School Employee ERFs (Preliminary Summary)

Issue

Recent legislation (Chapter 7, Laws of 2012, First Special Session) modified Early Retirement Factors (ERFs) for newly hired employees in the Public Employees' Retirement System (PERS), the Teachers' Retirement System (TRS), and the School Employees' Retirement System (SERS). It also required the Select Committee on Pension Policy (SCPP) to study two things:

- High-risk job classifications.
- Classroom Employee ERFs.

This report responds to the mandate to "study existing ERFs and job requirements that may limit the effectiveness of the older classroom employee." This version of the report discusses considerations around using pension policy to address classroom effectiveness. It will be updated as the study progresses to include additional information, conclusions, and findings.

Policy Questions

This issue raises the following questions:

- Should ERFs for classroom employees be adjusted to facilitate the retirement of classroom employees whose effectiveness is diminished?
- If so, how should they be adjusted, and for which employees?

Policy Highlights

- The new ERFs reduce the early retirement benefits available for new hires. This likely reduces the incentive for classroom employees to retire earlier, and may result in members working longer.
- Working longer may or may not negatively impact effectiveness.
- Classroom effectiveness is subjective, and difficult to define.
    - Washington State has a new teacher and principal evaluation system that is currently being phased in that will include a definition of effective teaching.
- There may be several options for addressing classroom effectiveness inside and outside the pension system

- ◊ Pension policy can address factors related to age or length of service.

- State policy is to provide consistent benefits, unless unique job requirements warrant different benefits.
  - ◊ Teachers and school employees have their own systems, but the plan provisions are very similar to those for general public employees.

Committee Activity

The SCPP was briefed on the passage of the bill and the bill's main provisions at the meeting on May 15, 2012.

Staff presented the study preliminary plan and study approach at the meeting on June 27, 2012.

Next Steps

Committee staff will continue reviewing studies on teacher retirement and classroom effectiveness. Staff will also continue to seek new information and welcome guidance from the committee.

At the September 18, 2012, meeting, staff will present results and/or findings regarding factors that may impact classroom effectiveness. Staff will also present preliminary options.

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School Employee ERFs (Preliminary Issue Paper)

In Brief

Issue

Should ERFs for classroom employees be adjusted to facilitate the retirement of classroom employees whose effectiveness is diminished? If so, how, and for who?

Member Impact

The study mandate is geared toward members of TRS Plans 2/3. However, it may also impact members of SERS Plans 2/3, depending on how the process develops.

As of the preliminary 2011 valuation, there are 62,463 active members of TRS Plans 2/3, and 52,332 active members in SERS Plans 2/3.

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In 2012 the Legislature passed 2ESB 6378 (Chapter 7, Laws of 2012, First Special Session). Among other provisions, this bill modified Early Retirement Factors (ERFs) for newly hired employees in the Public Employees' Retirement System (PERS), the Teachers' Retirement System (TRS), and the School Employees' Retirement System (SERS). It also required the Select Committee on Pension Policy (SCPP) to study two things:[1]

- High-risk job classifications.
- Classroom Employee ERFs.

This report addresses classroom employee ERFs. The study of high-risk job classifications is contained in a separate report.

Specifically, this report responds to the mandate to "study existing ERFs and job requirements that may limit the effectiveness of the older classroom employee."

This version of the report discusses considerations around using pension policy to address classroom effectiveness. It will be updated as the study progresses to include additional information, conclusions, and findings.

Issues

For the purpose of this report, the issues have been defined as follows.

- Should ERFs for classroom employees be adjusted to facilitate the retirement of classroom employees whose effectiveness is diminished?
- If so, how should they be adjusted, and for which employees?

For the purpose of this study, we have assumed that "classroom employee" means "classroom teacher", as defined in RCW 28A.150.203(7). Specifically, this includes certificated professionals working in a position that requires the certification and whose primary duty is daily educational instruction of students.

[1] *Please see Attachment A for a copy of the study language.*

Thus, the study will be largely geared toward members of TRS Plans 2/3, but with some discussion of members of SERS Plans 2/3.[2]

Background

Plan Membership

The following information provides a very high level description of TRS and SERS plan membership to help frame the study. For complete details on plan membership and other provisions, please see the DRS Handbooks or the relevant statutes, RCW 41.32 and RCW 41.35.

TRS membership is limited to employees who provide classroom instruction at a school or Educational Service District (ESD). While teachers are the most obvious members, TRS membership also includes others who are serving, or have served, in an instructional capacity. This includes, for example, school principals, some administrators, and doctors hired to provide classroom instruction.

SERS membership covers classified employees in schools and ESDs. This generally includes positions such as administrative staff, custodial staff, and bus drivers.

Early Retirement Generally

At the highest level, employees can leave employment at any time, and may do so for a variety of reasons ranging from retirement to pursuit of a new career. If vested, those employees are eligible to receive benefits upon retirement. However, a vested employee who leaves earlier than the minimum retirement age for their retirement plan may not file for retirement (and start receiving benefits) until they reach that minimum age.

Early retirement benefits provide members the option to receive benefits at earlier ages in exchange for a reduction in benefits.

Early retirement provides members the option to start receiving benefits at earlier ages in exchange for a reduction in benefits.

The normal retirement age for Plans 2/3 members is age 65. Early retirement benefits are available to members who have attained age 55 and meet the minimum service requirements of twenty years in Plan 2 or ten years in Plan 3. Under early retirement, pensions are actuarially reduced for each year the member retires prior to reaching age 65.

[2] *TRS 1 and PERS 1/2/3 are excluded for two reasons: First, PERS 1 and TRS 1 do not have ERFs, and are closed to new members. Second, while there are some PERS members who began working in schools before the creation of SERS, the proportion is small and shrinking.*

This reduction to a member's retirement benefits is intended to compensate for the increased cost to the retirement system. This cost arises for two reasons: First, because a person retiring early will be receiving benefits for a longer time. Second, because the member is paying fewer contributions (along with the state/employer portions) than were expected based on the normal retirement age.

Early Retirement Factors

Alternate early retirement benefits are available to Plans 2/3 members who have reached age 55 and have at least thirty years of service credit.

Alternate early retirement is considered a subsidized form of early retirement because benefits are not actuarially reduced. Members who retire early under these alternate early retirement provisions still have their benefits reduced, but not as much as if they'd retired with a full actuarial reduction.

Employees hired on or after May 1, 2013, will be eligible for ERFs of 5 percent for each year prior to age 65.

There are three sets of ERFs: 2012 ERFs, the 2008 ERFs, and the 2000 ERFs.

- **2012 ERFs –** The 2012 ERFs were established in 2ESB 6378, and only apply to new PERS Plans 2/3, TRS Plans 2/3, and SERS 2/3 members hired on or after May 1, 2013. The reduction is 5 percent for each year the member retires prior to reaching normal retirement (age 65).

Employees hired before May 1, 2013, may choose to retire under either the 2000 ERFs, or 2008 ERFs, as follows.

- **2000 ERFs –** Eligible members may retire and receive a pension reduced by 3 percent for each year the member retires prior to attaining age 65. Members retiring under this provision may return to work in an eligible position for a covered public employer prior to age 65 and, subject to certain restrictions, still receive their full pension.
- **2008 ERFs –** Eligible members may retire with unreduced pensions beginning at age 62. Members retiring between ages 55 and 62 have their pension reduced by a specified percentage that is less than the reduction provided under the 2000 ERFs. Members retiring under this provision are generally prohibited from receiving their full pension if they return to work in any capacity for a covered public employer before they reach age 65.

Early retirement benefits are reduced more under the 2012 ERFs than under prior ERFs, but less than a full actuarial reduction.

Early Retirement Reduction Factors				
Age	Full Actuarial Reduction	2000 ERFs	2008 ERFs	2012 ERFs*
55	0.358	0.70	0.80	0.50
56	0.395	0.73	0.83	0.55
57	0.435	0.76	0.86	0.60
58	0.481	0.79	0.89	0.65
59	0.531	0.82	0.92	0.70
60	0.588	0.85	0.95	0.75
61	0.652	0.88	0.98	0.80
62	0.724	0.91	1.00	0.85
63	0.805	0.94	1.00	0.90
64	0.896	0.97	1.00	0.95
65	1.00	1.00	1.00	1.00

**Applied for members hired on or after May 1, 2013, with at least 30 years of service.*

Hypothetical Examples

Retirement system members who retire early under the 2012 ERFs will receive lower benefits than they would have under the 2000 or 2008 ERFs. However, these members will still receive better benefits than they would under a full actuarial reduction (with no ERF applied).

To illustrate, a hypothetical Plan 2 member who retires with thirty years of service and an Average Final Compensation (AFC) of $50,000 would receive the following.

	Full Actuarial Reduction*	2000 ERFs	2008 ERFs	2012 ERFs (New Hires)
Age 55				
ERF	0.358	0.70	0.80	0.50
Reduction	64.2%	30%	20%	50%
Initial Annual Benefit	$10,740	$21,000	$24,000	$15,000
Age 60				
ERF	0.588	0.85	0.95	0.75
Reduction	41.2%	15%	5%	25%
Initial Annual Benefit	$17,640	$25,500	$28,500	$22,500
Age 62				
ERF	0.724	0.91	1.00	0.85
Reduction	27.6%	9%	0%	15%
Initial Annual Benefit	$21,720	$27,300	$30,000	$25,500

**The full actuarial reduction shown here is hypothetical, and provided for illustration and comparison only. A Plans 2/3 member with 30 years of service would qualify for one or more of the ERFs.*

Policy Analysis

As noted above, the study mandate requires the SCPP to study ERFs in the context of the effectiveness of older classroom employees. To determine if ERFs should be adjusted to facilitate the retirement of classroom employees with diminished effectiveness, policy makers may wish to consider the following.

First, is classroom effectiveness an issue that should be addressed by pension policy? To determine this, policy makers may wish to consider:

- Factors that may impact classroom effectiveness.
- Factors that can be addressed by pension policy.
- Current provisions that may address factors related to effectiveness.

Second, if policy makers conclude that classroom effectiveness is a problem, there may be multiple options for addressing effectiveness that are available for consideration. In evaluating any option, policy makers may want to consider the following.

- Who should receive the adjustments?
- How should provisions be adjusted?
- How will the changes impact affordability and sustainability of the pension system?

Since the study mandate anticipates that ERFs may be adjusted to address classroom effectiveness, this option will be addressed below. However, additional options are likely to be identified and analyzed as the study progresses.

Factors That May Impact Classroom Effectiveness

Classroom effectiveness is a subjective term, and difficult to define. Further, defining this term is not necessary to fulfill the study mandate, and is outside the expertise of staff. Thus, staff is currently reviewing existing studies of teacher retirement and classroom effectiveness for information. As the study progresses, staff will include conclusions and findings, based on that research.

Some job requirements, or factors, have already been identified in studies and in stakeholder testimony that may have an impact on a teacher's classroom effectiveness.

Thus far, the identified factors range from class size and security, to health issues and retirement plan design.

Classroom effectiveness is a subjective term, and difficult to define. However, a new teacher evaluation system is being phased in for Washington. Data from the system may be useful in determining classroom effectiveness.

Since the study mandate is focused on retirement plan provisions (i.e. whether ERFs should be modified), this report discusses considerations around using pension policy to address classroom effectiveness.

