



SYSTEM GROWTH

What Is the System Growth Assumption and How Do We Use It?

This assumption represents the annual percent increase in system membership over a 50-year period. The application of this assumption in our modeling, along with other demographic assumptions, allows us to estimate the total number of active members in each system for each year under a 50-year projection.

High-Level Takeaways

We observed historical retirement system growth is volatile on an annual basis and can be heavily influenced by external factors. This includes economic downturns and recoveries, the creation of new retirement systems, modifying membership eligibility for existing systems, and more recently, impacts due to COVID-19.

Overall, we expect all the retirement systems to continue to grow at a modest pace. The one exception is the Public Safety Employees' Retirement System (PSERS) in which we expect a larger short-term increase in system size due to past law changes that expanded the eligible employers of the retirement system.

Data, Assumptions, and Methodology

We relied on our valuation data from the Department of Retirement Systems along with both historical and projected population growth data¹ from the Office of Financial Management (OFM) to help inform our System Growth assumption.

Historical Data

Retirement system growth can be volatile on an annual basis. Part of the volatility can be explained by natural growth in the systems. However, other factors can influence the growth of the retirement systems including the following:

- ❖ **Plan Creation and Plan Transfer** – The creation of the School Employees' Retirement System (SERS) and PSERS created outliers in the data since members who were previously in the Public Employees' Retirement System (PERS) transferred to the newly constructed plans. Plan creations are rare, so we assume any impacts will be a one-time event and were removed. In addition, 2018 legislation ([Chapter 241, Laws of 2018](#)) allowed eligible active members a one-time option to transfer from PERS to PSERS. This event led to a significant increase in PSERS active counts in 2019 and was also removed from the analysis. Given the size of PERS, the 2018 legislation did not have a significant change on observed PERS growth in 2019 and consequently was kept in the analysis.
- ❖ **The Great Recession** – This economic period resulted in temporary legislative practices, such as hiring freezes, that impacted system growth from 2010 to 2012. This data was not removed from the analysis because

¹We collected data from OFM's December 2021 [Forecast of the State Population Report](#).



we observed a bounce back in system growth following the negative growth.

- ❖ **K-12 School Funding** – The Teachers' Retirement System (TRS) and SERS have had higher growth in the last five to ten years, which is partially related to a heightened focus on school funding and increasing the number of teachers per student. Following the recent, large investments in school funding that contributed to the higher-than-normal K-12 system growth, we expect K-12 growth to slow down because we believe additional investments in school funding have stabilized.
- ❖ **COVID-19** – As of the publication of this report, the full extent of COVID-19 impacts on the growth of the Washington State retirement systems is not known. For most systems, we observed negative growth in Fiscal Year (FY) 2021 which coincides with the hiring freezes, members leaving employment, and temporary layoffs. While this data was removed from our summarized analysis for purposes of setting a long-term assumption, we did take any system growth reductions into consideration when setting our forward-looking assumption.

We also considered population growth in the State of Washington because it's reasonable to assume a link between the growth of the population and occupations employed by the state. We included Washington State growth for all ages as well as ages 5-17 (school-age population). Relative to Washington State retirement systems, the annual Washington State growth is less volatile. The following table displays the historical growth since 1990 for the Washington State retirement systems and those two Washington State populations.



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Historical Growth in WA Retirement Systems and WA Population

