salaries[3]	$167,074	$77,032	N/A
h. Base UAAL Rate (f / g)	0.34%	0.27%	N/A
i. Plan 1 Benefit Improvement Rate	0.47%	0.94%	N/A
j. Change In Plan Provisions (Laws of 2024)	0.08%	0.16%	N/A
k. Actuarially Determined Total UAAL Rate (h + i + j)[4]	0.89%	1.37%	N/A
l. Prescribed Total UAAL Rate[5]	**2.05%**	**1.10%**	**N/A**
Adopted Total UAAL Rate for 2025-27[6]	**2.05%**	**1.10%**	**0.00%**

Note: Totals may not agree due to rounding.

[1]As stated in RCW 41.45.060, the cost of funding Plan 1 benefit improvements shall be amortized over a fixed 10-year period.

[2]Represents the present value of expected Base UAAL contributions made by employers between the measurement date of 6/30/2023 and the effective date of any contribution rate changes for the 2025-27 Biennium.

[3]Measured under the plan's amortization method.

[4]No LEOFF 1 UAAL contributions are required when the plan is fully funded under current methods and assumptions.

[5]ESSB 5294 (Chapter 396, Laws of 2023) prescribes base contribution rates for PERS 1 and TRS 1 through FY 2027. Figures represent the prescribed base contribution rates for FY 2026, plus the sum of applicable Benefit Improvement Rates. The prescribed base contribution rate for PERS 1 is 1.00% lower in FY 2027.

[6]The adopted contribution rate for PERS 1 is 1.00% lower in FY 2027 consistent with ESSB 5294 (Chapter 396, Laws of 2023).

The following tables provide more detailed information on the fixed ten-year benefit improvement and prescribed PERS 1 and TRS 1 total UAAL rates.

Benefit Improvement Amortization Rates (Dollars in Millions)				
Legislative Session	Benefit Improvement Bill	Amortization Period Remains Through FY	Current UAAL Balance	Fixed Amortization Rate
PERS 1				
2018	SSB 6340	2028	$80	0.10%
2020	EHB 1390	2030	125	0.11%
2022	SB 5696	2032	206	0.14%
2023	SB 5350	2033	186	0.12%
		Total	**$598**	**0.47%**
Laws of 2024*				
2024	SHB 1985	2034	$123	0.08%
TRS 1				
2018	SSB 6340	2028	$74	0.21%
2020	EHB 1390	2030	129	0.23%
2022	SB 5696	2032	198	0.27%
2023	SB 5350	2033	180	0.23%
		Total	**$580**	**0.94%**
Laws of 2024*				
2024	SHB 1985	2034	$119	0.16%

**Figures rely on fiscal note produced during 2024 Legislative Session for SHB 1985.*

PERS 1 and TRS 1 Prescribed Total UAAL Rates		
FY	2026	2027
PERS 1		
Prescribed Base UAAL Rate	1.50%	0.50%
Benefit Improvement Rate	0.55%	0.55%
Prescribed Total UAAL Rate	**2.05%**	**1.05%**
TRS 1		
Prescribed Base UAAL Rate	0.00%	0.00%
Benefit Improvement Rate	1.10%	1.10%
Prescribed Total UAAL Rate	**1.10%**	**1.10%**

We provide additional contribution rate calculations on our Interactive Reports webpage. This interactive report calculates member and employer contribution rates that vary based on the asset valuation method and discount rate that the user selects. The state's funding policy, defined under Chapter 41.45 RCW, does not vary based on these selections.

ACTUARIAL LIABILITIES

Present Value of Fully Projected Benefits					
(Dollars in Millions)	PERS		TRS		SERS
	Plan 1	Plans 2/3	Plan 1	Plans 2/3	Plans 2/3
Active Members					
Retirement	$178	$36,833	$49	$19,565	$5,825
Termination	0	4,672	0	4,213	1,026
Death	1	226	0	134	40
Disability	0	180	0	65	33
ROC[1] on Termination	0	684	0	102	113
ROC[1] on Death	2	194	1	40	22
Total Active	**$181**	**$42,788**	**$50**	**$24,118**	**$7,059**
Inactive Members					
Terminated Vested	$30	$4,296	$8	$1,679	$1,105
Terminated Non-Vested[2]	5	470	2	91	83
Service Retired[3]	9,476	25,017	7,129	8,286	3,646
Disability Retired	80	155	61	11	18
Survivors	821	855	441	175	103
TAP Annuities	0	309	0	705	183
Total Inactive	**$10,412**	**$31,102**	**$7,640**	**$10,947**	**$5,138**
All Members					
Laws of 2024[4]	$123	($125)	$119	$7	$1
2023 Total	**$10,716**	**$73,765**	**$7,810**	**$35,071**	**$12,198**
2022 Total	**$11,065**	**$67,129**	**$8,045**	**$31,902**	**$11,016**

Note: Totals may not agree due to rounding.

[1]Return of Contributions.

[2]Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.

[3]Includes liability from individuals who are entitled to a portion of the primary member's benefit (legal order payees).

*[4]Includes some 2023 Legislation effective after measurement date of June 30, 2023. Notable 2024 Legislation includes an ad hoc COLA for annuitants in PERS and TRS Plans 1 and an expansion of PSERS eligibility, including a transfer window for eligible members of PERS. Please see the **Appendix** for a full list of legislative changes included in the figures above.*

Present Value of Fully Projected Benefits *(Continued)*					
(Dollars in Millions)	PSERS	LEOFF		WSPRS	Total
	Plan 2	Plan 1	Plan 2	Plans 1/2	
Active Members					
Retirement	$1,872	$11	$13,851	$716	$78,900
Termination	263	0	264	6	10,444
Death	8	0	165	4	578
Disability	32	0	745	1	1,056
ROC[1] on Termination	56	0	140	3	1,098
ROC[1] on Death	9	0	73	1	342
Total Active	**$2,241**	**$11**	**$15,237**	**$731**	**$92,417**
Inactive Members					
Terminated Vested	$134	$0	$499	$37	$7,788
Terminated Non-Vested[2]	42	0	29	2	724
Service Retired[3]	165	1,880	8,850	1,172	65,620
Disability Retired	3	1,475	505	3	2,311
Survivors	3	902	272	100	3,672
TAP Annuities	0	0	0	0	1,197
Total Inactive	**$347**	**$4,258**	**$10,155**	**$1,314**	**$81,313**
All Members					
Laws of 2024[4]	$187	$0	$20	$4	$335
2023 Total	**$2,776**	**$4,269**	**$25,412**	**$2,049**	**$174,065**
2022 Total	**$2,302**	**$4,204**	**$23,018**	**$1,909**	**$160,589**

Note: Totals may not agree due to rounding.

[1]Return of Contributions.

[2]Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.

[3]Includes liability from individuals who are entitled to a portion of the primary member's benefit (legal order payees).

*[4]Includes 2023 Legislation effective after measurement date of June 30, 2023. Notable 2024 Legislation includes an ad hoc COLA for annuitants in PERS and TRS Plans 1 and an expansion of PSERS eligibility, including a transfer window for eligible members of PERS. Please see the **Appendix** for a full list of legislative changes included in the figures above.*

Entry Age Normal Accrued Liability[1]					
(Dollars in Millions)	PERS		TRS		SERS
	Plan 1	Plans 2/3	Plan 1	Plans 2/3	Plans 2/3
Active Members					
Retirement	$165	$26,731	$47	$12,268	$3,951
Termination	(2)	2,435	(0)	2,334	467
Death	1	155	0	84	26
Disability	0	76	0	23	13
ROC[2] on Termination	(0)	(353)	(0)	(61)	(33)
ROC[2] on Death	2	112	1	15	10
Total Active	**$166**	**$29,156**	**$47**	**$14,663**	**$4,435**
Inactive Members					
Terminated Vested	$30	$4,296	$8	$1,679	$1,105
Terminated Non-Vested[3]	5	470	2	91	83
Service Retired[4]	9,476	25,017	7,129	8,286	3,646
Disability Retired	80	155	61	11	18
Survivors	821	855	441	175	103
TAP Annuities	0	309	0	705	183
Total Inactive	**$10,412**	**$31,102**	**$7,640**	**$10,947**	**$5,138**
All Members					
Laws of 2024[5]	$123	($13)	$119	$7	$1
2023 Total	**$10,701**	**$60,245**	**$7,807**	**$25,616**	**$9,574**
2022 Total	**$11,047**	**$55,247**	**$8,041**	**$23,195**	**$8,712**

Note: Totals may not agree due to rounding.

[1]Calculated using the EAN cost method. This method is used in the funded ratio calculation and is not used to determine contribution requirements.

[2]Return of Contributions.

[3]Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.

[4]Includes liability from individuals who are entitled to a portion of the primary member's benefit (legal order payees).

[5]Includes 2023 Legislation effective after measurement date of June 30, 2023. Notable 2024 Legislation includes an ad hoc COLA for annuitants in PERS and TRS Plans 1 and an expansion of PSERS eligibility, including a transfer window for eligible members of PERS. Please see the ***Appendix*** *for a full list of legislative changes included in the figures above.*

Entry Age Normal Accrued Liability[1] *(Continued)*					
(Dollars in Millions)	PSERS	LEOFF		WSPRS	Total
	Plan 2	Plan 1	Plan 2	Plans 1/2	
Active Members					
Retirement	$976	$11	$8,407	$467	$53,025
Termination	102	0	46	1	5,383
Death	4	0	27	1	298
Disability	7	0	361	0	481
ROC[2] on Termination	(14)	0	(40)	(1)	(502)
ROC[2] on Death	4	0	37	1	182
Total Active	**$1,079**	**$11**	**$8,838**	**$470**	**$58,866**
Inactive Members					
Terminated Vested	$134	$0	$499	$37	$7,788
Terminated Non-Vested[3]	42	0	29	2	724
Service Retired[4]	165	1,880	8,850	1,172	65,620
Disability Retired	3	1,475	505	3	2,311
Survivors	3	902	272	100	3,672
Tap Annuities	0	0	0	0	1,197
Total Inactive	**$347**	**$4,258**	**$10,155**	**$1,314**	**$81,313**
All Members					
Laws of 2024[5]	$0	$0	$19	$4	$259
2023 Total	**$1,427**	**$4,269**	**$19,011**	**$1,787**	**$140,437**
2022 Total	**$1,173**	**$4,204**	**$17,336**	**$1,669**	**$130,623**

Note: Totals may not agree due to rounding.

