

Military Service Credit Load

Overall Summary

What is the Military Service Credit Load Assumption and how is it Used?

We apply a “load” to a given benefit provision to estimate the additional cost of another, related benefit provision. In application, a load is a percentage increase applied to an existing benefit in our valuation software where the increase represents the cost of another benefit provision.

The Military Service Load assumption is used to compensate for the cost of additional service credit applied in recognition of military service earned before joining a state retirement plan. This type of service is known as non-interruptive military service.

Members of the Public Employees’ Retirement System (PERS) Plan 1 and the Washington State Patrol Retirement System (WSPRS) Plan 1 are eligible to add up to five years of military service to their membership service total once the member reaches at least 25 years of Washington retirement plan service (membership service). This service is provided at no cost to the member. The load estimates the cost to the system.

These loads are gender and plan-based.

High-Level Takeaways

Generally, we are seeing a downward trend in the percentage of members with non-interruptive military service for PERS 1 and WSPRS 1. Since WSPRS 1 closed recently, we also considered the possibility of steady or even upward trends for WSPRS 1.

These downward trends are likely driven by the limited time periods during which members could have served in the military. Specifically, the cost that we estimate is only for military service that occurs before entry into the plan. PERS 1 closed to new members in 1977 and WSPRS 1 closed to new members in 2002.

Assumptions

Except as noted, all assumptions used in the development of this assumption match those disclosed in the [2012 Actuarial Valuation Report](#).

General Methodology

Calculation Method

We used three different methods to calculate the non-interruptive military service cost/load for PERS 1 and WSPRS 1. Based on these three methods, we selected a load reflecting past experience and future expectation.

For each method, we used the same basic calculation. We identified the percentage of members with at least 25 years of membership service and calculated the average length of their military service. We then divided the average length of military service by the average membership service among all active members. We performed this calculation for each year in the study period. This results in an increase factor that we use to estimate the cost/load of non-interruptive military service.

We used the following methods to analyze the load.

- ◆ **Aggregate average method.**

We calculate the overall average cost/load throughout the entire study period.

◆ **Year-to-year average method.**

We calculate the load for each year in the study period and then set a trend line to the results.

◆ **Three-year rolling average method.**

We calculate the three-year rolling average at each year in the study period and then set a trend line to the results.

Data Adjustments

We corrected an error from the prior demographic experience study associated with the data used. Specifically, we study trends in military service for members who retire in a given year with 25 years of service. The prior study incorrectly counted all retirees in a given year.

Data

We began with 17 years of experience study records, from 1996-2012. No special data was added for this assumption and no data was excluded.

Law changes

No laws changes impacted our selection of this assumption.

Results

All-Plan Summary

For males, we see an overall downward trend in the rates. For females, we held the rate steady for PERS 1 and increased the rate for WSPRS 1.

	Year-to-Year Average		3-Year Rolling Average	
	Male	Female	Male	Female
1996	37.67	34.33	0.00	0.00
1997	37.03	38.00	0.00	0.00
1998	36.72	31.88	37.14	34.74
1999	36.87	38.00	36.87	35.96
2000	35.94	27.43	36.51	32.43
2001	34.73	33.77	35.85	33.07
2002	34.89	25.00	35.19	28.73
2003	35.01	29.00	34.88	29.26
2004	32.21	36.00	34.04	30.00
2005	30.86	18.00	32.70	27.67
2006	31.29	18.20	31.46	24.07
2007	33.54	38.25	31.90	24.82
2008	34.59	33.00	33.14	29.82
2009	35.69	23.00	34.61	31.42
2010	33.55	21.33	34.61	25.78
2011	34.75	34.00	34.66	26.11
2012	35.53	0.00	34.61	18.44

WSPRS 1 — Months of Military Service for Members with at least 25 Years of Service				
	Year-to-Year Average		3-Year Rolling Average	
	Male	Female	Male	Female
1996	32.10	0.00	0.00	0.00
1997	36.64	0.00	0.00	0.00
1998	28.27	0.00	32.34	0.00
1999	31.33	0.00	32.08	0.00
2000	23.91	0.00	27.84	0.00
2001	31.00	0.00	28.75	0.00
2002	37.50	0.00	30.80	0.00
2003	36.57	0.00	35.02	0.00
2004	45.11	0.00	39.73	0.00
2005	40.50	0.00	40.73	0.00
2006	21.25	0.00	35.62	0.00
2007	41.20	0.00	34.32	0.00
2008	35.00	0.00	32.48	0.00
2009	48.50	0.00	41.57	0.00
2010	48.43	0.00	43.98	0.00
2011	40.82	48.50	45.92	16.17
2012	33.88	60.00	41.04	36.17