Year	PERS	SERS	PSERS	TRS	LEOFF	WSPRS	All Ages WA Pop	Ages 5-17 WA Pop
1990	8.0%			4.3%	4.4%	3.6%	2.9%	3.5%
1991	9.8%			2.8%	4.2%	10.7%	2.7%	3.2%
1992	4.2%			4.7%	2.1%	1.9%	1.8%	2.2%
1993	1.5%			2.3%	2.3%	(3.6%)	1.9%	2.3%
1994	1.6%			2.1%	3.8%	(1.8%)	2.0%	2.4%
1995	0.8%			2.4%	3.1%	(5.9%)	2.0%	2.3%
1996	2.1%			0.5%	2.2%	1.8%	1.6%	1.9%
1997	2.1%			2.3%	2.2%	1.1%	1.8%	2.1%
1998	2.9%			1.7%	1.0%	0.2%	1.9%	2.2%
1999	2.4%			1.4%	4.3%	4.2%	1.9%	2.2%
2000				1.9%	1.2%	4.6%	1.8%	2.1%
2001	0.4%	1.3%		3.7%	1.8%	1.4%	1.3%	0.1%
2002	0.8%	3.0%		(0.2%)	1.7%	0.8%	1.5%	0.3%
2003	0.2%	(1.2%)		0.0%	2.6%	4.3%	1.1%	(0.1%)
2004	1.1%	1.3%		0.8%	0.3%	(2.0%)	1.3%	0.2%
2005	(0.4%)	1.0%		1.0%	1.9%	(3.3%)	1.5%	0.3%
2006		0.9%		0.7%	2.7%	0.0%	1.9%	0.8%
2007	1.9%	0.0%		(4.1%)	1.8%	1.5%	1.6%	0.5%
2008	2.3%	1.9%		2.4%	2.6%	4.6%	1.3%	0.2%
2009	(1.5%)	1.4%	9.0%	1.3%	1.5%	0.8%	1.0%	(0.1%)
2010	(1.7%)	(0.3%)	(3.0%)	(1.6%)	(1.3%)	(0.6%)	0.8%	(0.3%)
2011	(2.6%)	(0.0%)	(0.5%)	(0.2%)	(0.1%)	(0.5%)	0.7%	(0.5%)
2012	(1.2%)	(1.5%)	1.5%	(1.3%)	(0.9%)	(1.5%)	0.8%	0.1%
2013	0.1%	1.4%	6.2%	0.9%	(0.4%)	0.0%	1.0%	0.6%
2014	1.2%	2.8%	6.8%	2.1%	0.4%	(2.1%)	1.3%	0.9%
2015	0.5%	3.8%	7.9%	2.3%	1.2%	(0.9%)	1.4%	1.0%
2016	1.9%	4.4%	5.4%	3.0%	0.9%	(6.5%)	1.8%	1.4%
2017	2.1%	3.7%	6.2%	3.3%	2.8%	4.3%	1.8%	1.6%
2018	0.9%	3.0%	6.1%	2.4%	2.4%	3.1%	1.7%	1.4%
2019	0.7%	2.5%		3.0%	2.3%	0.2%	1.7%	1.5%
2020	1.2%	2.6%	14.7%	2.8%	1.5%	1.1%	1.5%	(0.2%)
2021	(0.2%)	(4.9%)	2.7%	0.0%	(0.8%)	(0.1%)	0.8%	0.9%

Note: We removed certain data points from our analysis for reasons noted above.



We summarized this annual data to provide average growth over varying time periods.

Summarized Historical Growth								
Geometric Averages	PERS	SERS	PSERS	TRS	LEOFF	WSPRS	All Ages WA Pop	Ages 5-17 WA Pop
Last 20 Years (2001-2020)	0.4%	1.6%		1.1%	1.3%	0.2%	1.3%	0.5%
Last 15 Years (2006-2020)	0.4%	1.8%		1.1%	1.1%	0.2%	1.4%	0.6%
Last 10 Years (2011-2020)	0.5%	2.3%	5.3%	1.8%	1.0%	(0.3%)	1.4%	0.8%
Last 5 Years (2016-2020)	1.4%	3.2%	6.4%	2.9%	2.0%	0.4%	1.7%	1.2%

Projected Data

Our projections for the Washington State retirement systems span a 50-year period and require assumptions on future system growth. OFM’s projection for state growth was considered when developing our new recommendation because, as discussed in the Historical Data section, we believe it’s reasonable to assume a link between state growth and the number of occupations employed by the state.