[1]Calculated using the EAN cost method. This method is used in the funded ratio calculation and is not used to determine contribution requirements.

[2]Return of Contributions.

[3]Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.

[4]Includes liability from individuals who are entitled to a portion of the primary member's benefit (legal order payees).

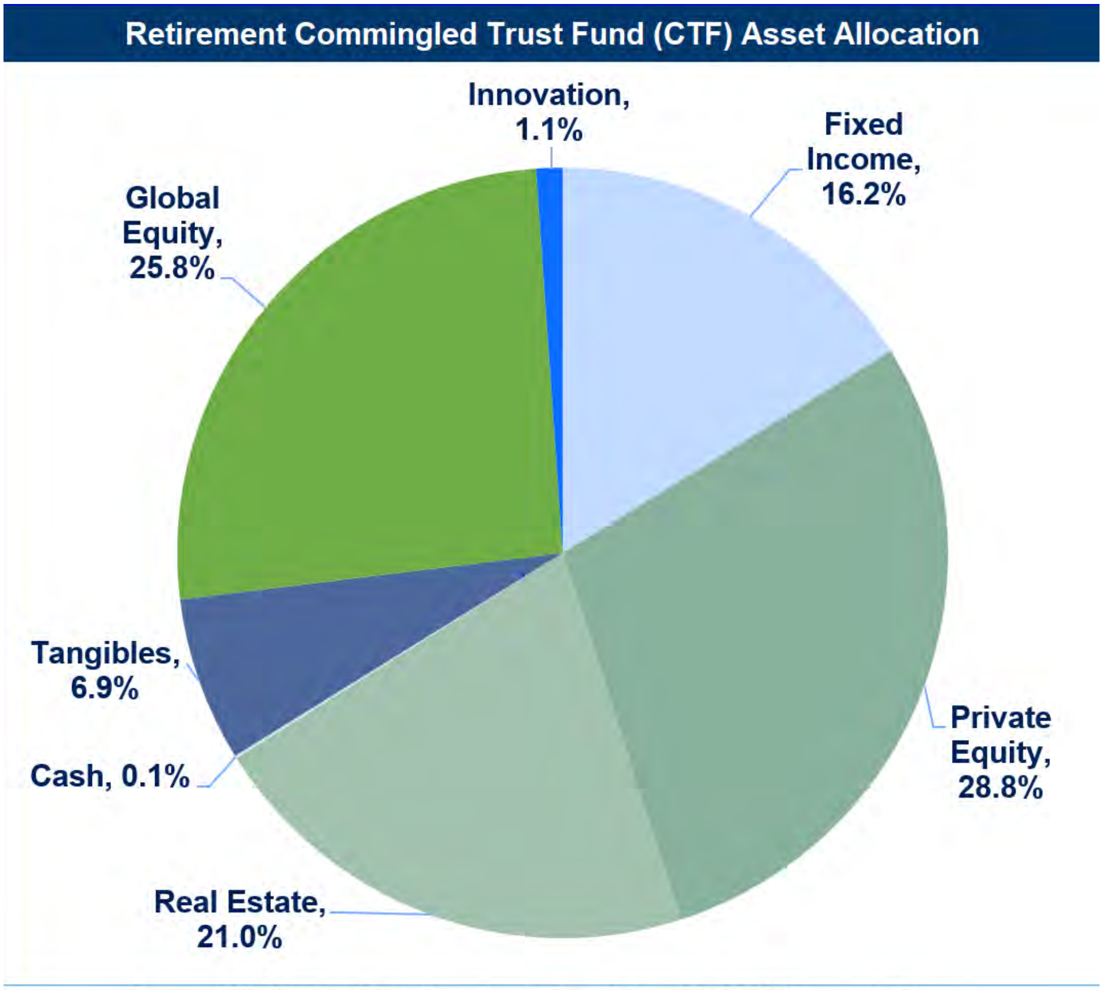
[5]Includes 2023 Legislation effective after measurement date of June 30, 2023. Notable 2024 Legislation includes an ad hoc COLA for annuitants in PERS and TRS Plans 1 and an expansion of PSERS eligibility, including a transfer window for eligible members of PERS. Please see the ***Appendix*** *for a full list of legislative changes included in the figures above.*

Some line items in the EAN accrued liability tables are negative. This is a result of how these benefits are accrued, over a member's working career, under the EAN actuarial cost method. The accrued liability for a given benefit provision is the difference between (1) today's value of all future benefits for that benefit definition and (2) how much of those future benefits are assumed to be accrued over the rest of the member's career. Item (1) is essentially split into annual "pieces" that are spread evenly across a career from first hire date to last assumed exit. Item (2) is how many more "pieces" they have left to accrue. For benefits like "Return Of Contributions (ROC) on Termination", while we assume members that are eligible for retirement will no longer elect an ROC benefit when they exit the system, they are still accruing the level piece of item (2) each year until they retire. So, in this instance, item (1) is zero but item (2) is positive. This means we get a negative number when subtracting item (2) from item (1).

Please note GASB mandates this methodology for the accrued liability calculation in financial reporting. We use the same methods in this report – a funding valuation – for easier comparison with financial reporting results.

We report the present and future value of benefit payments by year and by plan on our website. We also show how the present value of these benefit payments varies by interest rate assumptions. For more information or to view projected benefit payments, please visit our Interactive Reports webpage.

PLAN ASSETS



Source: Washington State Investment Board June 30, 2023, Quarterly Report.

Cash*: Highly liquid, very safe investments that can be easily converted into cash, such as Treasury Bills and money-market funds.*

Fixed Income*: Securities representing debt obligations and usually having fixed payments and maturities. Different types of fixed income securities include government and corporate bonds, mortgage-backed securities, asset-backed securities, convertible issues, and may also include money-market instruments.*

Innovation*: Fund that provides the ability to invest in a broad range of assets that fall outside the traditional asset classes or management style of existing asset classes.*

Global Equity*: Shares of U.S. and non-U.S. corporations that trade on public exchanges or "over the counter." The ownership of a corporation is represented by shares that are claimed on the corporation's earnings and assets.*

Private Equity*: The infusion of equity capital into a private company (one that is not available on the public markets). Private equity investments include securities that are not listed on a public exchange and are not easily accessible to most individuals. These investments range from initial capital in start-up enterprises to leveraged buyouts of mature corporations.*

Real Estate*: An externally managed selection of partnership investments with the majority of the partnerships invested in high-quality real estate leased to third parties.*

Tangibles*: The tangible asset portfolio invests in sectors such as infrastructure, timber, agriculture, natural resources, commodities, or other sectors consistent with the goals of the asset class.*

Each asset class is unique in terms of expected return, standard deviation, and correlation to other asset classes. Please see page 28 of the 2023 EES for more information.

The following tables show the MVA changes from the previous valuation.

Change in Market Value of Assets								
(Dollars in Millions)	PERS				TRS			
	Plan 1	TAP[1]	Plans 2/3 Pension[2]	Total	Plan 1	TAP[1]	Plans 2/3 Pension[2]	Total
2022 Unadjusted Market Value	**$9,093**	**$299**	**$58,535**	**$58,834**	**$6,837**	**$674**	**$22,469**	**$23,144**
Revenue								
Member Contributions	$3	$0	$694	$694	$1	$0	$212	$212
Employer/State Contributions	686	0	881	881	791[3]	0	678	678
Investment Return	609	21	4,075	4,096	460	49	1,586	1,635
Restorations[4]	1	0	36	36	0	0	5	5
Transfers In	0	24	1	25	0	51	2	53
Miscellaneous	0	0	0	0	0	0	0	0
Total Revenue	**$1,299**	**$45**	**$5,687**	**$5,732**	**$1,252**	**$99**	**$2,483**	**$2,582**
Disbursements								
Monthly Benefits	$1,164	$21	$1,971	$1,992	$863	$46	$609	$655
Refunds	2	0	70	70	1	0	8	8
Transfers Out	0	0	2	3	0	0	1	1
Expenses	1	0	1	1	0	0	0	0
Payables	0	0	0	0	0	0	0	0
Total Disbursements	**$1,167**	**$21**	**$2,044**	**$2,065**	**$864**	**$46**	**$619**	**$665**
2023 Market Value	**$9,226**	**$324**	**$62,177**	**$62,501**	**$7,225**	**$728**	**$24,333**	**$25,061**

Note: Totals may not agree due to rounding.

[1]Assets from purchased Total Allocation Portfolio (TAP) annuities by Plan 3 members are combined with the Plan 2/3 pension assets for purposes of calculating contribution rates.

[2]Excludes defined contribution portion of Plan 3 assets.

[3]Reflects $250 million appropriation on June 30, 2023 under ESSB 5294 (Chapter 396, Laws of 2023). This replaces the adjustment, as of June 30, 2022, found in the 2022 AVR.

[4]Includes additional annuity purchases and service credit purchases.

Change in Market Value of Assets *(Continued)*								
(Dollars in Millions)	SERS			PSERS	LEOFF		WSPRS	All Systems
	TAP[1]	Plan 2/3 Pension[2]	Total	Plan 2	Plan 1	Plan 2	Plans 1/2	
2022 Unadjusted Market Value	**$179**	**$8,568**	**$8,747**	**$1,272**	**$6,989**	**$19,162**	**$1,730**	**$135,808**
Revenue								
Member Contributions	$0	$127	$127	$51	$0	$226	$10	$1,323
Employer/State Contributions	0	244	244	51	0	226	21	3,578
Investment Return	13	602	615	93	457	1,327	118	9,411
Restoration[4]	0	2	2	0	0	18	1	62
Transfers In	14	0	15	0	0	476[3]	0	569
Miscellaneous	0	0	0	0	0	0	0	0
Total Revenue	**$27**	**$975**	**$1,002**	**$195**	**$457**	**$2,273**	**$151**	**$14,944**
Disbursements								
Monthly Benefits[5]	$13	$299	$312	$10	$572	$802	$84	$6,455
Refunds	0	10	10	8	1	13	1	113
Transfers Out	0	1	1	0	0	0	0	5
Expenses	0	0	0	0	0	2	0	5
Payables	0	0	0	0	0	0	0	0
Total Disbursements	**$13**	**$310**	**$323**	**$18**	**$573**	**$818**	**$85**	**$6,578**
2023 Market Value	**$193**	**$9,234**	**$9,427**	**$1,449**	**$6,874**	**$20,617**	**$1,795**	**$144,174**

Note: Totals may not agree due to rounding.