PERS 1 — Percentage of Members with Military Service and at least 25 Years of Service				
	Year-to-Year Average		3-Year Rolling Average	
	Male	Female	Male	Female
1996	53.00%	1.48%	0.00%	0.00%
1997	50.70%	1.27%	0.00%	0.00%
1998	48.99%	1.89%	50.90%	1.54%
1999	49.80%	0.58%	49.83%	1.25%
2000	45.30%	1.15%	48.03%	1.21%
2001	47.00%	1.92%	47.37%	1.22%
2002	42.84%	0.54%	45.05%	1.20%
2003	36.29%	0.95%	42.05%	1.14%
2004	37.06%	0.62%	38.73%	0.70%
2005	29.48%	0.15%	34.28%	0.57%
2006	25.50%	0.74%	30.68%	0.51%
2007	21.07%	0.63%	25.35%	0.51%
2008	21.90%	0.60%	22.83%	0.66%
2009	24.13%	0.87%	22.37%	0.70%
2010	25.27%	0.68%	23.77%	0.71%
2011	22.95%	1.09%	24.12%	0.88%
2012	25.59%	0.00%	24.60%	0.59%

WSPRS 1 — Percentage of Members with Military Service and at least 25 Years of Service				
	Year-to-Year Average		3-Year Rolling Average	
	Male	Female	Male	Female
1996	35.71%	0.00%	0.00%	0.00%
1997	53.85%	0.00%	0.00%	0.00%
1998	34.38%	0.00%	41.31%	0.00%
1999	44.12%	0.00%	44.11%	0.00%
2000	33.33%	0.00%	37.28%	0.00%
2001	53.33%	0.00%	43.59%	0.00%
2002	38.10%	0.00%	41.59%	0.00%
2003	33.33%	0.00%	41.59%	0.00%
2004	34.62%	0.00%	35.35%	0.00%
2005	33.33%	0.00%	33.76%	0.00%
2006	23.53%	0.00%	30.49%	0.00%
2007	31.25%	0.00%	29.37%	0.00%
2008	33.33%	0.00%	29.37%	0.00%
2009	18.18%	0.00%	27.59%	0.00%
2010	26.92%	0.00%	26.15%	0.00%
2011	30.56%	100.00%	25.22%	33.33%
2012	22.86%	33.33%	26.78%	44.44%