Other identified factors will be discussed in future versions of the issue paper as the study progresses.

Washington Is Developing A New Evaluation System

Washington State has a new teacher and principal evaluation system that is currently in the pilot stages. This process will culminate with all school districts adopting new evaluation systems for the 2013-14 school year. ESSB 5895 (2012) requires that all teachers and principals be transitioned to the new evaluation system by the 2015-16 school year. A detailed report, The Teacher/Principal Evaluation Pilot, is available on the Office of the Superintendent of Public Instruction's (OSPI) website. There is also a website dedicated to the pilot program.

In brief, E2SSB 6696 (2010) required OSPI to collaborate with stakeholder organizations to develop new evaluation models for classroom teachers and principals. ESSB 5895 (2012) requires OSPI to prescribe a common method for calculating the evaluation performance rating for each of the preferred instructional frameworks and leadership frameworks.

The new evaluation system is still being phased-in. However, enacting legislation requires that the new system use criteria developed by organizational stakeholder groups to define effective teaching and leading. As such, policy makers may wish to wait until data from the new evaluation system has been processed before proceeding further.

Some pension provisions may encourage teachers to continue teaching despite diminished effectiveness.

Factors That Can Be Addressed By Pension Policy

Pension policy may be better-suited to address some factors than others. For example, pension provisions may be better suited to addressing age and length-of-service than factors like class size.

For example, pension provisions that are tied to retirement age and length of service (such as eligibility and ERFs) may have an indirect impact on classroom effectiveness by influencing the decision to retire.

In other words, it is not likely that a pension provision will directly cause a teacher to be effective or ineffective. However, the ability to

begin receiving retirement benefits (along with the level of those benefits) may impact the member's decision to retire.

Thus, if classroom effectiveness is found to be tied to age-related factors, then the plan design or provisions may be encouraging teachers to work longer, despite a diminished effectiveness. Some possible examples include when a member feels compelled to work longer:

- To reach normal retirement age, or early retirement eligibility.
- To avoid early retirement benefit reductions.

However, if classroom effectiveness is not directly tied to age-related issues, or is only connected on a case-by-case basis, then it is also possible that plan provisions are encouraging effective and experienced teachers to retire earlier. One possible example would be when a member feels compelled to retire after reaching a point where the member's benefits are at their peak (either literally or practically).

The New ERFs Likely Reduce The Incentive For Classroom Employees To Retire Earlier

The ability to leave employment and receive pension benefits earlier than normal is itself an incentive to retire earlier. Ignoring other factors, the more pension benefits are reduced, the less incentive to retire early.

Since the new ERFs increase the reduction (i.e. lower the early retiree's take-home pay), they reduce the incentive to retire earlier than age 65. However, it remains to be determined whether or not that change in the early retirement incentive is big enough to create a material change in behavior.

Since the 2012 ERFs only affect newly-hired employees who earn thirty years or service, experience data will not be available for at least thirty years.

Due to a lack of data, it is not possible to determine with certainty whether or not the ERF changes will bring a material change to retirement behavior. Further, experience data will not be available until employees hired on or after May 1, 2013, have earned thirty years of service credit.

For the purpose of pricing the bill, the actuarial fiscal note for 2ESB 6378 prepared by the Office of the State Actuary (OSA) assumed that the bill would cause a material change in retirement behavior. Specifically, OSA assumed that the bill would result in new hires retiring later than they would have if the prior ERFs (2000 and 2008) were available to them. For more information, please see page 21 of the actuarial fiscal note, provided as **Attachment B** of this report.

However, ERFs are not the only factors members might consider when deciding whether or not to retire early. Members might also consider any of the following:

ERFs are not the only consideration for an employee considering early retirement.

- Personal assessment of classroom effectiveness and desire to continue working (i.e. feeling "burned out").
- Physical factors (i.e. people age differently, and experience different illnesses and injuries).
- Other work opportunities, such as a new career or a job with a different workload.
- Finances and/or debt (i.e. ability to trade full paycheck for retirement benefits).
- Ability to increase pension benefits, such as an upcoming raise or additional year of service.

Current Provisions That May Address Factors Related To Effectiveness

There are several options built into current rules that allow teachers to take a temporary break to allow for added variety, training, or rest.

Current law already addresses some factors related to age and length of service to some extent. However, policy makers may disagree on whether current provisions are sufficient to address effectiveness. Current provisions include:

- Deferred Retirement.
  - Teachers may leave service at any time they choose and wait to file for retirement. If they do not apply for retirement until the normal retirement age, there is no reduction in their benefits.
    - TRS 2 allows for a full deferment. In other words, the member will not receive any pension checks until filing for retirement.
    - TRS 3 allows a member to defer the DB portion, while taking the DC portion immediately.[3]
  - However, Plans 2 members are not eligible for PEBB if they do not retire immediately after leaving service.
- 180-Day Contract.
  - Teachers work on a 180-day contract, and receive summers off from work.
- In-Service Days.

[3] *For distribution options, please see RCW 41.34.070.*

- ◊ Provides time for training and curriculum development away from students.
- Sabbaticals and Teachers on Special Assignment (TOSA).
  - ◊ Rules for sabbaticals and TOSAs are set by the individual district or ESD.

There May Be Multiple Options For Addressing Effectiveness

If policy makers conclude that effectiveness is an issue, and that current provisions are not sufficient, then there may be multiple options available for consideration.

In evaluating any option for adjusting pension provisions, policy makers may wish to consider who should receive the adjustments, what the adjustments should be, and what the fiscal impact will be.

The study mandate specifically mentions the adjustment of ERFs as a possible option, and a preliminary analysis of that option is provided here. However, as this study proceeds it will likely identify and analyze other options, inside and/or outside the pension system, for addressing classroom effectiveness.

State policy is to provide consistent benefits unless unique job conditions suggest otherwise. If policy makers conclude provisions should be changed, should they be changed for teachers only, or all school employees?

Who Should Receive The Adjustments?

As noted, if policy makers conclude that effectiveness is an issue, and that some adjustment to plan provisions should be made, policy makers may wish to consider who should receive those adjustments. Specifically, the adjustments could be provided to either of the following:

- Teachers.
- All school employees.

As a general policy, the state provides consistent benefits to all employees unless differences are needed to address unique job requirements, conditions, or other factors.[4] Teachers and other school employees each have their own retirement systems. However, only some plan provisions in those systems are unique. For example, the early retirement and ERF provisions for TRS Plans 2/3 and SERS Plans 2/3 are identical to PERS Plans 2/3.

However, the study mandate refers to the term "classroom employee." As noted above, this is assumed to mean classroom teachers. Thus, one option would be to limit any pension policy changes to teachers. This option may be appropriate if policy makers

[4] *RCW 41.50.005.*

feel there are aspects of the actual classroom environment that are sufficiently different from classified employee positions (such as bus drivers and custodians) as to warrant benefit adjustments that are not provided to other school employees.

Other policy makers may feel that working in education is itself sufficiently different from other state employment as to warrant different benefits. Thus, a second option would be to limit any pension policy changes to teachers and other school employees. For example, it could be argued that any state employee can suffer from diminished effectiveness. However, when the effectiveness of a school employee is diminished, the effect is to basic education. The Washington State Constitution (see Article IX) places a priority on basic education, and some may feel that this priority warrants benefit adjustments for school employees that are not applied to other state employees.

The study mandate anticipates the possibility that ERFs should be adjusted to address classroom effectiveness. If so, there are essentially two options: Roll back the new ERFs to prior levels, or create a new schedule of ERFs.

History shows that once a benefit is granted to one group of public employees, others who do not receive that benefit will want it, and likely pursue it. Thus it is likely that any employee groups not chosen to receive this benefit will pursue it at a later date.

How Should Provisions Be Adjusted?

If policy makers conclude that effectiveness is an issue, and that the new ERFs should be adjusted, at the highest level there are essentially only two possibilities:

- "Roll back" the new ERFs to earlier levels.
- Other New ERFs.

As noted above, the study mandate specifically mentions the adjustment of ERFs as a possible option. However, as this study proceeds it may identify other options, both inside and outside the pension system, for addressing classroom effectiveness.

How Will The Changes Impact Affordability And Sustainability Of The Pension System?

The 2012 ERFs were created during a time of pension reform and budget crisis. Policy makers may want to consider the fiscal impact of any changes to ERFs or other retirement provisions.

While 2ESB 6378 did not possess an intent section, the new ERFs were enacted during a time of pension reform in response to a budget crisis, and resulted in a savings to the system. In recent years, the Legislature has considered and passed several measures that address the long-term sustainability of the retirement systems. For example, in 2011 the Legislature enacted SHB 2021, which eliminated certain cost-of-living adjustments.

Generally, any reduction to the ERFs (i.e. higher take-home pay for early retirees) will carry a cost to the system. The actual magnitude of the cost will depend on how those ERFs are restructured and who receives those adjustments.

Policy makers may want to consider the overall fiscal impact of any change to retirement provisions on state budgeting and the retirement systems. Also, changes to the retirement system are typically long-term and may create contractual rights. As such, additional study and actuarial pricing may also be appropriate before proceeding.

Other States

None of Washington's peer states explicitly tie early retirement factors to classroom effectiveness.

Thus far, staff has found no indication that ERFs in other states are tied to a qualitative measure such as classroom effectiveness.

It may not be possible to determine board or legislative motivation for selecting the reduction factors used in each of these states. However, staff has thus far found no evidence in research to suggest that the early retirement factors are tied to any qualitative measure.

Of Washington's peer states, only three of the ten have a separate retirement system open to new teachers. Of those with separate systems, the early retirement factors consist of one of three options:

- Full actuarial reduction.
- A table of reduction factors describing the factor for each level of age and/or service.
- A consistent percentage multiplied by the time remaining before the retiree reaches the normal retirement age.

Depending on age and service credit, the reductions for early retirement vary from zero to 6 percent.

Please see the Appendix for additional details on early retirement provisions in other states.

Conclusion

The new ERFs created by 2ESB 6378 reduce the incentive to retire before age 65. It will take at least thirty years to determine with any certainty whether or not this incentive is strong enough to change retirement behavior. If employees are working longer due to this reduced incentive, then it is possible they may be working with diminished effectiveness.

"Classroom effectiveness" is a subjective term, and there is no consensus definition. Committee staff are still reviewing studies in this area, but have already identified several factors that might impact classroom effectiveness. In Washington, a new teacher and principal evaluation system is in the pilot stages, and when complete will assist in measuring teacher effectiveness. Some policy makers may wish to wait until data from the new evaluation system has been processed before proceeding further

If policy makers feel that age and length-of-service factors are impacting classroom effectiveness, there are provisions that may mitigate that impact in current law. If policy makers conclude that current provisions are not sufficient and that ERFs should be adjusted to address diminished effectiveness, they may wish to roll back the ERFs to prior levels, or create an entirely new schedule.

Appendix

- Other States.

Attachments

- Study Mandate.
- Actuarial Fiscal Note for 2ESB 6378 (2012 c 7).

Appendix

Other States

Early retirement provisions for teachers in Washington's peer states vary in structure and complexity. The following represents highly-summarized retirement provisions for newly hired teachers, or for general public employees (non-public safety) if appropriate.

Please note that not all states have separate retirement systems for teachers, some plans have closed, and many provisions have changed in recent years creating different benefits for employees based hire date. Some options (such as supplemental investment options) may not be listed here. Please refer to the appropriate state retirement system for complete details and information.

