

Replacement Salaries

Overall Summary

What are the Replacement Salaries Assumptions and how are they Used?

Each year we review the salaries reported in the valuation data for reasonableness and make a number of salary adjustments when we determine it is necessary. We must also estimate default salaries for certain members for whom salaries are not provided in the data.

Minimum/Maximum Salary

If we find that a reported salary for an active member is too low, we reset that salary to a minimum level. Unreasonably low salaries might result from a number of sources. For example, employers occasionally report incorrect or incomplete salaries for certain members, and those errors are not always corrected before the valuation data is prepared.

If a member's salary is higher than is reasonably expected, we currently reset the salary to a predetermined maximum salary. However, we have changed the method we use to set maximum salaries. Please see the **Maximum Salaries** section for more information.

Low Service

Our valuation software projects service and salaries based on full-time employment, so the salaries of any active members with less than a full year of service must be adjusted. Generally speaking, if the member has at least two months of service, we simply annualize their salary. If the member's service is less than two months, we set default salaries for these members.

Terminated Vested Salary

Terminated vested members can receive deferred retirement benefits, but historical salaries for these members are not always accessible through the valuation data. As a result, we develop basic salary levels where needed for these members during each experience study.

TRS 1 Temporary Disability

Like terminated vested members, Teachers' Retirement System (TRS) Plan 1 temporarily disabled members are inactive members who will eventually be entitled to pensions; their historical salaries are not provided in the valuation data. As a result, we estimate default salaries for these members.

WSPRS Disability Average Final Salary

Like the previous two categories, members in the Washington State Patrol Retirement System (WSPRS) with disabilities are also inactive members. While the disability benefits are paid from a fund outside the pension system, the spouses of disabled members may also receive a survivor pension paid out of the pension fund after that member's death. According to [RCW 43.43.270](#), the Average Final Salary (AFS) of a disabled member who dies and leaves a survivor will be the same as for currently active members who hold the same rank the disabled member held when the disability occurred. Our valuation model requires that we supply this salary for currently disabled members.

High-Level Takeaways

Our current replacement salary assumptions (and the resulting rates) are reasonable. With the exception of the maximum salary, we have not changed any of these assumptions.

Assumptions

All assumptions used in the development of replacement salaries match those disclosed in the [2012 Actuarial Valuation Report](#). In particular, we assume that active members will become full-time in the future, even if they are not reported as full time in any given valuation period.

General Methodology

We used different methods for each assumption. Please see the individual sections below for the methods used.

Data

We used the final 2012 valuation data to study minimum and maximum salaries. For the terminated vested salary, TRS 1 temporary disability salary, and WSPRS disability AFS assumptions we used preliminary 2013 valuation data.

Law Changes

Since the last study, no law changes have impacted these assumptions.

Results

Minimum Salaries

PERS

Job classifications in the Public Employees' Retirement System (PERS) are quite varied. For this reason, salaries range from very low to very high. We believe the minimum salary in PERS can reasonably be represented by the minimum wage in Washington. Each valuation year, we set the minimum PERS salary to the minimum hourly wage in effect on January 1 of the valuation year multiplied by 2,080 hours (40 hours per week times 52 weeks in a year). We round the resulting annual salary to the nearest thousand dollars.

For example, in 2012, the result was:

$$\$9.04 \times 2,080 = \$18,803 \text{ (rounds to } \$19,000\text{)}.$$

TRS

Membership in TRS mainly consists of certificated teachers and administrators employed by school districts. Washington State's teachers' pay schedule is an appropriate measure to set minimum salaries.

Salaries in this scale vary by education level and years of teaching experience. For the minimum salary, we select the salary level for a teacher with a Bachelor of Arts degree and zero years of experience, rounded down to the nearest thousand dollars.

For example, in 2012, the TRS minimum salary was \$30,000.

SERS

The School Employees' Retirement System (SERS) membership consists of non-certificated employees of school districts and educational service districts. In SERS, as in PERS, salaries are widely varied. However, SERS is different than PERS in that a lot of members work less than full time, or work fewer than 2000 hours and receive full-time service, so it is not feasible to use the same minimum wage rule.

Instead, we multiply the state's minimum hourly wage in effect as of January 1 of the valuation year by the full-time number of hours in a school year. We estimate the number of hours in a school year as eight hours a day times 180 days. We round this value to the nearest thousand dollars.