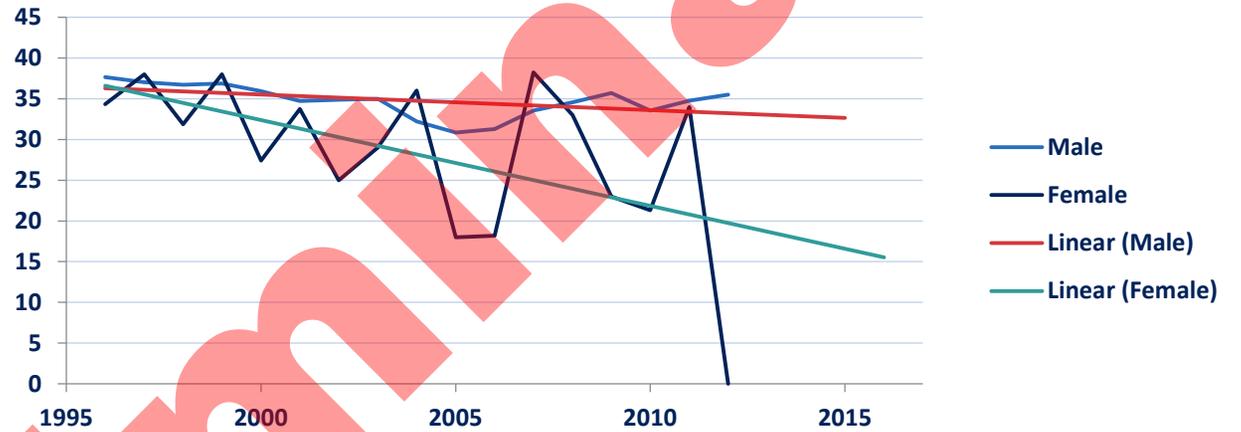
By Plan

PERS 1

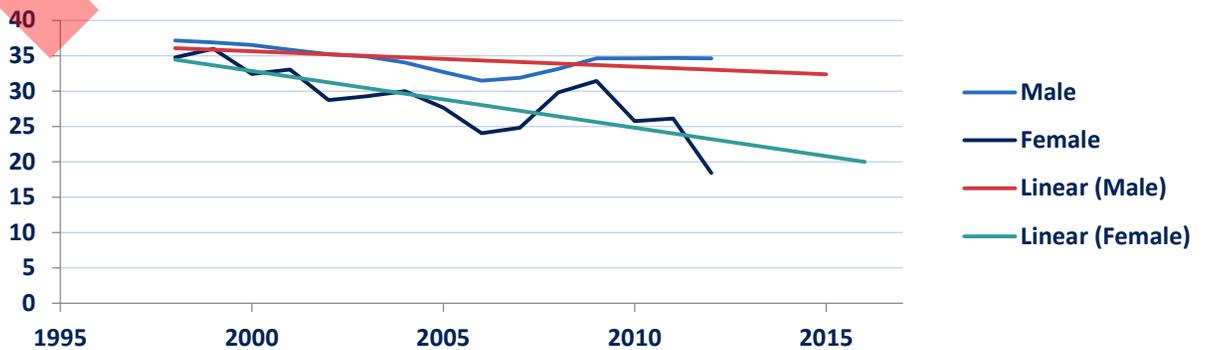
Past Experience

The following charts show the average length of military service for PERS members with at least 25 years of membership service.

PERS 1 – Year-to-Year Average Number of Months of Military Service for Members with at least 25 Years of Service



PERS 1 – Three-Year Rolling Average Number of Months of Military Service for Members with at least 25 Years of Service

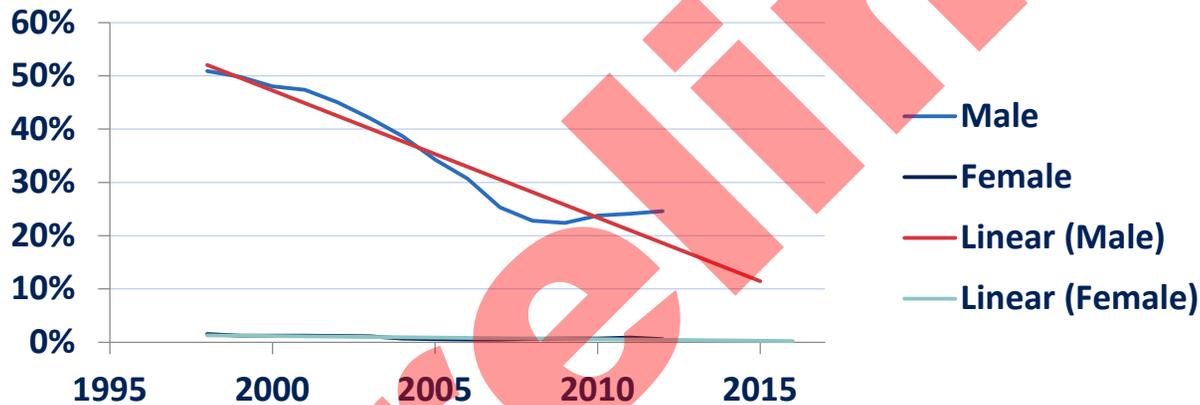


The next two charts show the proportionate percent of PERS 1 members who have military service and at least 25 years of membership service.

PERS 1 – Year-to-Year Average Percentage of Members with Military Service and at least 25 Years of Service



PERS 1 - Three-Year Rolling Average Percentage of Members with Military Service and at least 25 Years of Service



General Methodology

We considered, but ultimately chose not to compare members with military service to all retirees in the plan (i.e., instead of just those who retired with at least 25 years of membership service.) We chose not to use this alternative because we believe the existing method is a better model of the benefit.

WSPRS 1

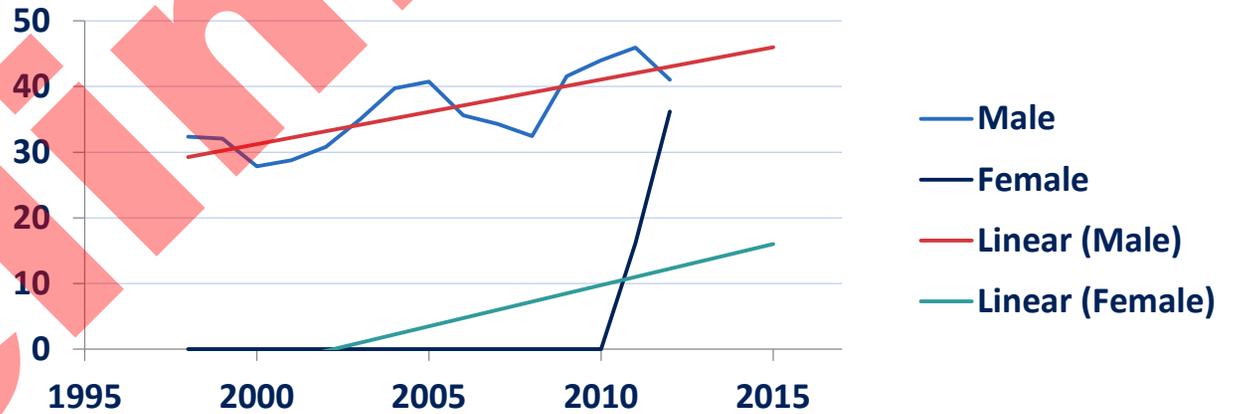
Past Experience

The following charts show the average length of military service for WSPRS members with at least 25 years of membership service.