Oregon

Oregon does not have a separate plan for newly-hired teachers. Normal retirement for teachers is at age 65, or age 58 with thirty years of service. Early retirement with no reduction is available at age 55 with thirty years of service.

Idaho

Idaho does not have a separate plan for newly hired teachers. Normal retirement for teachers is at age 65 with at least sixty months of service, with a possible "late increase" at age 70. Early retirement with full actuarial reduction is available at age 55 with at least sixty months of service. Unreduced early retirement is available subject to the Rule of 90 (where age and service equals 90).

California

Newly hired teachers are part of the CALSTRS. Normal retirement is available at age 60 with five years of service. Multiple early retirement options are available:

- Alternative A -- "Standard Early Retirement."
  - Available at age 55 with five years of service.
  - Benefits are reduced 0.01 percent for each month under age 60.
- Alternative B -- "30 and Out."
  - Available for those who retire from age 50-55 with 30 years of service credit.

- ◊ Benefits are reduced 0.01 percent for each month under age 60, and.
- ◊ Benefits are reduced additional 0.005 percent for each month under age 55.

❖ Alternative C -- "Early Retirement Limited Term Reduction Plan."

- ◊ Available from age 55-60 with five years of service.
- ◊ Benefits are temporarily reduced as follows: First, benefits are calculated as if the member retired at 60, but the member receives only half the amount. This one-half allowance continues until the total amount paid **after** the retiree reaches age 60 is equal to the amount paid **prior** to age 60. When that point is reached the retiree's monthly allowance will be increased to the original calculated benefit amount.

Colorado

Colorado does not have a separate plan for newly-hired teachers.[5] There are three options for normal retirement:

1. Age 65 with five years of service.
2. Age 58 with thirty years of service.
3. Any age with thirty-five years of service.

Early retirement with a full actuarial reduction is available at three points:

1. Age 50 with twenty-five years of service.
2. Age 55 with twenty years of service.
3. Age 60 with five years of service.

Florida

Florida does not have a separate plan for newly hired teachers. Normal retirement for teachers is available at age 65 with eight years of service, or at any age with thirty-three years of service.

[5] *The Denver Public School (DPS) system was recently merged into CO Public Employees Retirement Association (PERA). According to PERA customer service, all other teachers in CO are members of PERA. Normal retirement options for DPS teachers differ from teachers in the PERA. For clarity, only the PERA rules are provided here.*

Early retirement is available at any age with eight years of service. Benefits will be reduced five percent for each year below normal retirement age.

Iowa

Iowa does not have a separate plan for newly hired teachers. There are three options for normal retirement:

1. Age 65.
2. Age 62 with twenty years of service.
3. Rule of 88 (where age and service must exceed 88).

Early retirement is available with a reduction based on when the service was earned. For service through June 30, 2012, the reduction is 3.00 percent for each year (or 0.25 percent for each month) prior to the closest normal retirement age. For service earned starting July 1, 2012, the reduction increases to 6 percent times the number of years (or 0.50 percent times the number of months) prior to age 65.

Minnesota

Newly hired teachers are members of the Teachers' Retirement Association (TRA). Normal retirement for teachers is available the year the member is eligible for full Social Security benefits (not to exceed age 66).

Early retirement is available from age 55, with a 4-6 percent reduction for each year prior to normal retirement age.

Missouri

Missouri does not have a separate plan for newly-hired teachers. There are three options for normal retirement:

1. Age 60 with five years of service.
2. Any age with thirty years of service.
3. Rule of 80 (where age and service equals 80).

Early retirement is available at age 55 with five years of service, or at any age with twenty-five years of service. Both early retirement options have unique reduction factors. Tables showing the reductions are available on the website of Missouri's Public Education Employee Retirement System (PEERS): psrsmo.org/PEERS/Age-Reduced_Calculation.

Ohio

Newly hired teachers are members of STRSOH. Ohio offers three plans for teachers: DB, DC, and Combined (hybrid plan similar to Plans 3 in Washington).

Defined Benefit

Normal retirement is available at age 65 with thirty years of service. Early retirement is available at the following points:

- Any age with thirty years of service.
- Age 55 with twenty-five years of service.
- Age 60 with five years of service.

Benefits will be reduced using a schedule available on the STRSOH website: strsoh.org/active/2d02

Defined Contribution

Normal retirement is available at the latter of the following:

- The month in which the member reaches age 50;
- The last day of the member's actual employment in an STRS Ohio-covered position; or
- The month the member applies.

Combined

Normal retirement is available at different points for the DB and DC portions.

Wisconsin

Wisconsin does not have a separate plan for newly hired teachers. Normal retirement is available at age 65. Early retirement is available at age 55, with a reduction of 0.4 percent per month between ages 55 and 57. Between age 57 and normal retirement age the 0.4 percent is reduced by 0.00001111 percent for each month of creditable service.

Attachment A

NEW SECTION. **Sec. 8.** The select committee on pension policy, with the assistance of the department of labor and industries, shall study the issue of risk classifications of employees in the Washington state retirement systems that entail either high degrees of physical or psychological risk to the members' own safety or unusually high physical requirements that result in elevated risks of injury or disablement for older employees. The select committee on pension policy, with the assistance of the office of the superintendent of public instruction, shall also study existing early retirement factors and job requirements that may limit the effectiveness of the older classroom employee. The study shall identify groups and evaluate them for inclusion in the public safety employees' retirement system or the creation of other early retirement factors in the teachers' or school employees' retirement systems. The select committee on pension policy shall report the findings and recommendations of its study to the legislative fiscal committees by no later than December 15, 2012.

Passed by the Senate April 10, 2012.
Passed by the House April 10, 2012.
Approved by the Governor May 2, 2012.
Filed in Office of Secretary of State May 2, 2012.

p. 17 2ESB 6378.SL

SUMMARY OF RESULTS

This bill reduces subsidized early retirement benefits for newly hired members in Plans 2/3 of PERS, TRS, and SERS retirement systems, lowers the prescribed rate-of-return assumptions used in determining contribution requirements, and requires the SCPP to perform a pension study.

Impact on Contribution Rates (Effective 7/1/2012)*						
Fiscal Year 2013 State Budget	**PERS**	**TRS**	**SERS**	**PSERS**	**LEOFF**	**WSPRS**
Employee (Plan 2) / Total Employer	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**

**Please see the remainder of this fiscal note for contribution rate impacts beyond July 1, 2012.*

Budget Impacts			
(Dollars in Millions)	**Fiscal Year 2013**	**2013-2015**	**25-Year**
General Fund-State	$0.0	($4.4)	($180.7)
Local Government	$0.0	($4.1)	($173.8)
Total Employer	$0.0	($9.6)	($382.5)

Note: We use long-term assumptions to produce our short-term budget impacts. Therefore, our short-term budget impacts will likely vary from estimates produced from other short-term budget models.

HIGHLIGHTS OF ACTUARIAL ANALYSIS

We expect the reduction of subsidized early retirement benefits for new hires in PERS, TRS, and SERS Plans 2/3 to decrease employer costs and Plan 2 contribution rates. For this Plans 2/3 provision alone, we expect a 25-year total employer savings of over $1.6 billion.

The lower rate-of-return assumptions will not change actual benefits paid or the actual rate of return the plans experience, but will change the timing of future contributions and dollar amount of future investment returns. As a result, we expect the lower rate-of-return assumptions to temporarily increase contribution requirements resulting in higher employer costs and Plan 2 contribution rates over the next 25 years. For this provision alone, we expect a 25-year total employer cost of over $1.2 billion. We expect a 50-year total employer savings of approximately $4 billion from the additional prefunding that occurs during the next 25 years.

When we consider both provisions together, we expect a total employer savings of $382.5 million over the next 25 years. We expect the change in subsidized early retirement benefits will change future retirement behavior, but found the expected cost of this provision does not change that much when we assume different retirement behavior.

We found overall affordability remained unchanged and risk improved as measured under the Pension Score Card. However, we expect long-term affordability and Plan 2 contribution rates for current members to improve over the lifetime of the plans. Please see the Risk Analysis section and Appendix B for more detailed information.

See the remainder of this fiscal note for additional details on the summary and highlights presented here.

WHAT IS THE PROPOSED CHANGE?

Summary Of Change

This bill impacts the following systems by changing the prescribed Rate-of-Return (ROR) assumptions for determining contribution rate requirements:

- Public Employees' Retirement System (PERS).
- Teachers' Retirement System (TRS).
- School Employees' Retirement System (SERS).
- Public Safety Employees' Retirement System (PSERS).
- Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF) Plan 1.
- Washington State Patrol Retirement System (WSPRS).

ROR assumptions are set as follows:

- 7.9 percent, beginning July 1, 2013.
- 7.8 percent, beginning July 1, 2015.
- 7.7 percent, beginning July 1, 2017.

This bill also changes benefits for members in Plans 2/3 of PERS, TRS, and SERS retirement systems by removing existing options for subsidized early retirement for members newly hired on or after May 1, 2013, and replacing these options with a new option. Specifically, it removes the 2000 and 2008 Early Retirement Factors (ERFs), and replaces them with a 5 percent reduction for each year of early retirement prior to age 65. To be eligible for the 5 percent ERF, you must be age 55 or older, and have at least 30 years of service.

The bill requires the State Actuary, in 2017, to submit information regarding the experience and financial condition of each state retirement system three months earlier than under current law (see RCW 41.45.030). This change does not affect the pricing of the bill.

The bill requires the Select Committee on Pension Policy to study job classifications in the pension systems. The study does not affect the pricing of the bill.

Effective Date: 90 days after session.

What Is The Current Situation?

The normal retirement age for members in the affected Plans 2/3 is age 65. Early retirement benefits are available to members who have attained age 55 and meet the minimum service requirements of twenty years in Plan 2 or ten years in Plan 3. Under early retirement, pensions are actuarially reduced for each year the member retires prior to attaining age 65.

Alternate early retirement benefits are available to Plans 2/3 members who have attained age 55 and have at least 30 years of service credit. Pensions are reduced

for alternate early retirement, however, the reduction is less than under early retirement. Alternate early retirement is considered a subsidized form of early retirement because benefits are not actuarially reduced. Statute provides two different sets of alternate early retirement provisions: 2000 ERFs and 2008 ERFs. These provisions differ in pension reductions and retire-rehire restrictions. Eligible members may choose to retire under either provision as follows.

- **2000 ERFs –** Eligible members may retire and receive a pension reduced by 3 percent for each year the member retires prior to attaining age 65. Members retiring under this provision may return to work in an eligible position for a covered public employer prior to age 65 and, subject to certain restrictions, still receive their full pension.
- **2008 ERFs –** Eligible members may retire with unreduced pensions beginning at age 62. Members retiring between ages 55 and 62 have their pension reduced by a specified percentage that is less than the reduction provided under the 2000 ERFs. Members retiring under this provision are generally prohibited from receiving their full pension if they return to work in any capacity for a covered public employer before they reach age 65.

The ROR is one of four prescribed long-term economic assumptions used by the State Actuary to determine contribution rate requirements for the state retirement systems. These long-term economic assumptions were originally set in statute. The Pension Funding Council (PFC) has authority to revise these assumptions, subject to revision by the Legislature.

