



ONE

EXECUTIVE SUMMARY



ONE: EXECUTIVE SUMMARY

The Office of the State Actuary (OSA) prepared this actuarial experience study on the Washington State retirement plans as required under the (RCW) [41.45.090](#). This experience study covers plan experience through 2018 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 plans¹. The study does not consider impacts to demographic assumptions from the COVID-19 health crisis. These impacts may be relatively short-term in nature, and this study sets assumptions that are reasonable over a longer time frame, generally the next ten to twenty years. However, for all pension measurements that rely on these assumptions, we will consider if assumption adjustments are necessary to reflect potential COVID-19 impacts.

Intended Use

The primary purpose of this experience study is to determine if any adjustments are required to ensure our assumptions remain a reasonable estimate of future plan experience. This report also discloses the data and methods we used to compare and adjust the prior demographic assumptions. Readers should not use this study for other purposes. We also advise readers 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 be misleading.

This analysis will become outdated with the release of our next experience study report.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 data, made assumptions where necessary, and established study methods for each assumption to evaluate how well our current demographic assumptions compare to actual experience. Before using data to study an assumption, we considered the relevance of the data, the materiality of the assumption, and how much credible data was available to be studied. For certain assumptions, we combined data across similar systems and plans to improve credibility. For more information on credibility analysis please see the actuarial standard of practice on [Credibility Procedures](#). We also reviewed whether different assumption formats (i.e., assumptions by gender, age, or plan selection, etc.) would provide a better fit to past experience than the current formats. Lastly, we set expectations for the future and applied our professional judgment to update the assumptions where necessary. Please see the report 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. The actual cost of benefits is determined by actual benefit payments plus expenses paid, less returns on invested contributions.

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

¹This study does not include mortality experience specific to members who purchased additional lifetime annuities. Limited plan experience is available as this group is relatively small in size, however it is growing. We therefore may not collect sufficient, credible experience for another ten to twenty years. We expect to review this group in future experience studies and include analysis as plan experience grows.

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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	2.75 percent
General salary growth	3.50 percent
Annual investment return	7.50 percent (7.40 percent in LEOFF 2)
Growth in system membership	0.95 percent (1.25 percent in TRS)

The latest economic experience study is available on our [website](#). Except for the annual investment return assumption for all plans but LEOFF 2 and the TRS growth in system membership assumption, the currently prescribed assumptions match OSA’s recommended best estimate assumptions from our most recent study.

Demographic Assumptions

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

Disability Rates

In general, the new experience showed fewer disability retirements than expected under the prior assumptions. To reflect this experience, we lowered the disability rates for all plans.

We set gender-neutral disability rates for all systems after observing little difference in the rate of male and female disablement. While we observed non-public safety Plan 3 members select disabled retirement benefits at lower rates than Plan 2 members, we observed few disabled retirement benefit selections relative to total experience in each non-public safety plan. Therefore, we set Plan 2 and Plan 3 disability rates by combining experience across all non-public safety systems. We did not combine experience across public safety plans due to fundamental differences in disability benefit provisions.

Mortality Rates

In general, we observed improvements in mortality (i.e., members living longer), and updated our mortality base tables and mortality improvement assumptions with recently published mortality tables and improvement scales developed by the [Society of Actuaries \(SOA\)](#).

While we observed members living longer, our new mortality assumptions generally project a decrease in the average life expectancy from our prior assumptions. The exception is TRS, which saw an increase in the average member life expectancy.

We selected the Pub.H-2010 tables developed by SOA as our new base table mortality assumption. This includes separate tables developed for teachers, public safety, and general public employees. Released in January of 2019, these tables are the most recent publication from SOA on the mortality rates of public retirement plan participants at the time of this study. We also selected the long-term rates of the MP-2017 mortality improvement scale to project future improvements at a generally lower rate than previously assumed.

Further, we changed how we apply the mortality rates assumption. We now set and apply a different mortality assumption to members currently active, retired, or in beneficiary status. This change in methodology reflects evolving practice in this area.

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Retirement Rates

Our experience data shows that members are continuing to defer retirement since the Great Recession (2008-17). As a result, we lowered the prior retirement rate assumptions toward the level of actual retirements.

We observed similar retirement behavior between male and female members for all plans. We expect this behavior to continue in future years and set gender-neutral retirement rates for all plans. This was also the first study to provide sufficient experience to consider separate rates for Plan 2 and Plan 3. We confirmed that Plan 2 members exhibit different retirement behavior from Plan 3 members and set plan-specific retirement 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, while service-based salary increases fall under the demographic assumption category. This demographic experience study analyzes the demographic portion of our salary growth assumption – service-based salary increases.

In most systems, we observed service-based salary increases higher than our expectations. As a result, we increased the assumed rates of service-based salary increases at most service levels. The exception is LEOFF, which experienced similar service-based increases to that of our prior assumption. For this system, we only made minor adjustments to our prior assumption. We also examined the impact of recent legislation that increased the salaries of Washington teachers, school workers, and state patrol officers. In general, we raised the service-based salary increases assumption for these members.

Termination Rates

For most systems, we observed terminations that were higher than expected since the last experience study. Only the LEOFF system showed fewer terminations than expected.

Similar to retirement rates, we observed different termination behavior between members of Plan 2 and Plan 3. Given the amount of plan experience available in this study, we set separate termination rates for Plans 2 and 3 members. We set higher termination rates for Plan 3 than Plan 2 consistent with experience. We also observed not all members that leave employment while eligible for retirement would collect their retirement benefit immediately. Based on this data, we set a new termination assumption to assume some members will leave work and defer commencement of their retirement benefit.

Miscellaneous Assumptions

In addition to the major demographic assumptions described above, we use numerous 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 updates, where appropriate, and each update generally has a small impact on the plans.