WSPRS 1 - Year-to-Year Average Number Months of Military Service for Members with at least 25 Years of Service

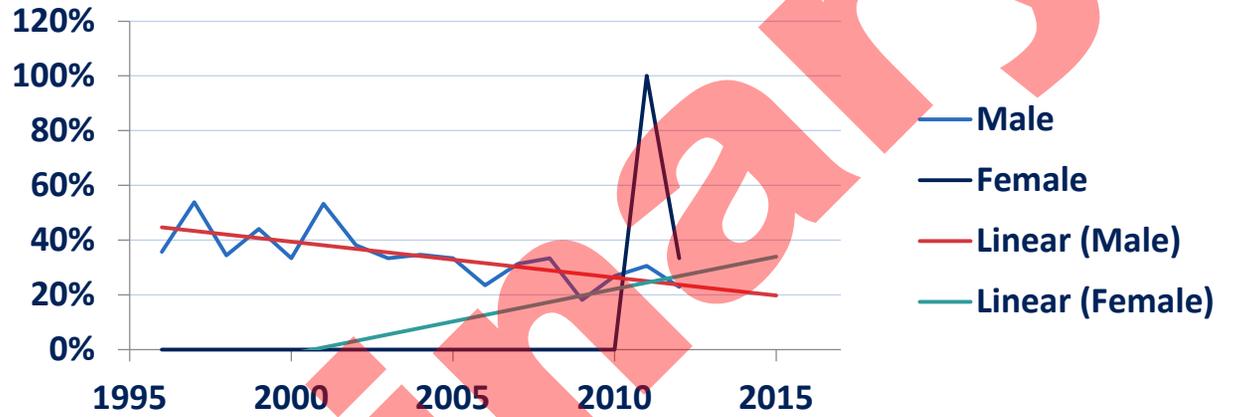


WSPRS 1 - Three-Year Rolling Average Number of Months of Military Service for Members with at least 25 Years of Service

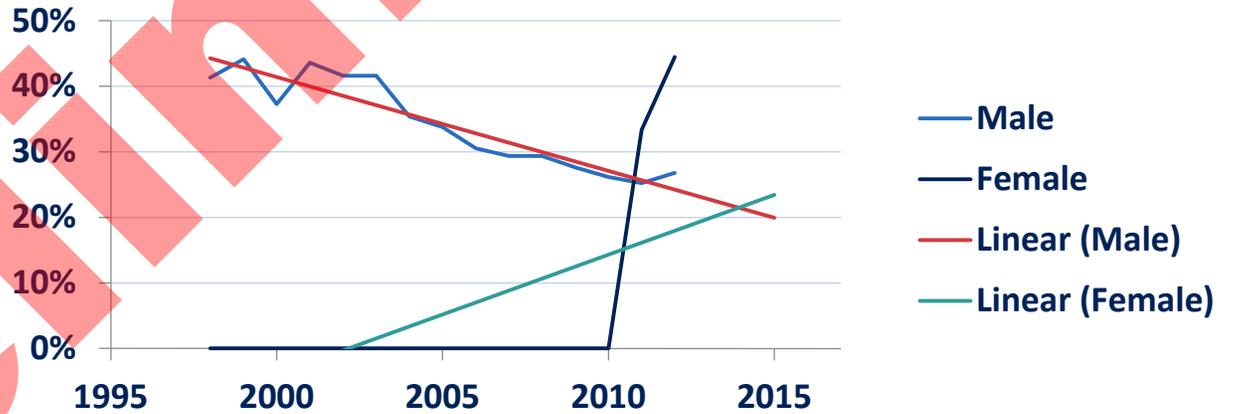


The next charts show the proportionate percent of WSPRS 1 members who have military service and at least 25 years of membership service.

WSPRS 1 - Year-to-Year Average Percentage of Members with Military Service and at least 25 Years of Service



WSPRS 1 - Three-Year Rolling Average Percentage of Members with Military Service and at least 25 Years of Service



General Methodology

We considered and did not adopt the same alternatives as we considered for PERS 1. Please see the **PERS 1 – Methods and Format of Assumptions** section above for more information

Best Estimate Military Service Factors

The following table shows both the new and old non-interruptive military service credit assumptions for PERS 1 and WSPRS 1.

Military Service Credit Load				
	Old Assumptions		New Assumptions	
	Male	Female	Male	Female
PERS 1	2.50%	0.10%	1.50%	0.10%
WSPRS 1	3.70%	0.10%	3.00%	1.00%