On October 1, 2011, the PFC adopted new economic assumptions for the plans impacted by this bill. The table below displays the current assumptions and new assumptions, which become effective July 1, 2013 under current law.

Assumption	Current	Adopted
Inflation	3.50%	3.00%
General salary growth	4.00%	3.75%
Annual investment return	8.00%	7.90%
Growth in system membership*	0.90% (TRS), 1.25% (Others)	0.80% (TRS), 0.95% (Others)

** Used to determine employer contribution requirements for the Plan 1 UAAL only.*

Who Is Impacted And How?

We estimate this bill could affect all 154,923 active members of PERS 2, TRS 2, SERS 2, PSERS, and WSPRS 1/2, and all employers of PERS, TRS, SERS, PSERS, and WSPRS through different contribution rates. We expect PERS, TRS, and SERS Plan 2 members and employers to experience an eventual decrease in contribution rates through the reduction of subsidized ERFs for members hired on or after May 1, 2013. We further expect Plan 2 and WSPRS members and employers to experience temporary contribution rate increases as a result of higher contribution rate requirements from the lower ROR assumption. However, we expect the additional prefunding from the temporary increase in contribution requirements will result in lower contribution requirements in the long-term.

This bill will not affect member contribution rates in Plan 1 since they are fixed in statute. Additionally, this bill will not affect member contribution rates in Plan 3 since Plan 3 members do not contribute to their employer-provided defined benefit.

Employer rate impacts vary by year since they include changes to both the Plan 1 UAAL rate and the Plans 2/3 normal cost. Please see How Contribution Rates Changed for further details.

This bill will also affect members hired on or after May 1, 2013, in PERS, TRS, and SERS through decreased benefits in the form of 5 percent subsidized ERFs. Five percent subsidized ERFs have reduction factors larger than the subsidized ERFs reduction factors under the current law, as shown in the table below.

Subsidized Early Retirement Reduction Factors			
Age	2000 ERFs	2008 ERFs	2ESB 6378 ERFs*
55	0.70	0.80	0.50
56	0.73	0.83	0.55
57	0.76	0.86	0.60
58	0.79	0.89	0.65
59	0.82	0.92	0.70
60	0.85	0.95	0.75
61	0.88	0.98	0.80
62	0.91	1.00	0.85
63	0.94	1.00	0.90
64	0.97	1.00	0.95
65	1.00	1.00	1.00

**Applied for members hired on or after May 1, 2013, with at least 30 years of service.*

For example, a member hired on or after May 1, 2013, who retires at age 61 with 30 years of service would have their annual pension reduced by 20 percent under this bill rather than 2 percent under current law. For a member in Plan 2 with an average final salary of $50,000, under current law the ERF would be 0.98, resulting in an initial annual benefit of $29,400. Under this bill, the ERF would be 0.80 resulting in an initial annual benefit of $24,000.

WHY THIS BILL HAS A COST/SAVINGS AND WHO PAYS FOR IT

Why This Bill Has A Cost/Savings

The two major provisions of this bill have separate types of impacts:

- **Change in ROR Assumption –** An assumption change that does not change actual benefits paid or the actual rate of return the plans will experience, but does change the timing of future contributions. This change in timing results in temporary increases in contribution requirements (additional prefunding) followed by lower contribution requirements for employers and Plan 2 members (due to additional prefunding).
- **Change to Subsidized ERFs for Members Hired on or after May 1, 2013 –** A benefit reduction that lowers the liabilities and costs associated with future members. It begins as a small savings (when there aren't many new hires in the system) and becomes a larger savings over time.

See Appendix A for further details on the budget impacts of this bill by major provision.

Who Will Pay For/Receive These Costs/Savings?

The costs/savings that result from this bill will be divided between members and employers according to standard funding methods that vary by plan:

- Plan 1: 100 percent employer.
- Plan 2: 50 percent member and 50 percent employer.
- Plan 3: 100 percent employer.

PERS, SERS, and PSERS employers will realize the impacts on the PERS UAAL payment from a lower assumed ROR, whereas TRS employers will realize the impacts on the TRS UAAL payment.

HOW WE VALUED THESE COSTS

Assumptions We Made

We made the following assumption changes for each of the two major provisions of this bill.

- **Change in ROR Assumption –** To determine the change in the present value of future benefits (and salaries) for current and future members at future measurement dates, we changed the investment return assumptions in our valuation software according to the schedule specified in the bill. We assumed that the prescribed ROR assumption for a given biennium should

be applied in the contribution rate-setting valuation for that biennium. For example, the 2013-15 ROR of 7.9 percent would be included in the 2011 valuation.

To determine the projected assets at each future valuation date, we changed the expected long-term rate of investment return from 8.0 percent to 7.7 percent.

For purposes of this pricing, we changed all economic assumptions consistent with the assumption changes adopted by the PFC in 2011. We further assumed that the changes in this bill for the ROR do not revise the actions of the PFC concerning all other economic assumptions.

- **Change to Subsidized ERFs for Members Hired on or after May 1, 2013 –** We assumed future members would retire later (work longer) under 5 percent subsidized ERFs. Specifically, we assumed new hires would have lower rates of retirement after 30 years of service than currently assumed.

The savings from reducing subsidized early retirements for members hired on or after May 1, 2013, assumes the continuation of these benefits for new hires under current law. According to current law, if the courts, through a final court action, reinstate gain-sharing benefits, the 2008 ERFs are removed prospectively by operation of law. Should this occur, then the expected net savings attributed to this bill would decrease.

Please see Appendix C for further details on the assumption changes we made for this pricing.

How We Applied These Assumptions

We calculated the cost of this bill by comparing the current situation ("base") to the expected scenario if this bill passed ("pricing").

The base is a projection that includes:

- The long-term economic assumptions adopted by the PFC for determining the present value of future benefits and salaries for current and new members.
- An expected 7.7 percent rate of return on assets.
- New hires having access to the 2000 and 2008 subsidized ERFs.

Based on this projection we observe both the required contribution rates and the projected payroll. The multiplication of these two items results in the base fiscal costs.

The pricing is a projection that includes:

- The ROR assumptions for determining the present value of future benefits and salaries changing by year as specified in the bill.

- An expected 7.7 percent rate of return on assets.
- New hires on or after May 1, 2013, having access to 5 percent subsidized ERFs (and therefore retiring later on average).

Based on this projection we observe the new required contribution rates and projected payroll. The multiplication of these two items results in the pricing fiscal costs.

We then compare the pricing fiscal costs to the base fiscal costs to determine the expected impact from this bill.

For determining the projected assets available at each future valuation date, we hold the expected long-term return on assets constant under both the base and pricing because the bill does not change the actual ROR the plans will experience. Using this method we can isolate the impact on projected contribution requirements from changing the ROR assumptions and the timing of future contribution requirements.

Since the 5 percent subsidized ERF provisions are effective May 1, 2013, we applied an additional ten-month interest adjustment to that portion of the liability change to reflect the delayed effective date (for the period July 1, 2012 to May 1, 2013).

Otherwise, we developed these costs using the same methods as disclosed in the *June 30, 2010, Actuarial Valuation Report* (AVR).

Special Data Needed

We developed these costs using the same assets and data as disclosed in the AVR. In addition, we recognized investment returns of 21.14 percent through June 30, 2011, when estimating projected asset values.

ACTUARIAL RESULTS

How The Liabilities Changed

This bill does not change the present value of future benefits, measured at June 30, 2010, payable to current members so there is no impact on pension liability for current members at this measurement date. We include the estimated impact of benefit changes for future hires and the impact of changes in pension liabilities at future measurement dates in the budget impact section.

Impact on Pension Liability - Current Members			
(Dollars in Millions)	**Current**	**Increase**	**Total**
Actuarial Present Value of Projected Benefits			
(The Value of the Total Commitment to all Current Members)			
PERS 1	$12,721	$0.0	$12,721
PERS 2/3	26,041	0.0	26,041
PERS Total	**$38,762**	**$0.0**	**$38,762**
TRS 1	$9,305	$0.0	$9,305
TRS 2/3	9,111	0.0	9,111
TRS Total	**$18,416**	**$0.0**	**$18,416**
SERS 2/3	**$3,461**	**$0.0**	**$3,461**
PSERS 2	**$425**	**$0.0**	**$425**
LEOFF 1	$4,401	$0.0	$4,401
LEOFF 2	7,904	0.0	7,904
LEOFF Total	**$12,306**	**$0.0**	**$12,306**
WSPRS 1/2	**$953**	**$0.0**	**$953**
Unfunded Actuarial Accrued Liability			
*(The Portion of the Plan 1 Liability that is Amortized According to Funding Policy)**			
PERS 1	**$3,094**	**$0.0**	**$3,094**
TRS 1	**$1,345**	**$0.0**	**$1,345**
LEOFF 1	**($1,161)**	**$0.0**	**($1,161)**
Unfunded Projected Unit Credit Liability			
(The Value of the Total Commitment to all Current Members Attributable to Past Service that is Not Covered by Current Assets)			
PERS 1	$3,238	$0.0	$3,238
PERS 2/3	(2,202)	$0.0	(2,202)
PERS Total	**$1,036**	**$0.0**	**$1,036**
TRS 1	$1,439	$0.0	$1,439
TRS 2/3	(886)	$0.0	(886)
TRS Total	**$554**	**$0.0**	**$554**
SERS 2/3	**($296)**	**$0.0**	**($296)**
PSERS 2	**($23)**	**$0.0**	**($23)**
LEOFF 1	($1,180)	$0.0	($1,180)
LEOFF 2	(1,204)	$0.0	(1,204)
LEOFF Total	**($2,384)**	**$0.0**	**($2,384)**
WSPRS 1/2	**($138)**	**$0.0**	**($138)**

Note: Totals may not agree due to rounding.
** PERS 1 and TRS 1 are amortized over a ten-year period. LEOFF 1 must be amortized by June 30, 2024.*

How The Present Value of Future Salaries (PVFS) Changed

This proposal does not change the PVFS of the current members at the measurement date of June 30, 2010. We include the estimated PVFS impact of later assumed retirement for new hires and impact of changes in PVFS at future measurement dates in the budget impact section.

How Contribution Rates Changed

This bill does not impact benefits for current members so there is no 2013 supplemental contribution rate required for the current biennium.

We used the rounded employer rate changes shown below for the Plan 1 UAAL and Plans 2/3 and WSPRS Normal Cost (NC) to measure the budget changes in future Fiscal Years (FY).