[1]Assets from purchased TAP annuities by Plan 3 members are combined with the Plan 2/3 pension assets for purposes of calculating contribution rates.

[2]Excludes defined contribution portion of Plan 3 assets.

[3]Reflects the transfer of the Benefit Improvement Account fund into the LEOFF 2 trust Under SBH 1701 (Chapter 125, Laws of 2022) during FY 2023. This replaces the adjustment, as of June 30, 2022, found in the 2022 AVR.

[4]Includes additional annuity purchases and service credit purchases.

[5]LEOFF Plan 1 monthly benefits includes $188 million provided under SSB 5791 (Chapter 168, Laws of 2022). LEOFF Plan 2 monthly benefits includes $215 million provided under SHB 1701 (Chapter 125, Laws of 2022).

Calculation of Actuarial Value of Assets							
(Dollars in Millions)			PERS 1	PERS 2/3	TRS 1	TRS 2/3	SERS 2/3
Investment Gains and (Losses) for FY							
a. Market Value (MV) at 6/30/2023			$9,226	$62,501	$7,225	$25,061	$9,427
b. Expected 7.0% Return*			$620	$4,104	$468	$1,630	$615
c. Actual Return			$609	$4,096	$460	$1,635	$615
Investment Gain/(Loss) (c - b)			($11)	($8)	($8)	$5	$0
Actual Rate of Return			6.88%	6.99%	6.89%	7.02%	7.00%
Smoothing Period			1	1	1	1	1
Deferred Gains and (Losses)							
Plan Year Ending	Smoothing Period	Years Remaining					
6/30/2023	1	0	$0	$0	$0	$0	$0
6/30/2022	7	5	(448)	(2854)	(336)	(1110)	(421)
6/30/2021	8	5	1,112	6,763	829	2,602	990
d. Total Deferral			**$664**	**$3,909**	**$493**	**$1,492**	**$569**
Market Value less Deferral (a - d)			$8,561	$58,592	$6,732	$23,569	$8,858
70% of Market Value of Assets			$6,458	$43,751	$5,058	$17,542	$6,599
130% of Market Value of Assets			$11,993	$81,251	$9,393	$32,579	$12,255
Actuarial Value of Assets**			**$8,561**	**$58,592**	**$6,732**	**$23,569**	**$8,858**
Ratio (AV / MV)			93%	94%	93%	94%	94%

Note: Totals may not agree due to rounding. The gain/(loss) for plan years not shown has been fully recognized.

**Dollar weighted rate of return assuming cashflows occur mid-year excluding the $250 million appropriation to the TRS 1 trust on June 30, 2023 under ESSB 5294 (Chapter 396, Laws of 2023).*

***Actuarial Value of Assets can never be less than 70% or greater than 130% of the Market Value of Assets.*

Calculation of Actuarial Value of Assets *(Continued)*							
(Dollars in Millions)			PSERS 2	LEOFF 1	LEOFF 2	WSPRS 1/2	Total
Investment Gains and (Losses) for FY							
a. Market Value (MV) at 6/30/2023			$1,449	$6,874	$20,617	$1,795	$144,174
b. Expected 7.0% Return*			$92	$470	$1,346	$119	$9,462
c. Actual Return			$93	$457	$1,327	$118	$9,411
Investment Gain/(Loss) (c - b)			$1	($12)	($19)	($1)	($51)
Actual Rate of Return			7.10%	6.82%	6.90%	6.94%	6.96%
Smoothing Period			1	1	1	1	1
Deferred Gains and (Losses)							
Plan Year Ending	Smoothing Period	Years Remaining					
6/30/2023	1	0	$0	$0	$0	$0	$0
6/30/2022	7	5	(60)	(345)	(927)	(85)	(6,586)
6/30/2021	8	5	133	855	2,202	204	15,690
Total Deferral			**$73**	**$509**	**$1,276**	**$120**	**$9,104**
Market Value less Deferral (a - b)			$1,376	$6,365	$19,342	$1,675	$135,070
70% of Market Value of Assets			1,014	4,812	14,432	1,256	100,922
130% of Market Value of Assets			1,883	8,936	26,802	2,333	187,426
Actuarial Value of Assets**			**$1,376**	**$6,365**	**$19,342**	**$1,675**	**$135,070**
Ratio (AV / MV)			95%	93%	94%	93%	94%

Note: Totals may not agree due to rounding. The gain/(loss) for plan years not shown has been fully recognized.

**Dollar weighted rate of return assuming cashflows occur mid-year.*

***Actuarial Value of Assets can never be less than 70% or greater than 130% of the Market Value of Assets.*

Additional information on the Retirement Commingled Trust Fund, including the asset allocation policy, can be found in the most recent EES.

FUNDED STATUS

Funded status is one of several measures that helps explain the health of a pension plan. The funded status represents the portion of the actuarial accrued liabilities covered by today's actuarial assets and provides information on the funding progress of the plan.

In our AVR, we calculate a plan's funded status by comparing the plan's current assets, determined under an asset valuation method, to the actuarial accrued liability of its members, calculated under an EAN actuarial cost method. Actuarial cost methods vary in the manner they allocate benefits to past and future time periods. We rely on an EAN actuarial cost method to better track the funding progress of accrued (or earned) benefits allocated to past service. Otherwise, the assumptions and methods used to measure funded status is consistent with the state's current funding policy and financing plan for future retirement benefits.

Funded status measures alone are not sufficient to determine whether a plan has enough assets to terminate or settle the plan obligations. Plans may have accumulated sufficient assets, at the measurement date, to satisfy the ongoing goal of having adequate assets to pay all currently earned benefits for existing members when due on an expected basis. However, ongoing contributions may still be required. The following table provides general guidance on how to interpret a plan's funded status at a point in time.

Interpretation of Plan Funded Status			
	Less than 100%	**Equals 100%**	**Greater than 100%**
Assets to Fund Earned Benefits as of the Measurement Date	Behind schedule on funding goals.	On schedule for funding goals.	Ahead of schedule on funding goals.
Contribution Rates	Typically requires higher contribution rates in the short term to raise plan's funded status to 100% over time.	Requires ongoing contribution rates for plans with members accruing future service.	Typically requires ongoing contribution rates for plans with members accruing future service. Short-term contribution rates may be lower to reduce the plan's funded status to 100% over time.

Plans with members accruing future service will typically require ongoing contributions. However, the level of actuarially determined contribution rates relative to current rates may be higher or lower depending on funded status and actual future experience.

As of the valuation date for the 2023 AVR, and under the data, assumptions, and methods used for this actuarial valuation, only LEOFF Plan 1 has sufficient assets to cease ongoing contributions.

Funded Status on an Actuarial Value Basis*					
(Dollars in Millions)	PERS		TRS		SERS
	Plan 1	**Plans 2/3**	**Plan 1**	**Plans 2/3**	**Plan 2/3**
Accrued Liability	$10,701	$60,245	$7,807	$25,616	$9,574
Valuation Assets	$8,561	$58,592	$6,732	$23,569	$8,858
Unfunded Liability	**$2,140**	**$1,653**	**$1,075**	**$2,047**	**$715**
Funded Ratio					
2023	**80%**	**97%**	**86%**	**92%**	**93%**
2022	75%	97%	80%	92%	92%
2021	71%	95%	73%	90%	91%
2020	69%	98%	71%	93%	93%
2019	65%	96%	66%	91%	91%
2018	60%	91%	63%	90%	89%
2017	57%	89%	60%	91%	88%
2016	56%	87%	61%	89%	87%
2015	58%	88%	64%	92%	89%
2014	61%	90%	69%	94%	91%

Note: Totals may not agree due to rounding.

**Liabilities valued using the EAN cost method at an interest rate of 7.0%. All assets have been valued under the actuarial asset method.*

Funded Status on an Actuarial Value Basis* *(Continued)*					
(Dollars in Millions)	PSERS	LEOFF		WSPRS	Total
	Plan 2	Plan 1	Plan 2	Plans 1/2	
Accrued Liability	$1,427	$4,269	$19,011	$1,787	$140,437
Valuation Assets	$1,376	$6,365	$19,342	$1,675	$135,070
Unfunded Liability	**$51**	**($2,095)**	**($331)**	**$112**	**$5,368**
Funded Ratio					
2023	**96%**	**149%**	**102%**	**94%**	**96%**
2022	101%	152%	104%	94%	96%
2021	98%	146%	104%	92%	93%
2020	101%	148%	113%	97%	95%
2019	101%	141%	111%	95%	92%
2018	96%	135%	108%	93%	89%
2017	95%	131%	109%	92%	86%
2016	94%	126%	105%	91%	84%
2015	95%	125%	105%	98%	86%
2014	96%	127%	107%	100%	87%

Note: Totals may not agree due to rounding.

**Liabilities valued using the EAN cost method at an interest rate of 7.0%. All assets have been valued under the actuarial asset method.*

The funded status depends on numerous assumptions. Two of the most significant assumptions are the mortality rates, which estimate how long we expect members to live, and the interest rate or expected return on plan assets. A key component of the mortality assumption is the rate at which mortality is expected to improve in the future. To show this, we doubled the current mortality improvement assumption (longer lifespans than our best estimate) and assumed no future improvements (shorter lifespans than our best estimate). We also considered the impact if the expected return on assets was 1% lower or higher.

The following tables demonstrate how the funded status changes across all retirement systems if we alter these assumptions.

