



NEW ENTRANT DEMOGRAPHICS

What Are the New Entrant Demographic Assumptions and How Do We Use Them?

We use this assumption to estimate the demographic characteristics of future new entrants in the Washington State retirement systems. To model these demographics, we make four key assumptions for each age band (or age cohort) including: age, annual salary, percentage of new entrants that comprise each cohort (i.e., the weighting), and gender. The first three assumptions were studied as part of this *2023 Projections and Risk Assessment Study* (PRAS).

High-Level Takeaways

The New Entrant Demographic assumptions have been updated to reflect more recent data. This includes the starting salaries for new entrants, some of which have been impacted by law changes since the [2016 Risk Assessment Assumptions Study](#). For example, [Substitute House Bill 2692](#) (C 140 L 18) put in place a process for setting competitive minimum monthly salaries for Washington State Patrol (WSP) troopers.

Another law change, [Senate Bill 5360](#) (C 313 L 19), impacts the plan a new entrant is defaulted into at hire. This can affect the new entrant demographics for each plan within a system. Due in part to the change in plan default, we determined blended Plan 2 and Plan 3 New Entrant Demographic assumptions would be more appropriate than the prior format of separate assumptions for Plan 2 and Plan 3.

The New Entrant Demographic assumptions were also impacted by methodology changes which are discussed in the next section.

Data, Assumptions, and Methodology

For this analysis, we considered a new entrant to be a member who ended the valuation year as active but began the valuation year as either terminated or had no prior history in the plan. We also defined a new entrant to have less than one year of total service in the given valuation year. One exception is the Washington State Patrol Retirement System (WSPRS) where a new entrant can have upwards of three years of service as a result of required training prior to employment by the WSP.

To study the new entrant demographics, we relied on valuation data from the Department of Retirement Systems. We reviewed data from the last ten years and summarized it into age-based cohorts. Where applicable, the data was studied by retirement system, which is a change from our prior report because we previously assumed Plan 2 and Plan 3 specific New Entrant Demographic assumptions.

For this report, we analyzed the following three New Entrant Demographic assumptions:

- ❖ **Age** – This reflects the estimated hire age for each cohort.



- ❖ **Salary** – Unless noted otherwise, this reflects the estimated annual salary from the 2021 valuation data. For each age cohort, we rounded the salary to the nearest \$1,000.
 - The profiles presented in this report are intended to model new entrants as of June 30, 2021. Since these profiles will be used in future projection models, the new entrant salaries will be rolled forward each year by our General Salary Growth assumption as developed during our biennial [economic experience study](#).
- ❖ **Percent of the New Entrant Population (Weighting)** – This represents the portion of the expected new entrants that will be allocated to each cohort.

To estimate the gender breakdown, we apply our Percent Male/Female assumption. This assumption was set during our [2013-18 Demographic Experience Study](#) and is displayed in the following table. We apply these gender splits evenly across all age cohorts.

Percent Male/Female Assumption						
	PERS	TRS	SERS	PSERS	LEOFF	WSPRS
Percent Male	50%	30%	20%	70%	90%	90%
Percent Female	50%	70%	80%	30%	10%	10%

Results

The following tables display the updated New Entrant Demographic assumptions. Any information on modifications to the assumptions, or adjustments we considered, will follow the tables.

New Entrant Demographic Assumptions (as of 6/30/2021)								
PERS 2/3			TRS 2/3			SERS 2/3		
Age	Salary	Weighting*	Age	Salary	Weighting*	Age	Salary	Weighting*
22	\$45,000	19%	23	\$57,000	20%	22	\$27,000	13%
27	\$52,000	21%	26	\$63,000	28%	27	\$30,000	14%
32	\$56,000	17%	31	\$67,000	17%	32	\$32,000	13%
37	\$57,000	12%	37	\$70,000	12%	37	\$33,000	14%
42	\$60,000	9%	42	\$72,000	9%	42	\$33,000	14%
47	\$61,000	8%	47	\$75,000	6%	47	\$33,000	11%
56	\$61,000	15%	55	\$79,000	8%	52	\$33,000	8%
						60	\$33,000	12%

*Weighting may not sum to 100% due to rounding. For modeling purposes, each cohort will be split based on our Percent Male/Female assumption.



New Entrant Demographic Assumptions (as of 6/30/2021)								
PSERS 2			LEOFF 2			WSPRS 2		
Age	Salary	Weighting*	Age	Salary	Weighting*	Age	Salary	Weighting*
22	\$51,000	23%	23	\$71,000	18%	23	\$71,000	45%
27	\$52,000	28%	27	\$76,000	35%	27	\$71,000	33%
32	\$59,000	17%	32	\$76,000	24%	32	\$71,000	14%
37	\$64,000	11%	37	\$78,000	11%	36	\$71,000	4%
42	\$67,000	8%	42	\$80,000	6%	41	\$71,000	3%
47	\$73,000	6%	47	\$88,000	3%	46	\$71,000	1%
56	\$76,000	8%	54	\$106,000	3%			

*Weighting may not sum to 100% due to rounding. For modeling purposes, each cohort will be split based on our Percent Male/Female assumption.

We made adjustments to the salary component of our New Entrant Demographic assumptions. Historical new entrant data generally showed new entrant salaries increased with age. For the purpose of this study, we adjusted the 2021 valuation data annual salaries such that older cohorts had an average salary equal to or higher than younger cohorts. These adjustments were made to four cohorts in total and resulted in small salary changes, with the most common adjustment being an increase or decrease to average cohort salary of \$1,000.

For WSPRS, we observed less than 80 new entrants each year, which is low relative to other systems. For this reason, we assumed the average new entrant salary will apply to all age-based cohorts.

We assumed the School Employees' Retirement System (SERS) and WSPRS have slightly different age cohorts than the rest of the retirement systems. For SERS, we initially observed the largest weight was being applied to the oldest cohort (age 50+), so we added an additional age cohort for this retirement system. For WSPRS, we observed only one new entrant older than age 50 (less than 0.5 percent of all new entrants over the last ten years), so we assume no new entrants in WSPRS for this age cohort.

We also considered other approaches to our new entrant demographics, including:

- ❖ WSPRS new entrants typically begin their employment with accrued service that exceeds one year. All members begin at the [WSP Academy](#) where they receive training. Any training received at this academy is initially considered Public Employees' Retirement System service; however, it is converted to WSPRS service upon [employment](#). Given this, we considered various service constraints, between one and three years, for our definition of a new entrant in WSPRS. Ultimately, we limited the new entrant data to those that have no more than three years of service upon entering WSPRS (since we found some new hires begin WSPRS employment with more than two years of service).
 - We did not include any accrued service for the WSPRS new entrant profiles because the age cohorts we created reflect the age when they first began training for their future positions, e.g., for new troopers, this is the age they joined the WSP Academy.



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- ❖ The demographics of Plans 2 and 3 could be different, so we considered separate Plan 2 and Plan 3 assumptions. After reviewing the 2021 valuation data for each plan, we determined that there was not enough information to suggest separate assumptions were necessary. As an example, we expected members choosing Plan 3 may be younger due to the portability of the plan; however, we did not observe younger Plan 3 new entrants relative to Plan 2 in the most recent data. In addition, the recent change in plan default noted above can also impact the demographics of the plans, but we do not have enough data to determine the materiality of the change. We will continue to monitor and revisit the idea of separate Plan 2 and Plan 3 assumptions in the next PRAS.