Employer Contribution Rate Change By Year								
FY	PERS 1 UAAL	PERS 2/3 NC	TRS 1 UAAL	TRS 2/3 NC	SERS 2/3 NC	PSERS 2 NC	LEOFF 1 UAAL	WSPRS 1/2 NC
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	(0.02%)	0.00%	(0.05%)	(0.02%)	0.00%	0.00%	0.00%
2015	0.00%	(0.02%)	0.00%	(0.05%)	(0.02%)	0.00%	0.00%	0.00%
2016	0.08%	0.30%	0.00%	0.23%	0.33%	0.21%	0.00%	0.16%
2017	0.08%	0.30%	0.00%	0.23%	0.33%	0.21%	0.00%	0.16%
2018	0.15%	0.64%	0.00%	0.51%	0.68%	0.50%	0.00%	3.00%
2019	0.15%	0.64%	0.00%	0.51%	0.68%	0.50%	0.00%	3.00%
2020	0.00%	0.53%	0.00%	0.39%	0.57%	0.50%	0.00%	3.38%
2021	0.00%	0.53%	0.00%	0.39%	0.57%	0.50%	0.00%	3.38%
2022	0.00%	0.31%	0.00%	0.21%	0.35%	0.44%	0.00%	2.52%
2023	0.00%	0.31%	0.24%	0.21%	0.35%	0.44%	0.00%	2.52%
2024	0.00%	0.12%	0.00%	0.06%	0.14%	0.36%	0.00%	1.68%
2025	0.00%	0.12%	0.00%	0.06%	0.14%	0.36%	0.00%	1.68%
2026	(0.31%)	(0.04%)	0.00%	(0.07%)	(0.03%)	0.28%	0.00%	0.98%
2027	0.00%	(0.04%)	0.00%	(0.07%)	(0.03%)	0.28%	0.00%	0.98%
2028	0.00%	(0.15%)	0.00%	(0.18%)	(0.14%)	0.21%	0.00%	0.42%
2029	0.00%	(0.15%)	0.00%	(0.18%)	(0.14%)	0.21%	0.00%	0.42%
2030	0.00%	(0.24%)	0.00%	(0.26%)	(0.22%)	0.15%	0.00%	(0.02%)
2031	0.00%	(0.24%)	0.00%	(0.26%)	(0.22%)	0.15%	0.00%	(0.02%)
2032	0.00%	(0.32%)	0.00%	(0.34%)	(0.28%)	0.09%	0.00%	(0.34%)
2033	0.00%	(0.32%)	0.00%	(0.34%)	(0.28%)	0.09%	0.00%	(0.34%)
2034	0.00%	(0.37%)	0.00%	(0.40%)	(0.31%)	0.05%	0.00%	(0.60%)
2035	0.00%	(0.37%)	0.00%	(0.40%)	(0.31%)	0.05%	0.00%	(0.60%)
2036	0.00%	(0.41%)	0.00%	(0.45%)	(0.34%)	0.01%	0.00%	(0.82%)
2037	0.00%	(0.41%)	0.00%	(0.45%)	(0.34%)	0.01%	0.00%	(0.82%)

Contribution rates changes vary by source (normal cost versus UAAL) and by system.

LEOFF 1, WSPRS, and PSERS are not affected by the change to subsidized early retirement. In these plans we see the impact of the change in the assumed ROR only. If all assumptions are realized, we expect LEOFF 1 to remain fully funded before and after this bill. We found the change in the assumed ROR triggers the member maximum rate in WSPRS earlier than under current law. This results in larger employer rate increases beginning in FY 2018.

The normal cost rates in PERS, TRS, and SERS are impacted by both the change in the assumed ROR and the reduction in subsidized early retirement for new hires. The impact of the changes to the ROR assumption surfaces in FY 2016

since we already assume a 7.9 percent ROR under current law for this pricing. In other words, this bill does not change the ROR assumption until 2015-17 when the prescribed rate becomes 7.8 percent (with a subsequent change in 2017-19 when the prescribed rate becomes 7.7 percent). For this change alone, we see temporary increases in required contribution rates (leading to additional prefunding) followed by decreases in required contribution rates (due to the additional prefunding). We expect decreases in the required contribution rates for PSERS to emerge beyond 25 years.

PERS, TRS, and SERS Plans 2/3 normal cost rates decrease due to the reduction of subsidized ERFs for all impacted systems. TRS experiences the largest future rate savings from this benefit change because TRS has the highest utilization of subsidized early retirement under current law, followed by PERS and then SERS.

The combined effect of (a) the change in the assumed ROR and (b) the reduction of subsidized early retirement benefits for new hires leads to decreased contribution requirements beginning in FY 2026 for PERS, TRS, and SERS.

Please see Appendix A for estimated contribution rate changes for each of the major provisions of this bill.

How This Impacts Budgets And Employees

Budget Impacts							
(Dollars in Millions)	PERS	TRS	SERS	PSERS	LEOFF	WSPRS	Total
Fiscal Year 2013							
General Fund	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Non-General Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total State	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
Local Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Employer	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
Total Employee	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
2013-2015							
General Fund	($0.8)	($3.3)	($0.3)	$0.0	$0.0	$0.0	($4.4)
Non-General Fund	(1.1)	0.0	0.0	0.0	0.0	0.0	(1.1)
Total State	**($1.9)**	**($3.3)**	**($0.3)**	**$0.0**	**$0.0**	**$0.0**	**($5.5)**
Local Government	(2.0)	(1.7)	(0.4)	0.0	0.0	0.0	(4.1)
Total Employer	**($4.0)**	**($5.0)**	**($0.7)**	**$0.0**	**$0.0**	**$0.0**	**($9.6)**
Total Employee	**($3.0)**	**($1.2)**	**($0.3)**	**$0.0**	**$0.0**	**$0.0**	**($4.5)**
2012-2037							
General Fund	($35.8)	($159.9)	($3.9)	$16.9	$0.0	$1.9	($180.7)
Non-General Fund	(51.0)	0.0	0.0	1.8	0.0	21.2	(28.0)
Total State	**($86.8)**	**($159.9)**	**($3.9)**	**$18.7**	**$0.0**	**$23.1**	**($208.7)**
Local Government	(92.8)	(81.3)	(4.8)	5.1	0.0	0.0	(173.8)
Total Employer	**($179.6)**	**($241.2)**	**($8.6)**	**$23.8**	**$0.0**	**$23.1**	**($382.5)**
Total Employee	**($96.9)**	**($184.3)**	**($16.2)**	**$23.7**	**$0.0**	**$1.7**	**($272.0)**

Note: Totals may not agree due to rounding. We use long-term assumptions to produce our short-term budget impacts. Therefore, our short-term budget impacts will likely vary from estimates produced from other short-term budget models.

The analysis of this bill does not consider any other proposed changes to the systems. The combined effect of several changes to the systems could exceed the sum of each proposed change considered individually.

As with the costs developed in the actuarial valuation, the emerging costs of the systems will vary from those presented in the AVR or this fiscal note to the extent that actual experience differs from the actuarial assumptions.

How the Risk Measures Changed

This bill will affect the overall risk and affordability of the pension systems as shown below. Generally, we found affordability remained unchanged and pay-go risks improved.

Pension Score Card				
	Base		Pricing	
Category *(Dollars in Billions)*	**Value**	**Score**	**Value**	**Score**
Affordability				
Chance Pensions will Consume More than 8% of GF-S[1]	6%	80	6%	80
5% Chance GF-S[1] Consumption will Exceed	8.1%	61	8.1%	61
5% Chance Employer Contribution Rate will Exceed	17.3%	54	17.3%	55
Risk				
Chance of PERS 1, TRS 1 in Pay-Go[2]	27%	33	26%	34
Chance of Open Plan in Pay-Go[2]	9%	51	7%	53
5% Chance Annual Pay-Go Cost[3] in PERS 1, TRS 1 Exceed	$1.5	40	$1.5	40
5% Chance Annual Pay-Go Cost[3] in Open Plans Exceed	$9.9	0	$9.1	0
Chance of Total Funded Status Below 60%	26%	36	26%	37
Total Weighted Score		**50**		**50**

[1]Currently 2.7% of GF-S.

[2]When today's value of annual cost exceeds $25 million.

[3]Pay-Go costs on top of normal pension costs.

We found the reduction of the subsidized ERFs improves affordability by lowering required contributions throughout the projection period. However, the impact on affordability risk was minimal as measured under the score card. Under current law, most affordability risks surface in 2024. This corresponds with the year the LEOFF 1 UAAL would need to be fully amortized under pessimistic scenarios.

The reduction of the subsidized ERFs results in smaller assumed open-plan funding shortfalls in the future which increases overall funded status and decreases the chance of pay-go in the open plans. This provision also reduces the open plan pay-go amount since lower benefits are expected.

We also see that changes in the ROR assumption increase pre-funding in all plans over current assumptions, which improves long-term funded status and pay-go risks for all plans.

The combination of the change in ROR assumption and the reduction of the subsidized ERFs results in slightly lower assumed funding shortfalls for both open and closed plans in the future as compared to current law.

Please see Appendix B for further details about how risk measures change under this bill.

Please see our *2010 Risk Assessment Report* (RAR) for additional background on how we developed and how to interpret the risk measures.

HOW THE RESULTS CHANGE WHEN THE ASSUMPTIONS CHANGE

To determine the sensitivity of the actuarial results to the best-estimate assumptions or methods selected for this pricing we looked at the impact of varying retirement behavior for the 5 percent subsidized ERF benefit change.

We performed sensitivity analysis on the benefit change for members first hired on or after May 1, 2013. To see how sensitive the results are to assumed retirement behavior, we compared our best-estimate pricing for the ERF benefit change to the following two scenarios:

- **Higher Savings: No Retirement Behavior Change –** In this scenario, we assumed no change in retirement behavior for new hires with at least 30 years of service. In other words, we assumed new hires would retire at the same rate as current members who have access to more favorable early retirement benefits.
- **Lower Savings: Later Retirement –** In this scenario, we assumed new hires with at least 30 years of service would retire later than what we assumed in our best-estimate pricing. Specifically, we assumed new hires would have the same rate of retirement after 30 years of service as they do currently before 30 years of service.

The table below shows the results of our sensitivity analysis. We found that the results were not that sensitive to assumed changes in retirement behavior. This occurs because the savings for later assumed retirement are offset by lower savings from the ERF changes. When we assume no change in retirement behavior (or earlier retirement than under our best-estimate assumptions), the cost of earlier assumed retirement is offset by higher savings from the ERF changes.

Please see Appendix A for our best-estimate results by major provision of the bill.

Sensitivity of Best Estimate Fiscal Impact – 5% ERFs Only			
(Dollars in Millions)	Lower Savings Later Retirement	Best-Estimate	Higher Savings No Retirement Behavior Change
25-Year GF-S	($720.3)	($739.8)	($779.2)
25-Year Total Employer	($1,640.1)	($1,685.1)	($1,771.1)

WHAT THE READER SHOULD KNOW

The Office of the State Actuary ("we") prepared this fiscal note based on our understanding of the bill as of the date shown in the footer. We intend this fiscal note to be used by the Legislature during the 2012 Legislative Session only.

We advise readers of this fiscal note to seek professional guidance as to its content and interpretation, and not to rely upon this communication without such guidance. Please read the analysis shown in this fiscal note as a whole. Distribution of, or reliance on, only parts of this fiscal note could result in its misuse, and may mislead others.

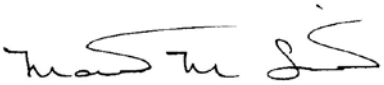
ACTUARY'S CERTIFICATION

The undersigned hereby certifies that:

1. The actuarial cost methods are appropriate for the purposes of this pricing exercise.
2. The actuarial assumptions used are appropriate for the purposes of this pricing exercise.
3. The data on which this fiscal note is based are sufficient and reliable for the purposes of this pricing exercise.
4. Use of another set of methods, assumptions, and data may also be reasonable, and might produce different results.
5. The risk analysis summarized in this fiscal note involves the interpretation of many factors and the application of professional judgment. We believe that the data, assumptions, and methods used in our risk assessment model are reasonable and appropriate for the purposes of this pricing exercise. The use of another set of data, assumptions, and methods, however, could also be reasonable and could produce materially different results.
6. We prepared this fiscal note for the 2012 Legislative Session.
7. We prepared this fiscal note and provided opinions in accordance with Washington State law and accepted actuarial standards of practice as of the date shown in the footer of this fiscal note.

