BOARD MEETING AGENDA

JULY 25, 2018 • 9:30AM

LEOFF Plan 2 Retirement Board

LOCATION

STATE INVESTMENT BOARD
Large Conference Room, STE 100
2100 Evergreen Park Drive S.W.
Olympia, WA 98502

THEY KEEP US SAFE,
WE KEEP THEM SECURE.

1.	**Approval of Minutes** June 20, 2018	**9:30 AM**
2.	**DRS Annual Update** *Tracy Guerin, DRS*	**9:35 AM**
3.	**Valuation Audit Results** *Mark Olleman, Consulting Actuary, Milliman* *Nick Collier, Principal Consulting Actuary, Milliman* *Daniel Wade, Principal, Consulting Actuary, Milliman*	**10:00 AM**
4.	**Funding Method Options** Ryan Frost, Senior Research and Policy Manager	**11:00 AM**
5.	**Contribution Rate Setting Options** Ryan Frost, Senior Research and Policy Manager	**11:30 AM**
6.	**Administrative Update** • Budget Update • Outreach Activities • SCPP Update • August 22 Meeting Discussion	**12:00 PM**
7.	**Decision on Preliminary Reports** Ryan Frost, Senior Research and Policy Manager Jacob White, Senior Research and Policy Manager	**1:00 PM**
8.	**Agenda Items for Future Meetings**	**2:00 PM**
9.	**Executive Session** To review the performance of a state employee and/or discuss past legal advice on the Benefit Improvement Account from the Attorney General's Office	**2:15 PM**

**Lunch is served as an integral part of the meeting.*

In accordance with RCW 42.30.110, the Board may call an Executive Session for the purpose of deliberating such matters as provided by law. Final actions contemplated by the Board in Executive Session will be taken in open session. The Board may elect to take action on any item appearing on this agenda.

BOARD MEETING MINUTES

JUNE 20, 2018 - DRAFT

TRUSTEE AND STAFF ATTENDANCE

Absent	Dennis Lawson, Chair – Central Pierce Fire and Rescue
In Attendance	Mr. Jason Granneman, Vice Chair – Clark County Sheriff's Office
In Attendance	Representative Jeff Holy – Spokane Police Department (Retired)
In Attendance	Representative Steve Bergquist – WA State Representative
In Attendance	Senator Judy Warnick – WA State Senator
In Attendance	Mr. Adé Ariwoola – City of Federal Way
Absent	Mr. Dwight Dively – King County
In Attendance	Mr. Mark Johnston – Vancouver Fire Department
In Attendance	Mr. Michael White – Valley Regional Fire Authority
In Attendance	Mr. Pat McElligott – Pierce County Fire and Rescue
In Attendance	Steve Nelsen – Executive Director
In Attendance	Tim Valencia – Deputy Director
In Attendance	Jessie Jackson – Executive Assistant
In Attendance	Jessica Burkhart – Administrative Services Manager
Absent	Tammy Harman – Death and Disability Ombudsman
In Attendance	Jacob White – Senior Research and Policy Manager
In Attendance	Ryan Frost – Research and Policy Manager
In Attendance	Tor Jernudd – Assistant Attorney General

CALL TO ORDER

The LEOFF Plan 2 Retirement Board met in the Washington State Investment conference room in Olympia, Washington on June 20, 2018. A quorum of the members was present at this meeting.

OPENING	Vice Chair Jason Granneman called the meeting to order at 9:33AM and requested those present to take a moment of silence to honor those who had fallen since the last the Board meeting.

1. APPROVAL OF MINUTES

MINUTES APPROVED	It was moved to approve the Board meeting minutes from May 25, 2018. Motion seconded. The Board approved the minutes without objection.

2. DRS REQUEST LEGISLATION

Retirement Services Manager Seth Miller from the Department of Retirement Systems, presented an overview of two issues before the Board that DRS has proposed to the Select Committee on Pension Policy for potential legislation. The proposed issues are Month-of-Death Payment Overview and Written Spousal Consent Overview. No action was taken at this time.

3. CAREER CHANGE ALTERNATIVES

Senior Research and Policy Manager Jacob White presented an overview of the current career change law to the Board. Since the passage of the Board's 2005 career change law, multiple issues have surfaced related to employers' interest in hiring LEOFF retirees into LEOFF positions. Concerns have been brought to the Board in the past where employers narrowly crafted positions with the alleged intent of avoiding membership in LEOFF 2, so they could hire a LEOFF 2 retiree. No action was taken at this time.