Sensitivity of Funded Ratios to Assumed Mortality Rates			
(Dollars in Millions)	No Assumed Mortality Improvement	Best Estimate Assumed Mortality	Double Assumed Mortality Improvement
Accrued Liability	$130,681	$140,437	$150,271
Valuation Assets	$135,070	$135,070	$135,070
Unfunded Liability	($4,389)	$5,368	$15,201
Funded Ratio	103%	96%	90%

Sensitivity of Funded Ratios to Assumed Interest Rates			
(Dollars in Millions)	**1% Lower 6.0%**	**Best Estimate Assumption 7.0%**	**1% Higher 8.0%**
Accrued Liability	$159,887	$140,437	$124,423
Valuation Assets	$135,070	$135,070	$135,070
Unfunded Liability	$24,818	$5,368	($10,647)
Funded Ratio	84%	96%	109%

Please see our Commentary on Risk webpage for individual system results or our Interactive Reports webpage for more funded status measures that vary by interest rate assumptions and asset valuation methods.

The funded status measures we share in this report may vary from those presented in the *DRS Annual Comprehensive Financial Report*. These differences occur because the assumptions and methods applied to determine contribution requirements (under a funding valuation) may not apply for financial reporting under GASB accounting standards (an accounting valuation). Put another way, these measurements are used for distinct purposes, and the results may vary between the two reports.

LOW-DEFAULT-RISK OBLIGATION MEASURE

When determining plan costs for the purposes of calculating required contribution rates, current funding policy prescribes an annual assumed investment return of 7.0% to discount future expected benefits to the measurement date. These expected future investment returns are based on an investment policy that aims to maximize investment returns at a prudent level of risk. This investment strategy has reduced past required contributions and is expected, but not guaranteed, to reduce future required contributions. For example, over the past 20 years across all plans, investment returns have comprised approximately 70% of the pension fund's total income, with the remaining 30% coming from employer contributions and employee contributions.

Ultimately, actual funding requirements will be determined by actual experience including actual investment performance. Actual investment performance will inevitably vary from future expectations.

To provide a sense for how much future costs are potentially reduced under the state's current funding policy, we can compare those costs to the hypothetical costs under an investment policy with less risk. This comparison also provides a sense for how much costs under current funding policy could increase if future returns from a higher risk investment portfolio are not realized.

In the table below we make such a comparison. First, we display the funded status for each plan under current funding policy with an assumed investment return of 7%. Next, we display the funded status for each plan under a hypothetical funding policy where the plans would be supported by an investment portfolio comprised solely of low-default-risk fixed income securities. The latter measurement is referred to as a Low-Default-Risk Obligation Measure (or LDROM).

For the calculation of the LDROM, and consistent with ASOP 4, we selected a discount rate derived from US Treasury yields whose cash flows were reasonably consistent with the pattern of benefit payments expected to be paid by the covered plans in the future. As of June 30, 2023, that discount rate was 3.9% for the state's open plans and 4% for the closed plans.

All assumptions other than the assumed rate of investment return match between the two measurements presented below.

Funded Status on an Actuarial Value Basis					
(Dollars in Millions)	PERS		TRS		SERS
	Plan 1	Plans 2/3	Plan 1	Plans 2/3	Plan 2/3
Current Funding Policy					
Discount Rate	7.0%	7.0%	7.0%	7.0%	7.0%
Accrued Liability	$10,701	$60,245	$7,807	$25,616	$9,574
Plan Funded Status	**80%**	**97%**	**86%**	**92%**	**93%**
LDROM					
Discount Rate	4.0%	3.9%	4.0%	3.9%	4.0%
Accrued Liability	$13,497	$94,525	$9,805	$42,194	$14,836
Plan Funded Status	**63%**	**62%**	**69%**	**56%**	**60%**

Funded Status on an Actuarial Value Basis *(Continued)*					
(Dollars in Millions)	PSERS	LEOFF		WSPRS	All Systems
	Plan 2	Plan 1	Plan 2	Plans 1/2	
Current Funding Policy					
Discount Rate	7.0%	7.0%	7.0%	7.0%	N/A
Accrued Liability	$1,427	$4,269	$19,011	$1,787	$140,437
Plan Funded Status	**96%**	**149%**	**102%**	**94%**	**96%**
LDROM					
Discount Rate	3.9%	4.0%	3.9%	3.9%	N/A
Accrued Liability	$2,573	$5,495	$30,699	$2,820	$216,445
Plan Funded Status	**53%**	**116%**	**63%**	**59%**	**62%**

For all the plans in the table above, the funded status is lower under the LDROM than under current funding policy. This measure reflects lower anticipated investment returns than under current funding policy. Lower returns would lead to higher expected contribution requirements if the hypothetical investment policy under the LDROM were the basis for determining future contribution requirements. Those higher expected future contribution requirements would come with lower investment risk than under the state's current policy. An ongoing comparison between these two measures can be helpful when evaluating the reasonableness of the risk/reward tradeoff under the state's current funding policy.

A funded status measurement, among other measures, is often used to also evaluate the health of a pension plan or security of any underlying benefit promise. As noted above, under the state's current funding policy future investment returns are expected, but not guaranteed, to cover a significant portion of future costs and serve to reduce required contributions. This same point can be extended to plan funded status. By comparing the funded status under current law funding policy to the LDROM basis, we can provide a sense for how much future accrued benefit payments rely on returns from higher risk investments. Typically, the larger the difference between assumed returns, the larger the difference you'll see between the two funded status measures. Additionally, the impact of that difference compounds over longer periods of future benefit payments. The state's open plans have longer periods of future benefit payments than the closed Plans 1. It is important to note that there are additional factors including legal protections that may impact the security of benefits for current participants.

As noted above, the LDROM is based on a hypothetical investment portfolio. Therefore, it is not appropriate to use this measurement to determine contribution requirements or evaluate funding progress under current law funding policy. We expect this measurement to change each year as interest rates change. Given the potential volatility of future interest rates, this measure may change to a larger degree, year over year, than the corresponding measure based on the state's current funding policy. We also note that if the state's funding policy were changed in the future to match the hypothetical investment policy under the LDROM, future measurements would vary from the measurements provided in this report due, in part, to the use of different measurement dates, and potentially the use of different assumptions and methods.

See the **Appendix** for additional supporting information on how we selected the discount rates for the LDROM and the rationale for selection.

ACTUARIAL GAIN/LOSS

The following tables display actuarial gains and losses, expressed as funded ratio changes as directed under ASOP 4. Actuaries use gain/loss analysis to compare actual changes to assumed changes from various sources with respect to assets and liabilities. We also use this analysis to determine:

- The accuracy of our valuation model and annual processing.
- Why funded ratios changed.
- The reasonableness of the actuarial assumptions.

Actuarial gains will increase funded ratios; actuarial losses will decrease funded ratios.

Under a reasonable set of actuarial assumptions, actuarial gains and losses will offset over long-term experience periods. Generally, a reduction in funded ratio will require a period of higher contribution rates and an increase in funded ratio will require a period of lower contribution rates.

Change in Open Plans Funded Ratio by Source			
Change in Funded Ratio	**PERS 2/3**	**TRS 2/3**	**SERS 2/3**
(a) 2022 Funded Ratio	**97.5%**	**91.6%**	**92.1%**
(b) Remove Laws of 2023	0.0%	0.0%	0.0%
(c) Expected Change in Funded Ratio	0.3%	0.7%	1.0%
(d) 2023 Expected Funded Ratio (a+b+c)	**97.8%**	**92.4%**	**93.1%**
Liabilities			
Salaries	(1.8%)	(1.3%)	(1.8%)
Retirement/Termination/Disability	0.2%	0.4%	0.4%
Mortality	0.0%	0.0%	0.1%
New Hires/Return to Work	(0.4%)	(0.7%)	(0.6%)
Miscellaneous	(0.3%)	(0.1%)	(0.3%)
(e) Total Liability Gains/Losses	**(2.3%)**	**(1.7%)**	**(2.2%)**
Assets*			
Investment Returns	2.4%	2.2%	2.2%
Contributions/Disbursements	0.2%	(0.1%)	0.2%
(f) Total Asset Gains/Losses	**2.6%**	**2.1%**	**2.4%**
Other Changes			
Plan Change	0.2%	0.0%	0.1%
Assumption and Methodology Changes	(1.0%)	(0.8%)	(0.9%)
(g) Total Other Changes	**(0.9%)**	**(0.7%)**	**(0.8%)**
2023 Funded Ratio			
(h) 2023 Funded Ratio Before Laws of 2024 (d+e+f+g)	97.2%	92.0%	92.5%
(i) Laws of 2024**	0.0%	0.0%	0.0%
(j) 2023 Funded Ratio (h + i)	**97.3%**	**92.0%**	**92.5%**
Total Change in Funded Ratio (j - a)	**(0.2%)**	**0.4%**	**0.4%**

Note: Totals may not agree due to rounding.

**Asset Gain/Loss performed on AVA not MVA.*

***Includes 2023 Legislation effective after measurement date of June 30, 2023.*

Change in Open Plans Funded Ratio by Source *(Continued)*			
Change in Funded Ratio	**PSERS 2**	**LEOFF 2**	**WSPRS 1/2**
(a) 2022 Funded Ratio	**100.6%**	**103.7%**	**94.4%**
(b) Remove Laws of 2023	0.0%	0.1%	0.2%
(c) Expected Change in Funded Ratio	(0.2%)	(0.2%)	0.4%
(d) Expected Funded Ratio (a+b+c)	**100.5%**	**103.6%**	**95.0%**
Liabilities			
Salaries	(6.3%)	(1.9%)	(1.0%)
Retirement/Termination/Disability	1.6%	(0.4%)	0.2%
Mortality	0.0%	0.0%	0.2%
New Hires/Return to Work	(1.3%)	(0.1%)	(0.1%)
Miscellaneous	0.3%	(0.5%)	(0.8%)
(e) Total Liability Gains/Losses	**(5.8%)**	**(2.9%)**	**(1.5%)**
Assets*			
Investment Returns	1.9%	2.5%	2.5%
Contributions/Disbursements	(0.2%)	0.0%	(0.1%)
(f) Total Asset Gains/Losses	**1.8%**	**2.5%**	**2.4%**
Other Changes			
Plan Change	0.3%	0.1%	0.0%
Assumption and Methodology Changes	(0.3%)	(1.5%)	(2.0%)
(g) Total Other Changes	**0.0%**	**(1.4%)**	**(2.0%)**
2023 Funded Ratio			
(h) 2023 Funded Ratio Before Laws of 2024 (d+e+f+g)	96.4%	101.8%	93.9%
(i) Laws of 2024**	0.0%	(0.1%)	(0.2%)
(j) 2023 Funded Ratio (h + i)	**96.4%**	**101.7%**	**93.7%**
Total Change in Funded Ratio (j - a)	**(4.2%)**	**(2.0%)**	**(0.7%)**

Note: Totals may not agree due to rounding.