The undersigned, with actuarial credentials, meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

While this fiscal note is meant to be complete, the undersigned is available to provide extra advice and explanations as needed.



Matt Smith, FCA, EA, MAAA
State Actuary

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APPENDIX A – INDIVIDUAL COMPONENT COSTS

This Appendix shows the fiscal costs associated with the major provisions of the bill. We show two categories below:

- **ROR Assumption Changes –** The impact of changing the investment return assumption over time.
- **Plans 2/3 Benefit Change –** The impact of reducing subsidized ERFs for newly hired members on or after May 1, 2013.

Please note the sum of each category does not equal the total cost of this proposal due to the interaction of the two categories in our pricing.

The tables below show the impact of changing the investment return assumption according to the following schedule.

- 7.9 percent, beginning July 1, 2013 (already assumed under current law).
- 7.8 percent, beginning July 1, 2015.
- 7.7 percent, beginning July 1, 2017.

Employer Contribution Rate Change By Year – ROR Assumption Changes Only								
FY	PERS 1 UAAL	PERS 2/3 NC	TRS 1 UAAL	TRS 2/3 NC	SERS 2/3 NC	PSERS 2 NC	LEOFF 1 UAAL	WSPRS 1/2 NC
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.08%	0.36%	0.00%	0.37%	0.38%	0.21%	0.00%	0.16%
2017	0.08%	0.36%	0.00%	0.37%	0.38%	0.21%	0.00%	0.16%
2018	0.15%	0.74%	0.00%	0.74%	0.77%	0.50%	0.00%	3.00%
2019	0.15%	0.74%	0.00%	0.74%	0.77%	0.50%	0.00%	3.00%
2020	0.00%	0.67%	0.00%	0.67%	0.68%	0.50%	0.00%	3.38%
2021	0.00%	0.67%	0.00%	0.67%	0.68%	0.50%	0.00%	3.38%
2022	0.00%	0.48%	0.00%	0.53%	0.48%	0.44%	0.00%	2.52%
2023	0.00%	0.48%	0.22%	0.53%	0.48%	0.44%	0.00%	2.52%
2024	0.00%	0.31%	0.00%	0.41%	0.29%	0.36%	0.00%	1.68%
2025	0.00%	0.31%	0.00%	0.41%	0.29%	0.36%	0.00%	1.68%
2026	(0.31%)	0.17%	0.00%	0.31%	0.13%	0.28%	0.00%	0.98%
2027	0.00%	0.17%	0.00%	0.31%	0.13%	0.28%	0.00%	0.98%
2028	0.00%	0.06%	0.00%	0.22%	0.02%	0.21%	0.00%	0.42%
2029	0.00%	0.06%	0.00%	0.22%	0.02%	0.21%	0.00%	0.42%
2030	0.00%	(0.02%)	0.00%	0.15%	(0.06%)	0.15%	0.00%	(0.02%)
2031	0.00%	(0.02%)	0.00%	0.15%	(0.06%)	0.15%	0.00%	(0.02%)
2032	0.00%	(0.08%)	0.00%	0.07%	(0.11%)	0.09%	0.00%	(0.34%)
2033	0.00%	(0.08%)	0.00%	0.07%	(0.11%)	0.09%	0.00%	(0.34%)
2034	0.00%	(0.13%)	0.00%	0.02%	(0.14%)	0.05%	0.00%	(0.60%)
2035	0.00%	(0.13%)	0.00%	0.02%	(0.14%)	0.05%	0.00%	(0.60%)
2036	0.00%	(0.17%)	0.00%	(0.02%)	(0.17%)	0.01%	0.00%	(0.82%)
2037	0.00%	(0.17%)	0.00%	(0.02%)	(0.17%)	0.01%	0.00%	(0.82%)

Budget Impacts – ROR Assumption Changes Only			
(Dollars in Millions)	Fiscal Year 2013	2013-2015	25-Year
General Fund-State	$0.0	$0.0	$536.5
Local Government	$0.0	$0.0	$520.6
Total Employer	$0.0	$0.0	$1,233.7

Note: We use long-term assumptions to produce our short-term budget impacts. Therefore, our short-term budget impacts will likely vary from estimates produced from other short-term budget models.

The lower rate-of-return assumptions will not change actual benefits paid or the actual rate of return the plans experience, but will change the timing of future contributions and dollar amount of future investment returns. As a result, we expect the lower rate-of-return assumptions to temporarily increase contribution requirements resulting in higher employer costs and Plan 2 contribution rates over the next 25 years. For this provision alone, we expect a 25-year total employer cost of over $1.2 billion. We expect a 50-year total employer savings of approximately $4 billion from the additional prefunding that occurs during the next 25 years.

The tables below show the impact of changing subsidized ERFs for Plans 2/3 members hired on or after May 1, 2013.

Contribution Rate Change By Year – Plans 2/3 Benefit Change Only					
FY	PERS 1 UAAL	PERS 2/3 NC	TRS 1 UAAL	TRS 2/3 NC	SERS 2/3 NC
2013	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	(0.01%)	0.00%	(0.05%)	(0.02%)
2015	0.00%	(0.01%)	0.00%	(0.05%)	(0.02%)
2016	0.00%	(0.06%)	0.00%	(0.13%)	(0.05%)
2017	0.00%	(0.06%)	0.00%	(0.13%)	(0.05%)
2018	0.00%	(0.10%)	0.00%	(0.21%)	(0.08%)
2019	0.00%	(0.10%)	0.00%	(0.21%)	(0.08%)
2020	0.00%	(0.13%)	0.00%	(0.27%)	(0.10%)
2021	0.00%	(0.13%)	0.00%	(0.27%)	(0.10%)
2022	0.00%	(0.17%)	0.02%	(0.31%)	(0.13%)
2023	0.00%	(0.17%)	0.00%	(0.31%)	(0.13%)
2024	0.00%	(0.19%)	0.00%	(0.34%)	(0.14%)
2025	0.01%	(0.19%)	0.00%	(0.34%)	(0.14%)
2026	0.00%	(0.20%)	0.00%	(0.36%)	(0.15%)
2027	0.00%	(0.20%)	0.00%	(0.36%)	(0.15%)
2028	0.00%	(0.21%)	0.00%	(0.38%)	(0.16%)
2029	0.00%	(0.21%)	0.00%	(0.38%)	(0.16%)
2030	0.00%	(0.22%)	0.00%	(0.39%)	(0.16%)
2031	0.00%	(0.22%)	0.00%	(0.39%)	(0.16%)
2032	0.00%	(0.22%)	0.00%	(0.40%)	(0.17%)
2033	0.00%	(0.22%)	0.00%	(0.40%)	(0.17%)
2034	0.00%	(0.23%)	0.00%	(0.40%)	(0.16%)
2035	0.00%	(0.23%)	0.00%	(0.40%)	(0.16%)
2036	0.00%	(0.23%)	0.00%	(0.41%)	(0.16%)
2037	0.00%	(0.23%)	0.00%	(0.41%)	(0.16%)

Budget Impacts - Plans 2/3 Benefit Change Only			
(Dollars in Millions)	Fiscal Year 2013	2013-2015	25-Year
General Fund-State	$0.0	($4.0)	($739.8)
Local Government	$0.0	($3.1)	($727.3)
Total Employer	$0.0	($7.7)	($1,685.1)

Note: We use long-term assumptions to produce our short-term budget impacts. Therefore, our short-term budget impacts will likely vary from estimates produced from other short-term budget models.

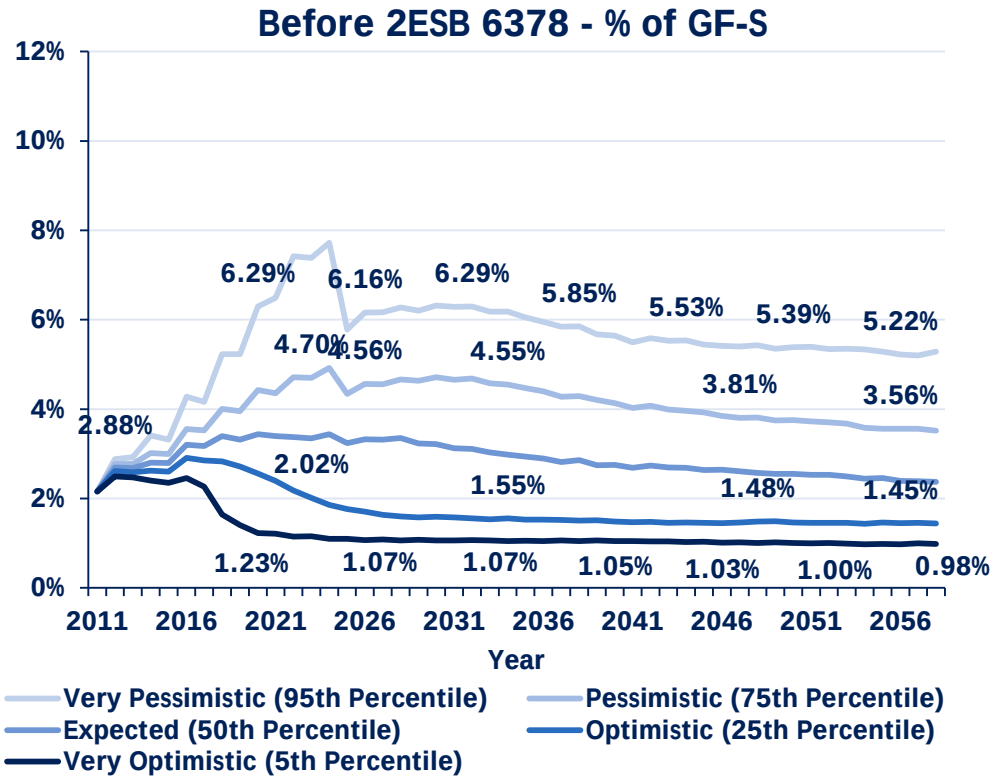
APPENDIX B – HOW THE RISK MEASURES CHANGED (FULL PROPOSAL)