As of the publication of this report, OFM’s most recent forecast projects annual growth for the entire state to range between 0.7 percent and 0.9 percent per year, with an average over the next thirty years of 0.8 percent per year. The projection of the K-12 school-age population (ages 5-17) is negative or low growth in the short term due to a decrease in net migration and lower fertility rates within the state, then increasing to an ultimate rate of 0.8 percent at the end of the 30-year forecast. The average growth in ages 5-17 over the next thirty years is 0.3 percent per year.

Results

For the [2016 Risk Assessment Assumptions Study](#) (RAAS), we developed a “select and ultimate” format for the System Growth assumption which allows us to vary the assumption by time period. The select period represents an initial time period and the ultimate period represents all time periods after the select period. The original intent of this format was to set our select period equal to the Membership Growth for Plan 1 Funding assumption which is reviewed as part of our biennial economic experience study. As noted during the [2021 Economic Experience Study](#), we do not expect the Membership Growth for Plan 1 Funding assumption to impact future calculated unfunded actuarial accrued liability contribution rates, so we removed this connection between these assumptions. With the exception of SERS and PSERS, we no longer believe a select and ultimate approach is necessary for the System Growth assumption.

The following table displays the old and new System Growth assumptions. Information on how the new assumptions were developed will follow the table.



System Growth Assumption						
	PERS	SERS	PSERS	TRS	LEOFF	WSPRS
Old Assumption						
Select Period	1.00%	1.00%	*	1.00%	N/A	N/A
Duration (In Years)	10	10	*	10	N/A	N/A
Ultimate Period	0.65%	0.45%	1.45%	0.50%	0.80%	0.85%
New Assumption						
Select Period	N/A	5.40%	3.60%	N/A	N/A	N/A
Duration (In Years)**	N/A	1	15	N/A	N/A	N/A
Ultimate Period	0.60%	0.50%	0.60%	0.50%	0.80%	0.80%

*Following expansion of PSERS during the 2018 Legislative Session, we increased the select period rate and its duration since the 2016 RAAS. We expected a large population transfer in year 1 followed by annual growth of approximately 3.4% over the next 14 years.

**Beginning with FY 2022.

Projecting growth in the retirement systems can be difficult given the historical volatility, so we rounded our new assumptions to the nearest 0.10 percent to account for less certainty. To determine the new assumptions, we took into consideration the following for each system:

- ❖ **PERS** – The old ultimate period assumption suggested that PERS growth would be lower than Washington State (All Ages) growth, which remains true based on the most recent experience. Given this, we think the old assumption remains reasonable; however, we made a small downward adjustment to reflect lower OFM state population growth projections since the 2016 RAAS.

We considered a select period assumption that is lower than our long-term growth expectations to reflect new legislation that expanded eligible employers in PSERS (see PSERS section below). However, we did not make this change since it has a notably smaller impact on the PERS annual growth than PSERS given the size of their respective retirement systems.

- ❖ **PSERS** – Consistent with the old assumption, we assume a select and ultimate assumption format for PSERS. This allows us to assume short-term growth that is materially different from our long-term expectations (or ultimate growth) of the plan. Over the 50-year projection period, the natural plan growth of PSERS is anticipated to be similar with PERS, which again is slightly lower than state population growth projections. In addition to any natural plan growth, the select period captures the number of active PERS members who stop working and whose replacement, due to prior legislation, automatically become a member of PSERS. In the analysis, we defined this subset of the population as “future replacement members”.

To estimate the number of future replacement members, we relied on analysis from two separate bills that allowed for PERS members to transfer to PSERS ([C 242 L 04](#) and [C 241 L 18](#)). Using data from the analysis of these two bills, as well as our demographic assumptions, we assume approximately 5,100 active PERS members will be replaced by a PSERS new hire once they leave employment. This estimate is based on a measurement date of 2021 and reflects an approximate 50 percent



increase in current plan membership. If we assume these future replacement members will enter PSERS over a fixed 15-year period, then we would assume a 3.00 percent annual growth. Given natural growth is also expected to occur during the select period, we assume a 3.60 percent select period growth (3.00 percent for future replacement members and 0.60 percent for natural growth).