**Asset Gain/Loss performed on AVA not MVA.*

***Includes 2023 Legislation effective after measurement date of June 30, 2023.*

Change in Closed Plans Funded Ratio by Source *(Continued)*			
Change in Funded Ratio	**PERS 1**	**TRS 1**	**LEOFF 1**
(a) 2022 Funded Ratio	**75.1%**	**80.5%**	**151.7%**
(b) Remove Laws of 2023	1.1%	1.6%	0.0%
(c) Expected Change in Funded Ratio	0.3%	0.2%	7.6%
(d) Expected Funded Ratio (a+b+c)	**76.5%**	**82.3%**	**159.3%**
Liabilities			
Salaries	0.0%	0.0%	0.0%
Retirement/Termination/Disability	0.0%	0.0%	0.0%
Mortality	0.3%	0.2%	0.7%
New Hires/Return to Work	0.0%	0.0%	0.0%
Miscellaneous	(0.2%)	(0.2%)	(10.3%)*
(e) Total Liability Gains/Losses	**0.0%**	**0.1%**	**(9.7%)**
Assets**			
Investment Returns	1.8%	2.0%	3.4%
Contributions/Disbursements	3.5%	4.7%	(0.4%)
(f) Total Asset Gains/Losses	**5.4%**	**6.7%**	**3.1%**
Other Changes			
Plan Change	(0.9%)	(1.4%)	0.0%
Assumption and Methodology Changes	0.0%	(0.1%)	(3.6%)
(g) Total Other Changes	**(0.9%)**	**(1.5%)**	**(3.6%)**
2023 Funded Ratio			
(h) 2023 Funded Ratio Before Laws of 2024 (d+e+f+g)	80.9%	87.6%	149.1%
(i) Laws of 2024**	(0.9%)	(1.3%)	0.0%
(j) 2023 Funded Ratio (h + i)	**80.0%**	**86.2%**	**149.1%**
Total Change in Funded Ratio (j - a)	**4.9%**	**5.7%**	**(2.6%)**

Note: Totals may not agree due to rounding.

**Retirees of LEOFF 1 receive fully indexed COLAs. This figure reflects an April 1, 2023, COLA of 8.81% compared to an assummed 2.75%.*

***Asset Gain/Loss performed on AVA not MVA.*

****Includes 2023 Legislation effective after measurement date of June 30, 2023.*

III. PARTICIPANT DATA

OVERVIEW OF SYSTEM MEMBERSHIP

The Department of Retirement Systems administers nine retirement systems for state and local public employees. Retirement system membership is determined according to the participant's occupation and employer. Employees covered by each system are defined in separate chapters of the RCW.

PERS *Chapter 41.40 RCW*	State employees; employees of all counties and most cities (some exceptions are Tacoma, Seattle, and Spokane); non-teaching employees of institutions of higher learning and community colleges; employees of ports, service districts, Energy Northwest, public utility districts, and judges first elected or appointed after June 30, 1988.
TRS *Chapter 41.32 RCW*	Certificated teachers; administrators; and educational staff associates.
SERS *Chapter 41.35 RCW*	Classified school district employees and educational service district employees.
PSERS *Chapter 41.37 RCW*	Correction officers (state, state community, county, city, and local community); state park rangers; enforcement officers with the Liquor and Cannabis Board, Washington State Patrol (commercial vehicle), Gambling Commission, and the Department of Natural Resources; public safety telecommunicators; security staff and nurses working at certain state institutions and local correctional departments.
LEOFF *Chapter 41.26 RCW*	Fire fighters; emergency medical technicians; law enforcement officers including sheriffs; university, port, city police officers, and enforcement officers with the Department of Fish and Wildlife.
WSPRS *Chapter 43.43 RCW*	Commissioned officers of the Washington State Patrol.

The following tables show participant data changes from the prior valuation to this year's valuation. We divide the participant data into two main categories:

- ❖ **Actives** — Members actively employed and accruing benefits in the plan.
- ❖ **Annuitants** — Members and beneficiaries receiving post-retirement benefits from the plan.

We also provide the ratio of active to annuitant members. This is one way to track overall plan maturity, and its associated risks, with a smaller ratio indicating a more mature plan. Risks can emerge over time just by the nature of a pension plan growing or maturing. For example, as a plan matures – with fewer active, contributing members relative to the retiree population – the plan's obligations become larger relative to its source of contributions. Additional Commentary on Risk can be found on our website.

Reconciliation of Active and Annuitant Data								
	PERS				TRS			
	Plan 1	Plan 2	Plan 3	Total	Plan 1	Plan 2	Plan 3	Total
2022 Actives	**633**	**127,241**	**37,227**	**165,101**	**111**	**27,041**	**54,158**	**81,310**
Transfers*	0	(47)	47	0	0	(7)	7	0
Hires/Rehires	25	22,316	5,037	27,378	0	4,587	2,912	7,499
New Retirees	(128)	(3,176)	(494)	(3,798)	(29)	(320)	(1,229)	(1,578)
Deaths	(4)	(214)	(53)	(271)	(1)	(19)	(38)	(58)
Terminations	(20)	(10,660)	(3,711)	(14,391)	0	(2,291)	(3,139)	(5,430)
2023 Actives	**506**	**135,460**	**38,053**	**174,019**	**81**	**28,991**	**52,671**	**81,743**
2022 Annuitants	**40,995**	**68,061**	**8,054**	**117,110**	**29,650**	**7,001**	**18,870**	**55,521**
New Retirees	198	5,079	886	6,163	50	497	2,025	2,572
Annuitant Deaths	(2,147)	(1,727)	(131)	(4,005)	(1,336)	(160)	(203)	(1,699)
New Survivors	285	449	61	795	203	35	97	335
Other	(25)	(36)	(1)	(62)	(11)	(3)	(11)	(25)
2023 Annuitants	**39,306**	**71,826**	**8,869**	**120,001**	**28,556**	**7,370**	**20,778**	**56,704**
Ratio Actives to Annuitants	**0.01**	**1.89**	**4.29**	**1.45**	**<0.01**	**3.93**	**2.53**	**1.44**

Note: Figures exclude legal order payees (LOPs) entitled to a portion of member benefits under a court-ordered property division.

**Excludes new members who initially default to Plan 2 at hire and subsequently elect to join Plan 3 within the same valuation year.*

Reconciliation of Active and Annuitant Data *(Continued)*	SERS			PSERS
	Plan 2	Plan 3	Total	Plan 2
2022 Actives	**33,525**	**31,826**	**65,351**	**8,322**
Transfers*	(27)	27	0	0
Hires/Rehires	8,809	3,065	11,874	1,885
New Retirees	(771)	(819)	(1,590)	(84)
Deaths	(48)	(39)	(87)	(8)
Terminations	(4,666)	(3,583)	(8,249)	(1,161)
2023 Actives	**36,822**	**30,477**	**67,299**	**8,954**
2022 Annuitants	**13,463**	**13,785**	**27,248**	**608**
New Retirees	1,314	1,463	2,777	122
Annuitant Deaths	(304)	(216)	(520)	(6)
New Survivors	86	68	154	3
Other	(6)	(6)	(12)	(1)
2023 Annuitants	**14,553**	**15,094**	**29,647**	**726**
Ratio Actives to Annuitants	**2.53**	**2.02**	**2.27**	**12.33**

Note: Figures exclude legal order payees entitled to a portion of member benefits under a court-ordered property division.

**Excludes new members who initially default to Plan 2 at hire and subsequently elect to join Plan 3 within the same valuation year.*

Reconciliation of Active and Annuitant Data *(Continued)*	LEOFF			WSPRS			All Systems
	Plan 1	Plan 2	Total	Plan 1	Plan 2	Total	Total
2022 Actives	**11**	**18,625**	**18,636**	**242**	**674**	**916**	**339,636**
Hires/Rehires	0	2,046	2,046	1	88	89	50,771
New Retirees	(4)	(707)	(711)	(32)	(2)	(34)	(7,795)
Deaths	0	(16)	(16)	0	(1)	(1)	(441)
Terminations	0	(637)	(637)	(2)	(23)	(25)	(29,893)
2023 Actives	**7**	**19,311**	**19,318**	**209**	**736**	**945**	**352,278**
2022 Annuitants	**6,331**	**8,597**	**14,928**	**1,309**	**5**	**1,314**	**216,729**
New Retirees	6	901	907	36	2	38	12,579
Annuitant Deaths	(308)	(63)	(371)	(33)	0	(33)	(6,634)
New Survivors	128	42	170	10	1	11	1,468
Other	(3)	(17)	(20)	(1)	0	(1)	(121)
2023 Annuitants	**6,154**	**9,460**	**15,614**	**1,321**	**8**	**1,329**	**224,021**
Ratio Actives to Annuitants	**<0.01**	**2.04**	**1.24**	**0.16**	**92.00**	**0.71**	**1.57**

Note: Figures exclude legal order payees entitled to a portion of member benefits under a court-ordered property division.