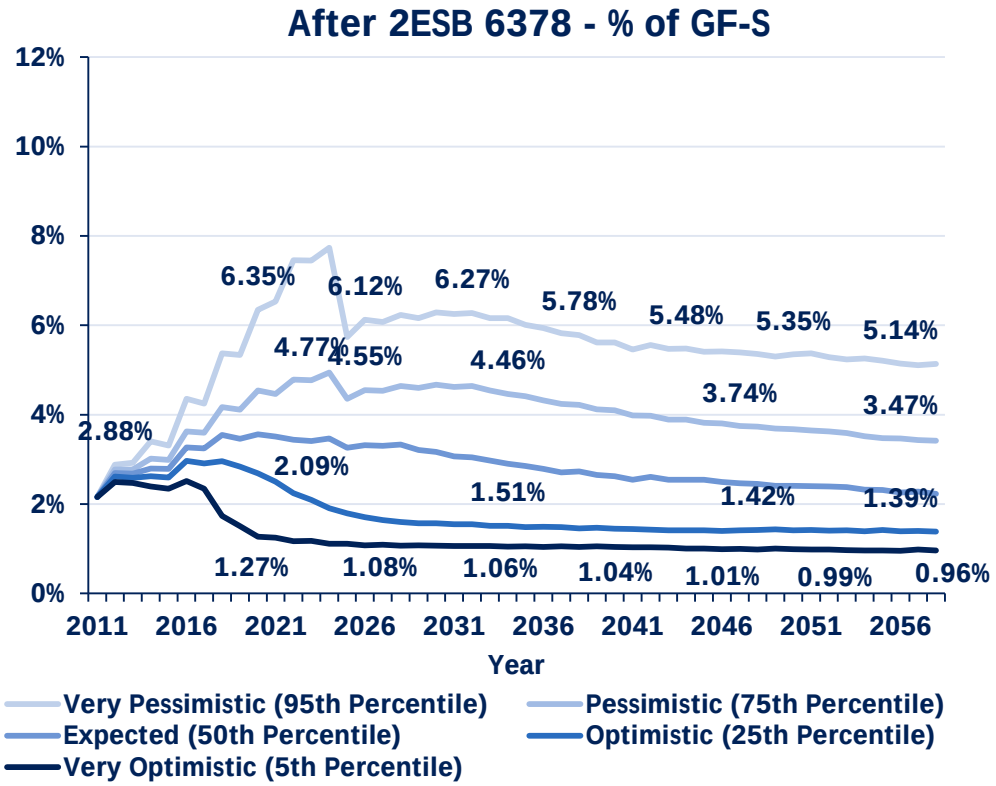
Two impacts that we don't see on the scorecard shown in the body of the fiscal note include:

- **Long-Term Affordability –** Long-term affordability improves based on both the reduction of the subsidized ERFs for new hires and the increased pre-funding associated with lower ROR assumptions.
- **Current Plan 2 Member Contribution Rates –** Plan 2 member contribution rates are expected to decrease in the long-term.

The graphs below show these two impacts. Please note that the "Before 2ESB 6378" graphs include the PFC's adoption of new economic assumptions as shown in the table on page 4 of this fiscal note.

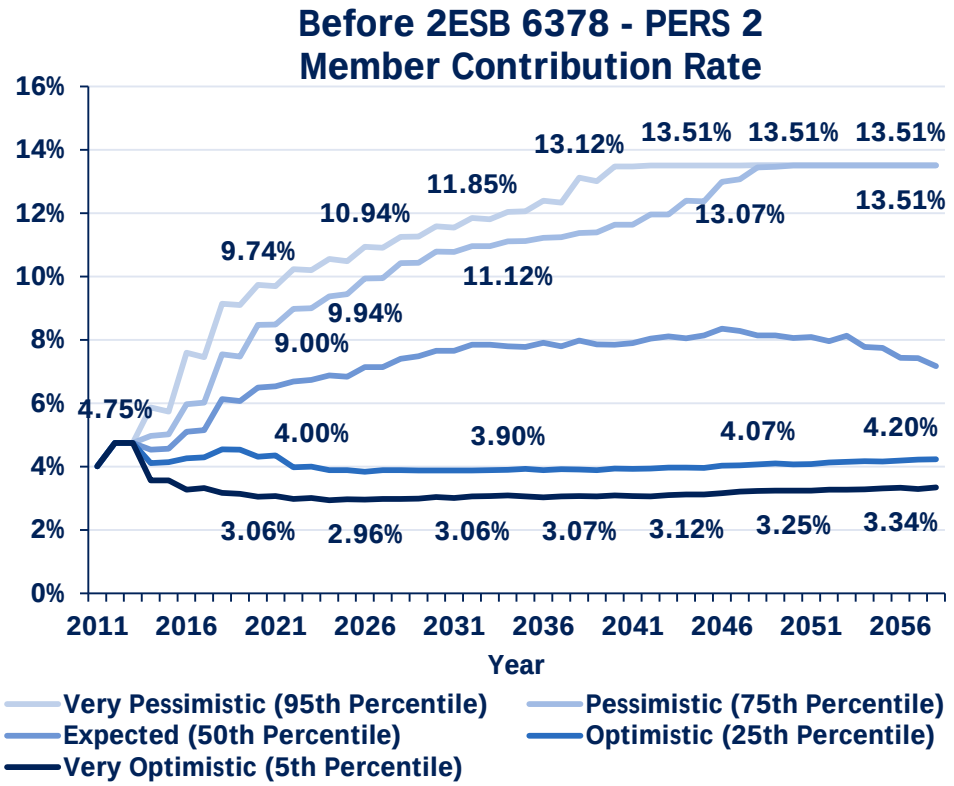
First, the percent of GF-S shows the short-term increase in cost due to the ROR assumption changes and the long-term decrease in costs associated with this bill. More specifically, the right portion of these two graphs can be compared to see the longer-term impact. Under the full range of optimistic to pessimistic scenarios, this bill will have lower costs.

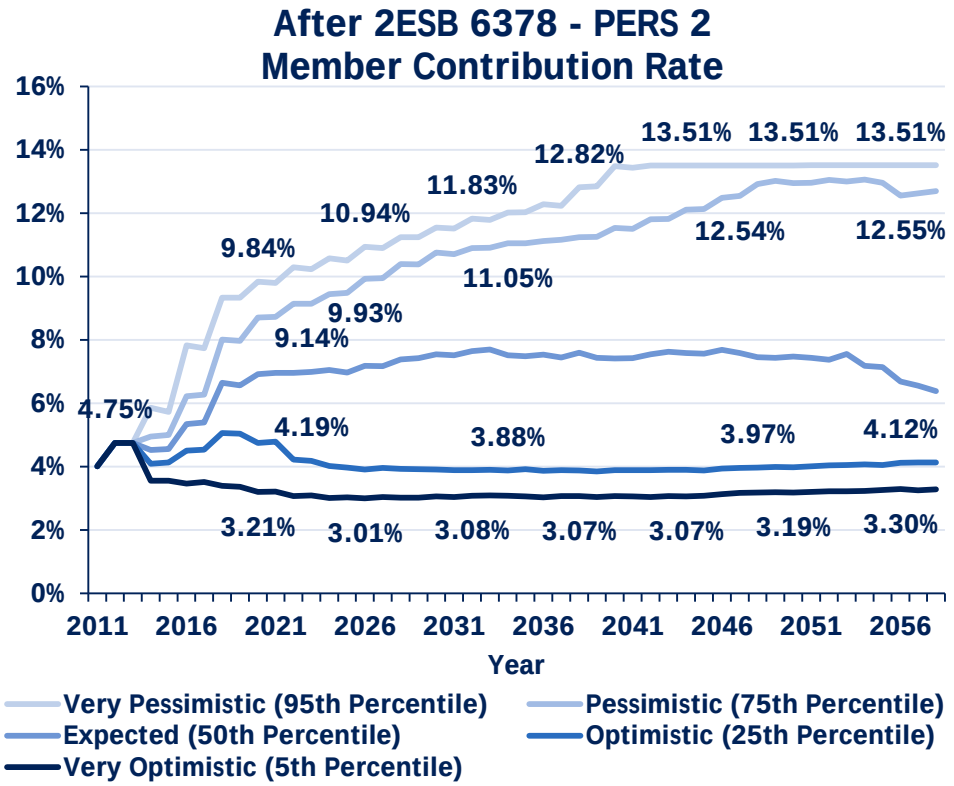


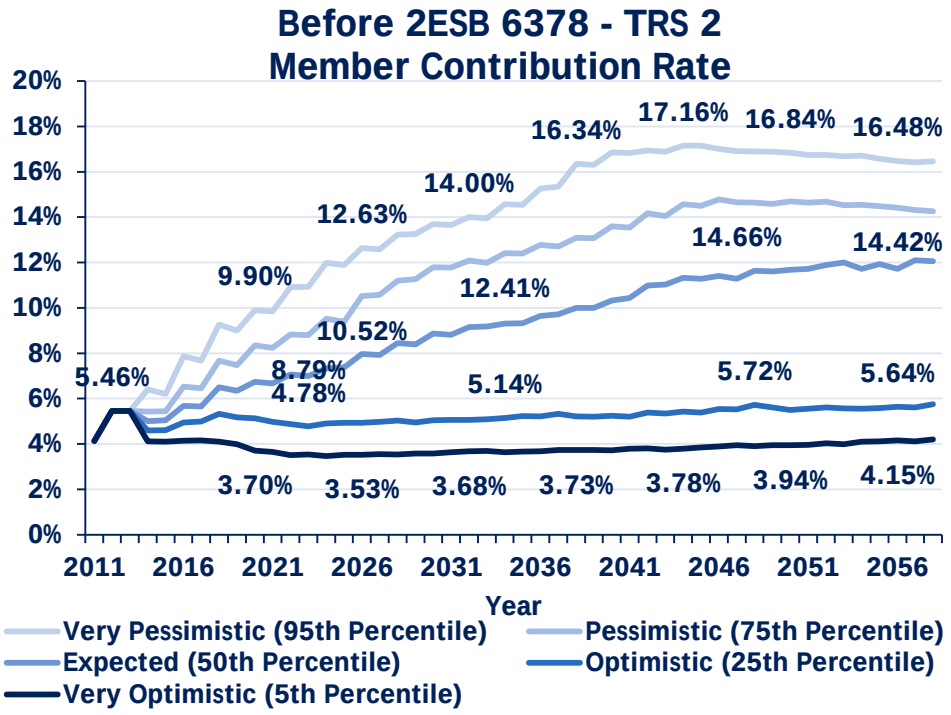


The following contribution rate graphs show how Plan 2 members will be impacted by this bill. Generally, this shows a consistent, but more thorough, analysis to what we displayed and discussed in the body of the fiscal note for the Plans 2/3 rate changes by year.

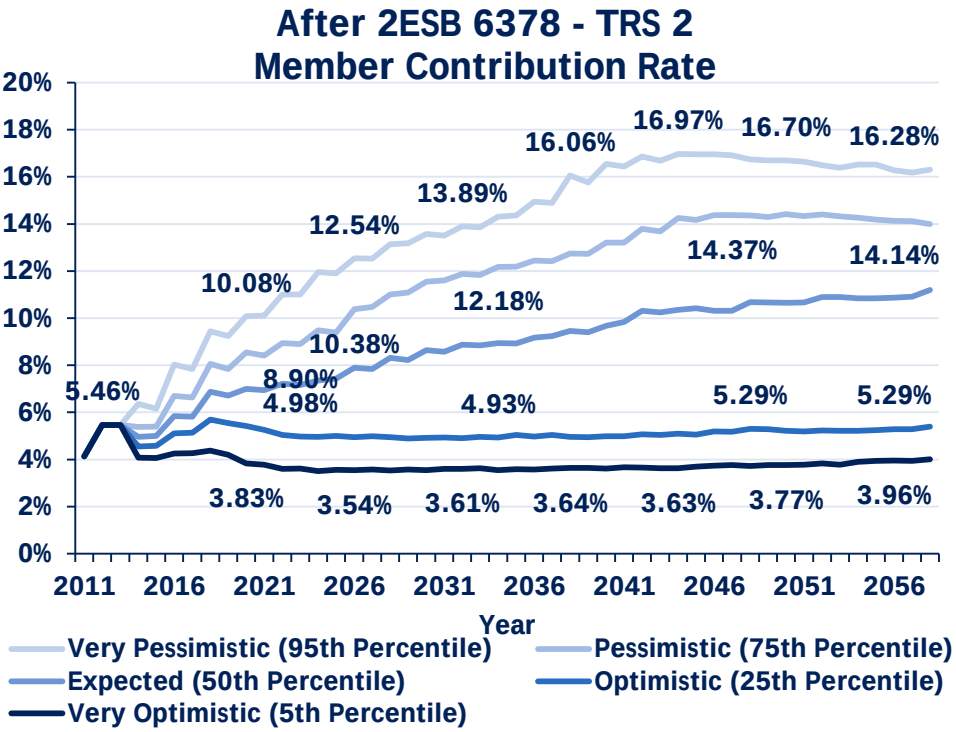
Generally, when we compare the "before" graphs to the "after" graphs, we see that PERS and TRS Plan 2 member contribution rates initially increase due to the ROR assumption changes, and then decrease in the long-term due to the reduction of subsidized ERFs for new hires and the additional pre-funding under the ROR assumption changes. These graphs produce the same general contribution rate change patterns shown on page 9 of this fiscal note. SERS has a similar impact as PERS.