For example, in 2012, the result was:

$$\$9.04 \times 8 \times 180 = \$13,018 \text{ (rounds to } \$13,000\text{).}$$

LEOFF, WSPRS, PSERS

The Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF), WSPRS, and the Public Safety Employees' Retirement System (PSERS) represent public safety employees. While their salaries may be varied, their job classifications are fairly similar in nature. Minimum salaries for these systems are set once at the beginning of the experience study period and left unchanged until the next experience study. We select values such that the minimum only impacts about 1 percent of all actives.

LEOFF	All Plans	
	\$47,000	
WSP	Plan 1	Plan 2
	\$65,000	\$43,000
PSERS	Plan 2	
	\$30,000	

Maximum Salaries

For all systems, we currently set the maximum Salary at \$500,000. However, our valuation software has the ability to limit pensionable salary for us, so we will use that method beginning with the 2014 valuation. We will limit salaries in our valuations to the projected Internal Revenue Code 401(a)(17) maximum compensation level. This limit was \$255,000 in the 2013 calendar year.

Low-Service Salaries

We use the following methods when setting low-service salaries. Low-service actives fall into two categories: those with less than two months' service during the valuation year and those with at least two months' service, but less than a full year of service for the year.

Non-SERS Members

For active non-SERS members with less than two months' service credit, we assign a default salary according to the following. First, a default entry salary is found by examining the prior year's valuation data. The entry salary for a given system is the average salary for actives with one year of service, rounded to the nearest thousand dollars. We adjust the salary with one year of the general salary increase assumption to bring last year's salary forward to the current valuation year. Then, to reflect that not all members with low service are new members, we adjust this entry salary by our service-based salary increase scale. Members with more work experience, who receive this adjustment, are assigned a higher salary. Finally, the resulting adjusted salary is rounded to the nearest thousand dollars.

Non-SERS members with more than two months' service, but less than a full year of service also have their salaries adjusted to an annual level. We do this by dividing their actual pay by the portion of full service credit they received. For example, a member with

0.25 years of service during the year who earned \$10,000 during that time receives an annualized salary of \$40,000.

SERS Members

Due to the differences in service credit rules, we used a different method for annualizing SERS salaries than we did for Non-SERS salaries.

SERS members with less than two months service are assigned salaries equal to the median hourly SERS wage from the prior valuation period, times the average number of SERS hours worked in the prior valuation period. The resulting annual salary is rounded down to the nearest \$1,000. For example, in 2012, the replacement salary was

$$\$16.99 \text{ (median hourly wage)} \times 1,557 \text{ (average hours)} = \$26,000.$$

Members with at least two months of service have their service adjusted as follows. If the member worked the full school year, but received less than a full year of credit, salaries are adjusted as described above for non-SERS members with at least two months of service credit above.

If the member entered service after November 15, they are assigned the greater of their actual salary and the salary assigned for SERS members with less than two months service.

Terminated Vested Salaries

To assign salaries for terminated vested members (who may be entitled to a deferred pension benefit) we first look to see if we kept a historical salary for such a member in the prior year's data. If so, we copy the salary to the current year's data. If a member was

active in the prior year and terminated in the current year, we copy the prior year's salary to the current year's salary and keep it as historical.

To determine default salaries for terminated vested members whose salary history is not known, we estimate average pay for each system in various service groups as of a particular base year. We assign members a salary consistent with their service level (service is rounded down to the nearest full year). We then adjust the salaries by the general salary increase for as many years as have passed between the base year and the year the member terminated. We round the resulting salary to the nearest thousand dollars.

The following table lists the new base salaries by system and service.

Terminated Vested Base Salaries as of 2013						
Years of Service	LEOFF	PERS	TRS	SERS	PSERS	WSP
Less Than 5	\$75,000	\$45,000	\$52,000	\$22,000	\$46,000	\$58,000
At least 5, Less Than 10	87,000	55,000	57,000	27,000	56,000	69,000
At least 10, Less Than 15	94,000	60,000	67,000	30,000	61,000	77,000
At least 15, Less Than 20	99,000	63,000	75,000	32,000	65,000	79,000
At least 20, Less Than 25	105,000	66,000	77,000	35,000	68,000	82,000
At Least 25	\$113,000	\$69,000	\$79,000	\$42,000	\$71,000	\$85,000

TRS 1 Temporary Disability Salary

To set the default salary for these members, we use the salary from the default terminated vested table above for TRS members with between 20 and 25 years of service, or \$77,000, with a base year of 2013. This amount will be increased with our General Salary Increase assumption for each year in the study period.

WSPRS Disability AFS

The default disability AFS assumption for WSPRS members is \$81,000, with a base year of 2013. This amount will be increased with our assumption for each year in the study period.