SUMMARY OF PLAN PARTICIPANTS

Summary of Plan Participants								
PERS	2023				2022			
	Plan 1	Plan 2	Plan 3	Plans 2/3	Plan 1	Plan 2	Plan 3	Plans 2/3
Active Members								
Number	**506**	**135,460**	**38,053**	**173,513**	**633**	**127,241**	**37,227**	**164,468**
Total Salaries *(Dollars in Millions)*	$38	$11,161	$3,119	$14,281	$46	$9,905	$2,826	$12,731
Average Age	70.7	46.1	44.8	45.8	69.6	46.7	44.6	46.2
Average Service	25.9	10.3	9.0	10.0	26.3	10.9	8.9	10.5
Average Salary	$74,520	$82,395	$81,977	$82,303	$72,662	$77,844	$75,924	$77,410
Terminated Members								
Vested	149	30,730	7,609	38,339	196	30,662	7,340	38,002
Non-Vested*	1,963	127,647	0	127,647	2,160	127,116	0	127,116
Total Terminated	**2,112**	**158,377**	**7,609**	**165,986**	**2,356**	**157,778**	**7,340**	**165,118**
Annuitants								
Service Retired**	33,775	65,573	8,273	73,846	35,324	62,032	7,508	69,540
Disability Retired	560	1,641	93	1,734	600	1,703	97	1,800
Survivors	4,971	4,612	503	5,115	5,071	4,326	449	4,775
Total Annuitants	**39,306**	**71,826**	**8,869**	**80,695**	**40,995**	**68,061**	**8,054**	**76,115**
Avg. Monthly Benefit, All Annuitants***	$2,421	$2,188	$1,183	$2,077	$2,327	$2,083	$1,142	$1,984
Number of New Service Retirees	188	5,043	884	5,927	300	5,890	940	6,830
Avg. Benefit, New Service Retirees***	$2,678	$2,679	$1,264	$2,468	$2,628	$2,622	$1,421	$2,457

Note: Totals may not agree due to rounding. The above figures exclude 155 Plan 1 and 418 Plans 2/3 legal order payees currently in receipt of benefit payments of June 30, 2023.

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

***Includes retirements from active and terminated with vested status.*

****Excludes additional TAP annuities purchased from Plan 3 defined contribution accounts. For more information on TAP annuities, please see the table at the end of this section.*

Summary of Plan Participants *(Continued)*								
TRS	2023				2022			
	Plan 1	Plan 2	Plan 3	Plans 2/3	Plan 1	Plan 2	Plan 3	Plans 2/3
Active Members								
Number	**81**	**28,991**	**52,671**	**81,662**	**111**	**27,041**	**54,158**	**81,199**
Total Salaries *(Dollars in Millions)*	$9	$2,675	$5,780	$8,456	$12	$2,346	$5,579	$7,925
Average Age	72.3	41.3	47.3	45.1	71.3	41.3	47.0	45.1
Average Service	36.0	7.3	15.2	12.4	34.8	7.3	14.9	12.4
Average Salary	$114,307	$92,284	$109,742	$103,544	$109,417	$86,761	$103,015	$97,602
Terminated Members								
Vested	48	3,875	9,031	12,906	63	3,465	8,769	12,234
Non-Vested*	160	9,155	0	9,155	186	8,396	0	8,396
Total Terminated	**208**	**13,030**	**9,031**	**22,061**	**249**	**11,861**	**8,769**	**20,630**
Annuitants								
Service Retired**	25,383	6,977	19,856	26,833	26,435	6,628	18,033	24,661
Disability Retired	355	67	91	158	378	66	94	160
Survivors	2,818	326	831	1,157	2,837	307	743	1,050
Total Annuitants	**28,556**	**7,370**	**20,778**	**28,148**	**29,650**	**7,001**	**18,870**	**25,871**
Avg. Monthly Benefit, All Annuitants***	$2,472	$2,491	$1,574	$1,814	$2,385	$2,381	$1,486	$1,728
Number of New Service Retirees	44	493	2,019	2,512	74	529	2,048	2,577
Avg. Benefit, New Service Retirees***	$3,337	$2,983	$1,987	$2,182	$3,605	$2,979	$1,885	$2,110

Note: Totals may not agree due to rounding. The above figures exclude 80 Plan 1 and 118 Plans 2/3 legal order payees currently in receipt of benefit payments as of June 30, 2023.

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

***Includes retirements from active and terminated with vested status.*

****Excludes additional TAP annuities purchased from Plan 3 defined contribution accounts. For more information on TAP annuities, please see the table at the end of this section.*

Summary of Plan Participants *(Continued)*						
SERS		**2023**			**2022**	
	Plan 2	**Plan 3**	**Plans 2/3**	**Plan 2**	**Plan 3**	**Plans 2/3**
Active Members						
Number	**36,822**	**30,477**	**67,299**	**33,525**	**31,826**	**65,351**
Total Salaries *(Dollars in Millions)*	$1,674	$1,513	$3,188	$1,441	$1,461	$2,902
Average Age	46.4	50.1	48.1	47.2	49.9	48.5
Average Service	6.6	10.3	8.3	7.2	10.1	8.6
Average Salary	$45,464	$49,660	$47,364	$42,981	$45,893	$44,399
Terminated Members						
Vested	7,484	10,127	17,611	7,193	9,911	17,104
Non-Vested*	24,651	0	24,651	22,259	0	22,259
Total Terminated	**32,135**	**10,127**	**42,262**	**29,452**	**9,911**	**39,363**
Annuitants						
Service Retired**	13,615	14,424	28,039	12,572	13,168	25,740
Disability Retired	254	83	337	269	86	355
Survivors	684	587	1,271	622	531	1,153
Total Annuitants	**14,553**	**15,094**	**29,647**	**13,463**	**13,785**	**27,248**
Avg. Monthly Benefit, All Annuitants***	$1,075	$613	$840	$1,038	$588	$810
Number of New Service Retirees	1,310	1,459	2,769	1,402	1,587	2,989
Avg. Benefit, New Service Retirees***	$1,167	$687	$914	$1,137	$682	$895

Note: Totals may not agree due to rounding. The above figures exclude 58 legal order payees currently in receipt of benefit payments as of June 30, 2023.

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

***Includes retirements from active and terminated with vested status.*

****Excludes additional TAP annuities purchased from Plan 3 defined contribution accounts. For more information on TAP annuities, please see the table at the end of this section.*

Summary of Plan Participants *(Continued)*		
PSERS	**2023**	**2022**
Active Members		
Number	**8,954**	**8,322**
Total Salaries *(Dollars in Millions)*	$800	$661
Average Age	41.6	41.7
Average Service	6.2	6.3
Average Salary	$89,305	$79,452
Terminated Members		
Vested	1,228	1,094
Non-Vested*	6,072	5,571
Total Terminated	**7,300**	**6,665**
Annuitants		
Service Retired**	679	565
Disability Retired	24	23
Survivors	23	20
Total Annuitants	**726**	**608**
Avg. Monthly Benefit, All Annuitants	$1,291	$1,184
Number of New Service Retirees	120	144
Avg. Benefit, New Service Retirees	$1,688	$1,438

Note: Totals may not agree due to rounding. The above figures excludes 1 legal order payee currently in receipt of benefit payments as of June 30, 2023.

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

***Includes retirements from active and terminated with vested status.*

Summary of Plan Participants *(Continued)*						
LEOFF	**2023**			**2022**		
	Plan 1	**Plan 2**	**Total**	**Plan 1**	**Plan 2**	**Total**
Active Members						
Number	**7**	**19,311**	**19,318**	**11**	**18,625**	**18,636**
Total Salaries *(Dollars in Millions)*	$1	$2,637	$2,638	$1	$2,405	$2,406
Average Age	70.6	41.1	41.1	69.4	41.7	41.7
Average Service	44.9	11.8	11.8	44.8	12.4	12.4
Average Salary	$127,379	$136,552	$136,548	$129,212	$129,107	$129,107
Terminated Members						
Vested	0	1,434	1,434	0	1,437	1,437
Non-Vested*	19	3,067	3,086	23	2,872	2,895
Total Terminated	**19**	**4,501**	**4,520**	**23**	**4,309**	**4,332**
Annuitants						
Service Retired**	1,983	8,377	10,360	2,073	7,606	9,679
Disability Retired	2,412	667	3,079	2,524	615	3,139
Survivors	1,759	416	2,175	1,734	376	2,110
Total Annuitants	**6,154**	**9,460**	**15,614**	**6,331**	**8,597**	**14,928**
Avg. Monthly Benefit, All Annuitants	$5,413	$5,137	$5,246	$4,953	$4,906	$4,926
Number of New Service Retirees	4	839	843	2	980	982
Avg. Benefit, New Service Retirees	$12,258	$6,049	$6,079	$9,235	$5,888	$5,895

Note: Totals may not agree due to rounding. The above figures exclude 91 Plan 1 and 551 Plan 2 legal order payees currently in receipt of benefit payments as of June 30, 2023.

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

***Includes retirements from active and terminated with vested status.*

Summary of Plan Participants *(Continued)*						
WSPRS	**2023**			**2022**		
	Plan 1	**Plan 2**	**Total**	**Plan 1**	**Plan 2**	**Total**
Active Members						
Number	**209**	**736**	**945**	**242**	**674**	**916**
Total Salaries *(Dollars in Millions)*	$31	$86	$117	$31	$71	$102
Average Age	51.4	35.4	38.9	50.8	35.4	39.5
Average Service	24.9	9.2	12.6	23.9	9.2	13.1
Average Salary	$147,425	$116,944	$123,685	$129,205	$104,758	$111,217
Terminated Members						
Vested	68	105	173	69	103	172
Non-Vested*	11	104	115	12	100	112
Disability Retired**	26	0	26	32	0	32
Total Terminated	**105**	**209**	**314**	**113**	**203**	**316**
Annuitants						
Service Retired***	1,121	5	1,126	1,106	3	1,109
Survivors	200	3	203	203	2	205
Total Annuitants	**1,321**	**8**	**1,329**	**1,309**	**5**	**1,314**
Avg. Monthly Benefit, All Annuitants	$5,343	$2,172	$5,324	$5,153	$1,668	$5,140
Number of New Service Retirees	36	2	38	69	1	70
Avg. Benefit, New Service Retirees	$6,174	$3,079	$6,011	$6,149	$2,659	$6,099

Note: Totals may not agree due to rounding. The above figures excludes 1 legal order payee currently in receipt of benefit payments as of June 30, 2023.