Before 2ESB 6378 - PERS 2
Member Contribution Rate
16%
14%
12%
10%
8%
6%
4%
2%
0%
2011
2016
2021
2026
2031
2036
2041
2046
2051
2056
Year
4.75%
9.74%
10.94%
11.85%
13.12%
13.51%
13.51%
13.51%
9.00%
9.94%
11.12%
13.07%
13.51%
4.00%
3.90%
4.07%
4.20%
3.06%
2.96%
3.06%
3.07%
3.12%
3.25%
3.34%
Very Pessimistic (95th Percentile)
Pessimistic (75th Percentile)
Expected (50th Percentile)
Optimistic (25th Percentile)
Very Optimistic (5th Percentile)


After 2ESB 6378 - PERS 2
Member Contribution Rate
16%
14%
12%
10%
8%
6%
4%
2%
0%
2011
2016
2021
2026
2031
2036
2041
2046
2051
2056
Year
4.75%
9.84%
10.94%
11.83%
12.82%
13.51%
13.51%
13.51%
9.14%
9.93%
11.05%
12.54%
12.55%
4.19%
3.88%
3.97%
4.12%
3.21%
3.01%
3.08%
3.07%
3.07%
3.19%
3.30%
Very Pessimistic (95th Percentile)
Pessimistic (75th Percentile)
Expected (50th Percentile)
Optimistic (25th Percentile)
Very Optimistic (5th Percentile)



**Excludes member maximum rates under RCW 41.45.061.*



**Excludes member maximum rates under RCW 41.45.061.*

APPENDIX C – ASSUMPTIONS WE MADE

In addition to the assumption changes outlined in the body of this fiscal note, we updated the new entrant profile used in our projection system for both the "base" and "pricing" projections.

In order to ensure that we ran the same new entrant population through each projection (regardless of the percent going into Plan 2 versus Plan 3), we updated our new entrant profile for this pricing. This updated new entrant profile is a weighted average of two-thirds of our current Plan 2 new entrant database and one-third of our current Plan 3 new entrant database. This updated new entrant profile in our projection system allows us to consistently project the same future members to the pension system no matter what percent goes into Plan 2 or Plan 3.

Below, we show the new entrant profiles we used for PERS, TRS, and SERS in our projections.

New Entrant Profiles											
PERS				TRS				SERS			
Age	Salary	Sex	Weight	Age	Salary	Sex	Weight	Age	Salary	Sex	Weight
24	$34,000	M	10.5%	**25**	$50,533	M	6.7%	**24**	$19,167	M	3.0%
24	$34,000	F	10.5%	**25**	$50,533	F	15.6%	**24**	$19,167	F	12.1%
29	$38,800	M	9.8%	**29**	$53,400	M	8.6%	**29**	$20,400	M	2.6%
29	$38,800	F	9.8%	**29**	$53,400	F	20.0%	**29**	$20,400	F	10.3%
34	$41,133	M	7.3%	**34**	$55,300	M	4.5%	**34**	$19,433	M	2.6%
34	$41,133	F	7.3%	**34**	$55,300	F	10.6%	**34**	$19,433	F	10.6%
39	$41,700	M	5.8%	**39**	$55,467	M	3.0%	**39**	$18,733	M	3.2%
39	$41,700	F	5.8%	**39**	$55,467	F	7.1%	**39**	$18,733	F	12.9%
44	$41,733	M	5.3%	**44**	$56,067	M	2.7%	**44**	$18,767	M	3.1%
44	$41,733	F	5.3%	**44**	$56,067	F	6.4%	**44**	$18,767	F	12.4%
49	$42,200	M	4.5%	**49**	$56,733	M	2.0%	**49**	$19,467	M	2.2%
49	$42,200	F	4.5%	**49**	$56,733	F	4.7%	**49**	$19,467	F	9.0%
57	$43,433	M	6.7%	**56**	$62,767	M	2.4%	**57**	$19,467	M	3.2%
57	$43,433	F	6.7%	**56**	$62,767	F	5.7%	**57**	$19,467	F	12.7%

We changed the retirement assumptions in PERS, TRS, and SERS Plans 2/3 for members hired after May 1, 2013. We expect those members to work longer due to lower subsidized ERFs than current members. The table below displays those retirement rates.

	PERS 2/3 (SVC >= 30)				SERS 2/3 (SVC >= 30)			
	Current Rates		Pricing Rates		Current Rates		Pricing Rates	
Age	Male	Female	Male	Female	Male	Female	Male	Female
55	0.13	0.14	0.062	0.065	0.13	0.14	0.062	0.065
56	0.12	0.12	0.062	0.062	0.12	0.12	0.062	0.062
57	0.13	0.13	0.069	0.069	0.13	0.13	0.069	0.069
58	0.14	0.13	0.099	0.071	0.14	0.13	0.099	0.071
59	0.18	0.28	0.118	0.139	0.18	0.28	0.118	0.139
60	0.14	0.15	0.112	0.117	0.14	0.15	0.112	0.117
61	0.22	0.20	0.149	0.156	0.22	0.20	0.149	0.156
62	0.33	0.29	0.287	0.252	0.33	0.29	0.287	0.252
63	0.25	0.25	0.224	0.224	0.25	0.25	0.224	0.224
64	0.60	0.60	0.576	0.576	0.55	0.55	0.526	0.526
65	0.45	0.45	0.450	0.450	0.45	0.45	0.450	0.450

TRS 2/3								
	Current Rates				Pricing Rates			
	Svc = 30		Svc >= 31		Svc = 30		Svc >= 31	
Age	Male	Female	Male	Female	Male	Female	Male	Female
55	0.24	0.21	0.15	0.13	0.097	0.081	0.069	0.055
56	0.23	0.23	0.17	0.15	0.101	0.101	0.080	0.073
57	0.25	0.25	0.18	0.16	0.115	0.140	0.088	0.105
58	0.31	0.27	0.20	0.18	0.146	0.153	0.100	0.115
59	0.38	0.29	0.21	0.24	0.182	0.166	0.108	0.144
60	0.41	0.32	0.23	0.21	0.244	0.193	0.164	0.144
61	0.48	0.43	0.24	0.24	0.277	0.260	0.169	0.174
62	0.60	0.60	0.40	0.35	0.410	0.410	0.318	0.296
63	0.50	0.50	0.30	0.30	0.346	0.372	0.249	0.274
64	0.55	0.50	0.55	0.50	0.526	0.476	0.526	0.476
65	0.50	0.45	0.50	0.45	0.500	0.450	0.500	0.450

For purposes of pricing the Plans 2/3 benefit change only (that provision by itself), we used the economic assumptions as disclosed in the AVR. For purposes of pricing the Plans 2/3 benefit change with the other provisions of this bill, we used the economic assumptions as disclosed in the body of this fiscal note.

Otherwise, we developed these costs using the assumptions as disclosed in the AVR.

GLOSSARY OF ACTUARIAL TERMS

Actuarial Accrued Liability: Computed differently under different funding methods, the actuarial accrued liability generally represents the portion of the present value of fully projected benefits attributable to service credit that has been earned (or accrued) as of the valuation date.

Actuarial Present Value: The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions (i.e. interest rate, rate of salary increases, mortality, etc.).

Aggregate Funding Method: The Aggregate Funding Method is a standard actuarial funding method. The annual cost of benefits under the Aggregate Method is equal to the normal cost. The method does not produce an unfunded actuarial accrued liability. The normal cost is determined for the actuarial accrued group rather than on an individual basis.

Entry Age Normal Cost Method (EANC): The EANC method is a standard actuarial funding method. The annual cost of benefits under EANC is comprised of two components:

- Normal cost.
- Amortization of the unfunded actuarial accrued liability.

The normal cost is determined on an individual basis, from a member's age at plan entry, and is designed to be a level percentage of pay throughout a member's career.

Normal Cost: Computed differently under different funding methods, the normal cost generally represents the portion of the cost of projected benefits allocated to the current plan year.

Projected Unit Credit (PUC) Liability: The portion of the Actuarial Present Value of future benefits attributable to service credit that has been earned to date (past service) based on the PUC method.

Projected Benefits: Pension benefit amounts that are expected to be paid in the future taking into account such items as the effect of advancement in age as well as past and anticipated future compensation and service credits.

Unfunded PUC Liability: The excess, if any, of the Present Value of Benefits calculated under the PUC cost method over the Valuation Assets. This is the portion of all benefits earned to date that are not covered by plan assets.

Unfunded Actuarial Accrued Liability (UAAL): The excess, if any, of the actuarial accrued liability over the actuarial value of assets. In other words, the present value of benefits earned to date that are not covered by plan assets.

GLOSSARY OF RISK TERMS

Affordability: Measures the affordability of the pension systems. Affordability risk measures the chance that pension contributions will cross certain thresholds with regards to the General-Fund and contribution rates.

"Current Law": Scenarios in which assumptions about Legislative behavior are excluded. These scenarios show projections regarding the current state of Washington statutes.

Optimistic: A measurement of the pension system under favorable conditions (above expected investment returns, for example). Optimistic refers to the 75th percentile, where there is a 25 percent chance of the measurement being better and 75 percent chance of the measurement being worse. Very optimistic refers to the 95th percentile.

"Past Practices": Scenarios in which assumptions regarding Legislative behavior are introduced. These assumptions include actual contributions below what are actuarially required and improving benefits over time. These scenarios are meant to project past behavior into the future.

Pay-Go: The trust fund runs out of assets, and payments from the General-Fund must be made to meet contractual obligations.

Pessimistic: A measurement of the pension system under unfavorable conditions (below expected investment returns, for example). Pessimistic refers to the 25th percentile, where there is a 75 percent chance of the measurement being better and 25 percent chance of the measurement being worse. Very pessimistic refers to the 5th percentile.

Premature Pay-Go: Pay-go payments, measured in today's value, which might be considered "significant" in terms of the potential impact on the General-Fund.

Risk: Measures the risk metrics of the pension systems, including the chance that the pension systems will prematurely run out of assets, the amount of potential pay-go contributions, and the chance that the funded status will cross a certain threshold.

Risk Tolerance: The amount of risk an individual or group is willing to accept with regards to the likelihood and severity of unfavorable outcomes.