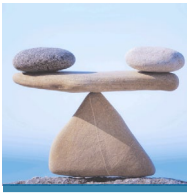
We considered an ultimate growth rate similar to other public safety retirement systems (the Law Enforcement Officers’ and Fire Fighters’ [LEOFF] Plan 2 and the Washington State Patrol Retirement System [WSPRS]) given the member’s higher risk profile, relative to other retirement plans, and a potential connection to state population growth. In the end, we chose an ultimate growth assumption consistent with PERS since a portion of the plan’s members are security guards at jails and prisons and incarceration rates have been declining.

- ❖ **K-12 (TRS and SERS)** – Retirement system growth in K-12 significantly exceeded our prior expectations. The main reason was a heightened focus on school funding and increasing the number of teachers per student. As discussed in the **Data, Assumptions, and Methodology** section, we do not expect these higher levels of growth to continue in the long term. Furthermore, we observed lower OFM state growth projections for school age children since the 2016 RAAS, which can indicate lower expected annual K-12 growth since fewer students are expected to enroll.

For long-term K-12 growth, we think the old ultimate period assumptions remain reasonable; however, we combined the SERS and TRS assumptions because we do not expect materially different growth between the two systems moving forward. Since the 2016 RAAS, SERS growth has exceeded TRS, which we believe is due to the expansion of school employees to include additional educational assistants and information technology professionals, but we expect these increases to be less pronounced moving forward.

We included a one-year select period assumption due to COVID-19 and its impact on SERS system growth rates. Across the retirement systems, SERS had the most noticeable change in system growth during the pandemic. In FY 2021, schools were generally closed for in-person instruction and it’s our understanding that some SERS members were temporarily laid off as their services were not needed, e.g., bus drivers, cafeteria workers, etc. Given that schools generally re-opened in-person instruction the following school year, we expect a bounce back occurred in FY 2022. To reflect this bounce back in staffing, we assume a growth rate of 5.40 percent for FY 2022. The 5.40 percent reflects a return from the prior year population reduction of 4.90 percent plus our assumed natural growth rate of 0.50 percent per year. A FY 2022 adjustment, related to COVID-19, could be reasonable for other systems but was not determined to be necessary due to their relatively smaller assumed bounce backs.

- ❖ **LEOFF and WSPRS** – Relative to other Washington State retirement systems, LEOFF has displayed the least amount of annual volatility. In



general, LEOFF has grown at a similar pace as the Washington State population, and we expect this relationship to continue in the future. Police funding and public sentiment towards policing have been highly publicized issues in recent years and some employers have seen large reductions to their police force². When considered across the entire LEOFF retirement system, we do not believe the relatively small decrease in headcount that occurred during FY 2021 requires a bounce back assumption for our projections. Overall, we think the old LEOFF System Growth assumption remains reasonable. We considered, but did not lower this assumption, after reviewing the lower OFM state growth projections since the 2016 RAAS.

WSPRS is a smaller retirement system and has displayed substantial system growth volatility on an annual basis. In the past, the Washington State Patrol (WSP) has reported issues in recruitment and retention, but legislation has passed to help address these issues and become more competitive with LEOFF in terms of salary. Both retirement systems serve public safety and we believe it's reasonable that growth will be similar to Washington State growth. For this reason, we assume LEOFF and WSPRS will have the same long-term growth.

Looking beyond the historical data, in FY 2022 we expect WSPRS to experience negative growth due to a October 2021 mandate that all members must show proof of vaccination against COVID-19. The linked article also suggests that WSP is recruiting to fill recently terminated positions, so we did not create a select period assumption since the decline in membership is expected to be followed shortly by an offsetting increase in membership. With that said, we will review if any short-term adjustments to our WSPRS System Growth assumption are appropriate after we update our model to include actual data for FY 2022.

Some LEOFF employers may have had vaccine requirements, however it has not been widely reported in the media or as definitive in terms of headcounts. Just like WSPRS, we will review the actual experience for FY 2022 when available and may make subsequent short-term adjustments to our LEOFF System Growth assumption.

²[*Seattle City Council Floats Hiring Bonuses to Bolster Police Staffing.*](#)