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

***Benefits provided outside of pension funds.*

****Includes retirements from active and terminated with vested status.*

The following table provides summary statistics for Plan 3 retirees of PERS, TRS, and SERS purchasing Total Allocation Portfolio (TAP) annuities. These annuities are purchased at retirement from a member's defined contribution account. Assets and liabilities for TAP annuities are included in our actuarial measurements. Please see the DRS website for more information on TAP and other types of annuities offered by the retirement systems.

Summary of Members Purchasing TAP Annuities			
	PERS 3	TRS 3	SERS 3
Number	1,164	2,376	1,329
Average Age	68.6	69.3	70.5
Avg. Monthly Benefit, All Annuitants	$1,500	$1,617	$817
Number of New Purchasers in FY 2023	93	162	90
Avg. Purchase Price, New Purchasers*	$262,100	$314,400	$157,900
Avg. Monthly Benefit, New Purchasers	$1,392	$1,608	$850

**Purchased with money from the member's Plan 3 defined contribution account.*

IV. APPENDIX

ACTUARIAL ASSUMPTIONS OR METHODS

To calculate the contribution rates necessary to pre-fund a plan's benefits, an actuary uses an actuarial cost method, a funding policy, economic assumptions, and demographic assumptions. The actuary may also use an asset valuation method other than market value. The section below lists the methods and assumptions that change regularly or are new since the last AVR. Please see our Actuarial Methods webpage for descriptions of the actuarial cost methods and asset valuation method we use for this valuation, and please see our Actuarial Assumptions webpage for descriptions of all remaining assumptions.

CHANGES IN METHODS AND ASSUMPTIONS SINCE THE LAST VALUATION

❖ We updated our valuation programming to reflect recent high levels of inflation.

- As discussed on our webpage, annuitants in Plans 2/3 and WSPRS Plan 1 receive annual COLAs up to a cap of 3.00%. Excess inflation above 3.00% is "banked" for future use when inflation is less than 3% for those annuitants.

  The prescribed future inflation assumption is 2.75%; however, the current annuitants have experienced high levels of banked inflation with some annuitants currently banking as much as approximately 10% during Calendar Years 2021 through 2023. See link for historical inflation.

  To value the current levels of COLA "banking" we modeled all annuitants in the applicable plans, as of our measurement date, will receive a 3.00% COLA for the duration of their expected lifetime. This represents our expectation of future inflation to be 2.75% combined with the current levels of "banking". No change in valuation software programming was made for members not currently in receipt of retirement benefits since the COLA banking only applies to members in receipt of benefits.

  LEOFF 1 annuitants also receive a COLA based on inflation but are not subject to a cap. For these members, we modeled the COLA of 5.52% they received on April 1, 2024.

❖ We corrected a programming error in TRS 1, introduced during the 2022 AVR, regarding eligibility determination for minimum benefits.

❖ We modified the methodology for determining the ten-year rolling amortization rate of the PERS 1 and TRS 1 Base UAAL. When determining the remaining UAAL, we included future receivable contributions between our measurement date of June 30, 2023, and the adopted contribution rates effective date of July 1, 2025, in PERS and PSERS and September 1, 2025, in TRS and SERS.

- To determine the present value of future Base UAAL contributions (labeled "Contributions Receivable Adjustment" in Amortization of the Plan 1 UAAL table), we projected future salary base for employers collected UAAL forward from the valuation measurement date using our General Salary Growth and Growth in Membership assumptions. This salary was applied to the Base UAAL rates prescribed under ESSB 5294 (Chapter 396, Laws of 2023). Lastly, we found the present value of these contributions as of the valuation measurement date using our Investment Rate of Return assumption.
- This change does not impact the fixed ten-year contribution rates for past benefit improvements nor minimum rates under the funding policy.

❖ We updated our valuation to reflect legislation passed during the 2023 Legislative Session.

- SB 5350 (Chapter 397, Laws of 2023) provided PERS Plan 1 and TRS Plan 1 annuitants who are not receiving a basic minimum, alternate minimum, or temporary disability benefit with a one-time permanent 3% increase to their monthly benefit, not to exceed a maximum of $110 per month. We updated our valuation programming to reflect this legislation.
- SHB 1056 (Chapter 410, Laws of 2023) allows 2008 Early Retirement Factors (ERF) recipients in PERS, TRS, and SERS, to return to work with a DRS employer up to 867 hours before reaching age 65 and increases benefits for recipients of the 2000 ERFs hired on or after September 1, 2008. Our valuation programming did not require changes to reflect the new return to work rules. The increases to benefit for eligible annuitants is effective during FY 2024 and will be reflected in our

valuation data beginning with the June 30, 2024, measurement date. To reflect this change in our valuation, we relied on the prepared fiscal note during the 2023 Legislative Session.

- SHB 1007 (Chapter 18, Laws of 2023) expands the definition of veteran to include individuals who received an Expeditionary medal (or badge) during any armed conflict and expands eligibility for IMSC. We study rates of IMSC during our demographic experience study with the next study scheduled to begin during FY 2025. To reflect this change in our valuation in the interim, we relied on the prepared fiscal note during the 2023 Legislative Session.
- House Bill 1055 (Chapter 199, Laws of 2023) allows existing Public Safety Telecommunicators (PSTs) who are in PERS 2/3 the opportunity to prospectively transfer into PSERS. Newly hired PSTs will also become PSERS members instead of PERS members. The transfer window for eligible members takes place during FY 2024 and any changes will be reflected in data starting with the June 30, 2024, measurement date. To reflect this change in our valuation in the interim, we relied on the prepared fiscal note during the 2023 Legislative Session.

❖ We corrected our methodology for determining employer contribution rates in TRS 2/3 in the event the member calculated normal cost exceeds the member maximum contribution rate.

❖ We updated the minimum contribution rate calculation for LEOFF 2 to reflect changes enacted during the 2022 Legislative Session. We determined the minimum contribution rates calculated will be offset by 0.75% through the 2033 valuation. We assume the last biennium of rate offsets would be the 2035-37 Biennium.

- SHB 1701 (Chapter 125, Laws of 2022) directed an offset to minimum contribution rates to go into effect July 1, 2025 (see Section 8) in order for the minimum contribution rates to not increase for current LEOFF 2 members as a result of the benefit improvements contained within the bill.
- To determine the increase to the minimum contribution rates due to the benefit increases, we relied on our 2021 AVR when the new benefit improvements were first programmed. The entry age normal cost contribution rates, used to inform the LEOFF 2 minimum rates, increased by 0.75% due to the benefit improvements under this bill. Therefore, we selected a 0.75% offset to be applied to the base minimum contribution rates.
- This offset was intended to reduce future costs for members participating in LEOFF Plan 2 at the time these benefit improvements were enacted, approximately the end of FY 2022. To determine how long this offset should be applied, we relied on the remaining average future working lifetime of these members as of our June 30, 2021, measurement date, approximately 15 years. We will include the 0.75% offset in our rate calculations used to inform contribution rate adoption through the 2035-37 Biennium. This represents 15 years of contribution rate collection from the effective date of the benefit improvement.

OTHER KEY CONSIDERATIONS

❖ We considered but did not make changes to our model to reflect anticipated increases to salaries in PSERS, LEOFF, and WSPRS due to the 2023-25 Collective Bargaining Agreements. We will continue to monitor short-term salary increases and may make temporary, one-time assumption changes when deemed necessary.

❖ We considered but did not make an adjustment for SHB 2357 (Chapter 237, Laws of 2024) that enacts a non-pensionable longevity bonus for commissioned Washington State Patrol troopers. This legislation could impact retirement behavior. We will continue to monitor retirement rates and may make adjustments in the future.

LDROM METHODOLOGY

To select the discount rates for the LDROM we relied on US Treasury yields as of our measurement date. ASOP 4 directs the use of discount rates based on low-default-risk fixed income securities with cash flows that are reasonably consistent with the timing of benefits that are expected to be paid in the future. We selected US Treasury yields as the underlying basis for the discount rate for this measurement because they represent low-default fixed income securities, and we believe they are commonly understood by our readers.

To calculate discount rates that are reasonably consistent with the timing of benefits expected to be paid in the future for each plan, we projected future annual benefit payments and determined a corresponding annual discount rate based on linear interpolation of the US Treasury yield rates. We used these annual rates to discount the future payments to our measurement date of June 30, 2023. We then calculated a single discount rate applied to all future cashflows that would provide the same present value of future benefits. Under this approach, PERS 1, TRS 1, and LEOFF 1 have a LDROM discount rate of 4.0% while all other plans have a discount rate of 3.9%.

COMMENTS ON VALUATION MODEL

As required under ASOP No. 56 – Modeling, we share the following comments related to our reliance on the ProVal® software developed by Winklevoss Technologies.

- We understand this software model was primarily created for use by actuaries when performing valuations and projections of pension and retiree medical plans. The use of the model for this analysis is appropriate given its intended purpose.
- To assess the general operation of the model, we reviewed the output for reasonableness. This includes comparing the results to our simplified estimates done in Microsoft Excel and examining sample lives to confirm the programming is working as intended. We are not aware of any known weaknesses or limitations of the model that have a material impact on the results.
- The PFC hires auditors to independently review and replicate the results of rate-setting valuations. This process provides an additional reasonableness check of the model output.

Additionally, we considered how the use of different inputs to the model (e.g., data/assumptions/provisions) produce different results and evaluated the relative impacts to our expectations. This allows us to gain a deeper knowledge of the model's important dependencies and major sensitivities.

SUMMARY OF PLAN PROVISIONS

The summary of key plan provisions used in the actuarial valuation are provided in two sets of tables. The following tables contain plan provisions that can change frequently while the provisions that change less frequently can be found on our Summary of General Plan Provisions webpage.

These tables and those on our website present high-level summaries and are not meant to be exhaustive lists. For complete details of plan provisions, please refer to the statutes governing the systems or contact the plan administrator (DRS). In the unlikely event that information contained in these summary tables conflicts with state law, the law takes precedence.

