



## Executive Summary

**Preliminary**

The Office of the State Actuary (OSA) prepared this actuarial experience study on the Washington State retirement plans as required under the Revised Code of Washington (RCW) 41.45.090. This experience study covers the period 2007 through 2012 and includes an analysis of all demographic assumptions used to develop contribution rates, administrative factors, and estimated fiscal costs (fiscal notes) associated with the retirement plans.

## Intended Use

The primary purpose of this experience study is to compare the current demographic assumptions to the actual experience of the plans to determine if any adjustments are required to ensure our assumptions remain reasonable. Readers should not use this study for other purposes. We also advise readers of this study to seek professional guidance as to its content and interpretation and not to rely upon this communication without such guidance. Distribution of or reliance on only parts of this study could result in its misuse and may mislead others.

This analysis will become outdated with the release of our next experience study report. Please replace this report with our next report when available.

## Our Approach

We gathered sufficient data, made assumptions where necessary, and established study methods for each assumption to evaluate how well our current demographic assumptions compare to past actual experience. We also reviewed whether different assumption formats (i.e., assumptions by gender, age, or years of service, etc.) would provide a better fit to past experience than the current formats. Lastly, we made expectations for the future and applied our professional judgment to update our current assumptions where necessary.

Please see the **Development of Demographic Assumptions** section for additional information.

## Fiscal Impact

Actuaries use demographic and economic assumptions to estimate the cost of future plan benefits, which determines the timing and amount of plan contributions. Actual benefit payments plus expenses paid, less returns on invested contributions determine the actual cost of benefits.

Furthermore, we will review all demographic assumptions again within six years and likely make further updates at that time. Therefore, any assumption changes from this experience study impact short-term financing costs only.

Please see the [2013 Actuarial Valuation Report](#) for the impact on plan liabilities and contribution rates resulting from this experience study.

## Economic Assumptions

We review the economic assumptions for the plans every two years as part of the contribution rate-setting process under RCW 41.45.030. The current economic assumptions, prescribed by the Legislature, follow:

◆ Inflation	3.00 percent.
◆ General salary growth	3.75 percent.
◆ Annual investment return	7.80 percent (7.50 percent in LEOFF 2).
◆ Growth in system membership	0.95 percent (0.80 percent in TRS, 1.25 percent in LEOFF2).

We also reviewed the general salary growth assumption calculated in the [2013 Economic Experience Study](#) and found it was still reasonable for use here.

## Demographic Assumptions

The following information summarizes the results for the major categories of demographic assumptions that comprise this report. Please see the **Development of Demographic Assumptions** section for additional information.

### Mortality Rates

Our experience data continues to show improvements in mortality (i.e. members living longer) since the last study. Our experience indicates that the use of a different projection scale would be prudent; specifically 100 percent of Scale BB. Scale BB is a table

of annual mortality improvement rates published by the Society of Actuaries (SOA).

We also recommend the continued use of age offsets (shifts to the underlying RP-2000 table) to further refine our expected rates within our experience data.

Our latest experience supports the continued use of the RP-2000 Combined Healthy Mortality table for our healthy populations with appropriate age adjustments. We also recommend continued use of the RP-2000 "Disabled" table (also published by the SOA) for our disabled members in each plan except LEOFF 1.

Use of the new Scale BB increases the expected short-term cost of the plans, and increases the contribution rates required to fund those costs.

### Retirement Rates

Our experience data shows that members are continuing to defer retirement. As a result, we lowered existing retirement rate assumptions (as developed in the prior study) toward the level of actual retirements.

Reducing the retirement rates decreases the expected short-term cost of the plans and decreases the contribution rates required to fund those costs.

### Termination Rates

Our experience data shows that our current termination rates (as developed in the prior study) are still reasonable to use for early service years. The majority of terminations occur in early service years so the early service termination assumptions have the largest impact on plan costs.

We also observed higher-than-expected termination rates for Plans 2/3 members with 20 to 30 years of service. These higher-than-expected termination rates were most noticeable in Plan 3 for the Public Employees' Retirement System (PERS), the Teachers' Retirement System (TRS), and the School Employees' Retirement System (SERS).

We made only modest increases to the termination rates in the later service years. Generally, increasing the termination rates decreases the expected short-term cost of the plans and decreases the contribution rates required to fund these lower expected short-term costs.

### **Disability Rates**

Our experience data shows that the current disability assumptions provide a good fit to the experience of the plans. The recommended changes to the disability assumptions create a minimal impact on contribution rates.

### **Service-Based Salary Increases**

To estimate future salaries, we model two types of salary growth — general salary increases and service-based salary increases. General salary increases fall under the economic assumption category, and service-based salary increases fall under the demographic assumption category. The purpose of this experience study is to analyze the demographic assumptions. However, during our analysis of past salary growth, we reviewed the general salary growth assumption (as calculated in the [2013 Economic Experience Study](#)) and found it is still reasonable for use here.

Our experience data shows lower-than-expected service-based salary for a member at the beginning of that member's career. However, we observed higher-than-expected salary near the end of

the scale for each system.

As a result, we made modest changes to the service-based salary rates. For most systems we lowered the assumption in the early years of membership service and increased it in later years. In some cases, the service based salary scale was extended to include later service years. Increasing the service based salary rates at the end of the member's career and extending the service based salary rates scale cost more in the short term than the short-term savings from lowering the member's early service based salary rates which increased the contribution rates.

### **Miscellaneous Assumptions**

In addition to the major demographic assumptions described earlier, we use several other demographic assumptions in our actuarial valuation model to estimate the costs of the plans. We include each miscellaneous assumption, and its analysis, in this report. Overall, we recommend general updates, where appropriate, and each update has a very small impact on the expected short-term costs and contribution requirements of the plans. The total impact for all miscellaneous assumptions results in lower expected short-term costs and lower contribution rates for each plan.