Summary of Frequently Changing Plan Provisions			
PERS	**Plan 1**	**Plan 2**	**Plan 3**
COLA	$2.85* per Month per YOS on 7/1/24	Lesser of CPI** or 3%	Lesser of CPI** or 3%
Minimum Benefit per Month	$75.80 per YOS on 7/1/24, $2,268.87* for Select Annuitants	N/A	N/A
Material Plan Provision Changes since Last Rate-Setting Valuation	Plan 1 COLA 3% Increase on 7/1/23 & 7/1/24 (C 397, L 23) & (C 255, L 24) Reduced Saving Fund Regular Interest (WAC 415-02-150)	Reduced Saving Fund Regular Interest (WAC 415-02-150) Reduction of Postretirement Employment Restrictions (C 410, L 23)	Reduction of Postretirement Employment Restrictions (C 410, L 23)
Significant Plan Provisions Not Included in This Valuation	None	None	None

**Minimum COLA payable to qualified members only; increases by 3% annually. The Uniform COLA was removed under C 362, L 11.*

***CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bellevue, WA — All Items.*

Summary of Frequently Changing Plan Provisions *(Continued)*			
TRS	**Plan 1**	**Plan 2**	**Plan 3**
COLA	$2.85* per Month per YOS on 7/1/24	Lesser of CPI** or 3%	Lesser of CPI** or 3%
Minimum Benefit per Month	$75.80 per YOS on 7/1/24, $2,268.87* for Select Annuitants	N/A	N/A
Material Plan Provision Changes since Last Rate-Setting Valuation	Plan 1 COLA 3% Increase on 7/1/23 & 7/1/24 (C 397, L 23) & (C 255, L 24) Reduced Saving Fund Regular Interest (WAC 415-02-150)	Reduced Saving Fund Regular Interest (WAC 415-02-150) Reduction of Postretirement Employment Restrictions (C 410, L 23)	Reduction of Postretirement Employment Restrictions (C 410, L 23)
Significant Plan Provisions Not Included in This Valuation	None	None	None

**Minimum COLA payable to qualified members only; increases by 3% annually. The Uniform COLA was removed under C 362 L 11.*

***CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bellevue, WA — All Items.*

Summary of Frequently Changing Plan Provisions *(Continued)*		
SERS	**Plan 2**	**Plan 3**
COLA	Lesser of CPI* or 3%	Lesser of CPI* or 3%
Minimum Benefit per Month	N/A	N/A
Material Plan Provision Changes since Last Rate-Setting Valuation	Reduced Saving Fund Regular Interest (WAC 415-02-150) Reduction of Postretirement Employment Restrictions (C 410, L 23)	Reduction of Postretirement Employment Restrictions (C 410, L 23)
Significant Plan Provisions Not Included in This Valuation	None	None

**CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bellevue, WA — All Items.*

Summary of Frequently Changing Plan Provisions *(Continued)*	
PSERS	**Plan 2**
COLA	Lesser of CPI* or 3%
Minimum Benefit per Month	N/A
Material Plan Provision Changes since Last Rate-Setting Valuation	Reduced Saving Fund Regular Interest (WAC 415-02-150) Modified the definition of "Veteran" (C 18, L 23) & (C 146, L 24) Expansion of PSERS Eligibility (C 199, L 23) & (C 359, L 24)
Significant Plan Provisions Not Included in This Valuation	None

**CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bellevue, WA — All Items.*

Summary of Frequently Changing Plan Provisions *(Continued)*		
LEOFF	**Plan 1**	**Plan 2**
COLA	Full CPI*	Lesser of CPI* or 3%
Minimum Benefit per Month	N/A	N/A
Material Plan Provision Changes since Last Rate-Setting Valuation	None	Reduced Saving Fund Regular Interest (WAC 415-02-150) Modified the Definition of "Veteran" (C 18, L 23) & (C 146, L 24) Modified Death Benefits, Definition of "Firefighter", Overpayment Management, & Disability Benefits (C 304, L 24)
Significant Plan Provisions Not Included in This Valuation	None	None

**CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bellevue, WA — All Items.*

Summary of Frequently Changing Plan Provisions *(Continued)*		
WSPRS	**Plan 1**	**Plan 2**
COLA	Lesser of CPI* or 3%	Lesser of CPI* or 3%
Minimum Benefit per Month**	$44.19 per YOS on 1/1/24	$44.19 per YOS on 1/1/24
Material Plan Provision Changes since Last Rate-Setting Valuation	Reduced Saving Fund Regular Interest (WAC 415-02-150) Modified the Definition of "Veteran" (C 18, L 23) & (C 146, L 24)	Reduced Saving Fund Regular Interest (WAC 415-02-150) Modified the Definition of "Veteran" (C 18, L 23) & (C 146, L 24)
Significant Plan Provisions Not Included in This Valuation	None	None

**CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bellevue, WA — All Items.*

***Amount increases by 3% annually.*

V. RESOURCES

THE OFFICE OF THE STATE ACTUARY'S WEBSITE

Our website contains additional information and educational material not included in this report. The site also contains an archive of prior AVRs and other recent studies that OSA has produced. The following is a list of materials found on our website that could be useful to the reader.

GLOSSARY

Definitions for frequently used actuarial and pension terms.

AGE DISTRIBUTIONS

Tables summarizing valuation statistics by system, plan, and member/annuitant age as of the latest rate-setting valuation.

HISTORICAL DATA

Tables summarizing valuation statistics by retirement system and valuation period.

PRIOR ACTUARIAL VALUATION REPORTS

Archive of valuations over the past several years.

2023 ECONOMIC EXPERIENCE STUDY

Report examining the long-term economic assumptions.

2023 REPORT ON FINANCIAL CONDITION

Presentation examining the financial health of the retirement systems.

2013-2018 DEMOGRAPHIC EXPERIENCE STUDY

Most recent report examining demographic behavior within each of the retirement systems.

RISK ASSESSMENT

Information examining the effect of unexpected experience on the retirement systems.

COMMENTARY ON RISK

Educational information on the risks inherent in our actuarial measurements and how these measurements could vary under different circumstances.

CONTRIBUTION RATE PROJECTIONS

Forecasts for future contribution rates based on projected assets and liabilities.

INTERACTIVE REPORTS

Set of reports displaying funded status, projected benefit payments, and contribution rates as of the latest rate-setting valuation.

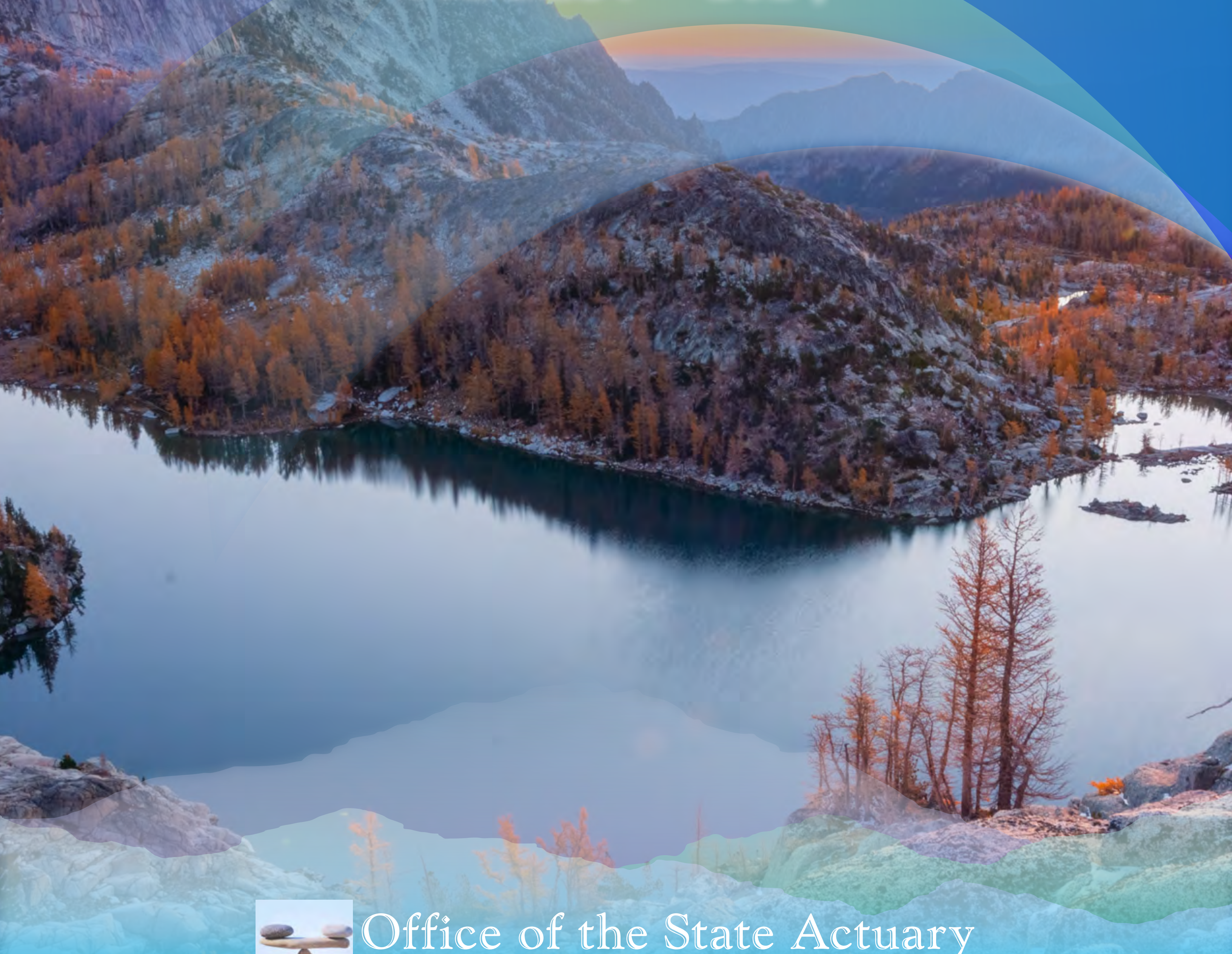
PENSION EDUCATION

Educational material on Washington State pension plans and the work produced by OSA.

WASHINGTON STATE

2023 ACTUARIAL VALUATION

AUGUST • 2024



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