4. SURVIVOR OPTION ELECTION

Senior Research and Policy Manager Jacob White presented an overview of what the survivor option elections currently are for a person's retirement election. It may be considered unfair to have a member make their irrevocable retirement election for a survivor option without all the information that is important to them. No action was taken at this time.

5. MEDICAL CONDITIONS PRESUMED TO BE DUTY-RELATED

Executive Director Steve Nelsen presented an educational briefing to the Board on medical conditions that are presumed to be duty-related. Certain medical conditions are presumed to be duty-related for Worker's Compensation and LEOFF Plan 2 pension purposes. Legislation was proposed in the 2018 session that sought to expand coverage of duty-related presumption, though this bill did not pass. No action was taken at this time.

6. FUNDING METHOD OPTIONS

Senior Research and Policy Manager Ryan Frost provided a comprehensive report on funding policy background and funding method options to the Board. There are a variety of funding methods used to estimate the cost of future benefits, therefore it is up to the Board to decide which method aligns best with their funding goals. No action is needed at this time. The Board will take any action at the next meeting, considering the following policy options before the Board:

1. Continue to use 2 funding methods
   - Short term: Aggregate with 100% EANC floor
   - Long term: Aggregate with 90% EANC floor 2

2. Change long term method to Aggregate with 100% EANC floor
   - How to manage UAAL?
   - Amortization
   - Funding ratio corridor

7. ADMINISTRATIVE UPDATE

Executive Director Steve Nelsen gave his administrative update to the Board.

OUTREACH ACTIVITIES	WSCFF is holding their annual convention in Kennewick next week. Staff will attend and provide an outreach table.
PENSION FUNDING COUNCIL	The Pension Funding Council met yesterday and are working on their proposals for rates and funding ratios. No action was taken in June. They plan to take action in July.

SCPP	SCPP met yesterday. They will be having presentation in July for the smoothing method. All plans were set in 1977
L2 TECHNOLOGY UPDATE	We are moving from the Novus platform to a web based log in for meeting materials. Trustees will see this change when they receive an email regarding materials for the next meeting.
EXPECTATION INTERVIEWS	Executive Assistant Jessie Jackson will be contacting trustees to schedule an annual expectation interview with Executive Director Nelsen. Results from these interviews will be shared at the October offsite meeting.

8. CONTRIBUTION RATE SETTING OPTIONS

Senior Research and Policy Manager Ryan Frost provided an introduction to contribution rate setting, including information about the rate setting cycle and current and historical contribution rates. Setting the basic and supplemental contribution rates for the Law Enforcement Officers' and Fire Fighters' (LEOFF) Plan 2 retirement system is one of the key responsibilities of the Board. Setting appropriate contribution rates is important to maintain the financial integrity of LEOFF Plan 2 and provides stability for employers, members, and the state with respect to amounts that must be budgeted and paid into the plan. Mr. Frost reviewed the Board's strategy and policies related to contribution rates, along with other concepts that impact rate setting.

9. SUPPLEMENTAL RATE OPTIONS

Senior Research and Policy Manager Ryan Frost provided a comprehensive report about supplemental contribution rates including the purpose of the supplemental rate; supplemental rate development; supplemental rate history; and the PTSD legislation from the 2018 session.

The following options are before the Board, with any action to be taken at the July 25th meeting:

1. Adopt supplemental rate increase of 0.05% member, 0.03% employer, 0.02% state effective September 1, 2018
2. Adopt recommended supplemental rate increase, along with any other contribution rate changes, effective July 1, 2019
3. Do not adopt supplemental rate

The Board requested that staff include the financial dollar amounts of these percentages for the July presentation.

10. AGENDA ITEMS FOR FUTURE MEETINGS

Executive Director Steve Nelsen reviewed upcoming agenda items for the July meeting. Decisions on preliminary reports from this interim will be reviewed for potential action if trustees choose to move forward any issues for potential legislation. Adoption of contribution and supplemental rates will occur at the July meeting. The valuation audit results from Milliman will occur as well as an annual update to the Board from the Department of Retirement Systems.

ADJOURNMENT

There being no further business, the meeting was adjourned at 12:14 PM.

MOTION	Motion was made to adjourn. Motion was seconded. Motion passed unanimously. The next meeting of the LEOFF Plan 2 Retirement Board is scheduled for July 25th, 2018 at the Washington State Investment Board located at 2100 Evergreen Park Drive S.W. Olympia, WA 98502.

Department of Retirement Systems

Annual Update

Tracy Guerin, Director

LEOFF 2 Retirement Board

July 25, 2018

WASHINGTON STATE
Department of
Retirement Systems

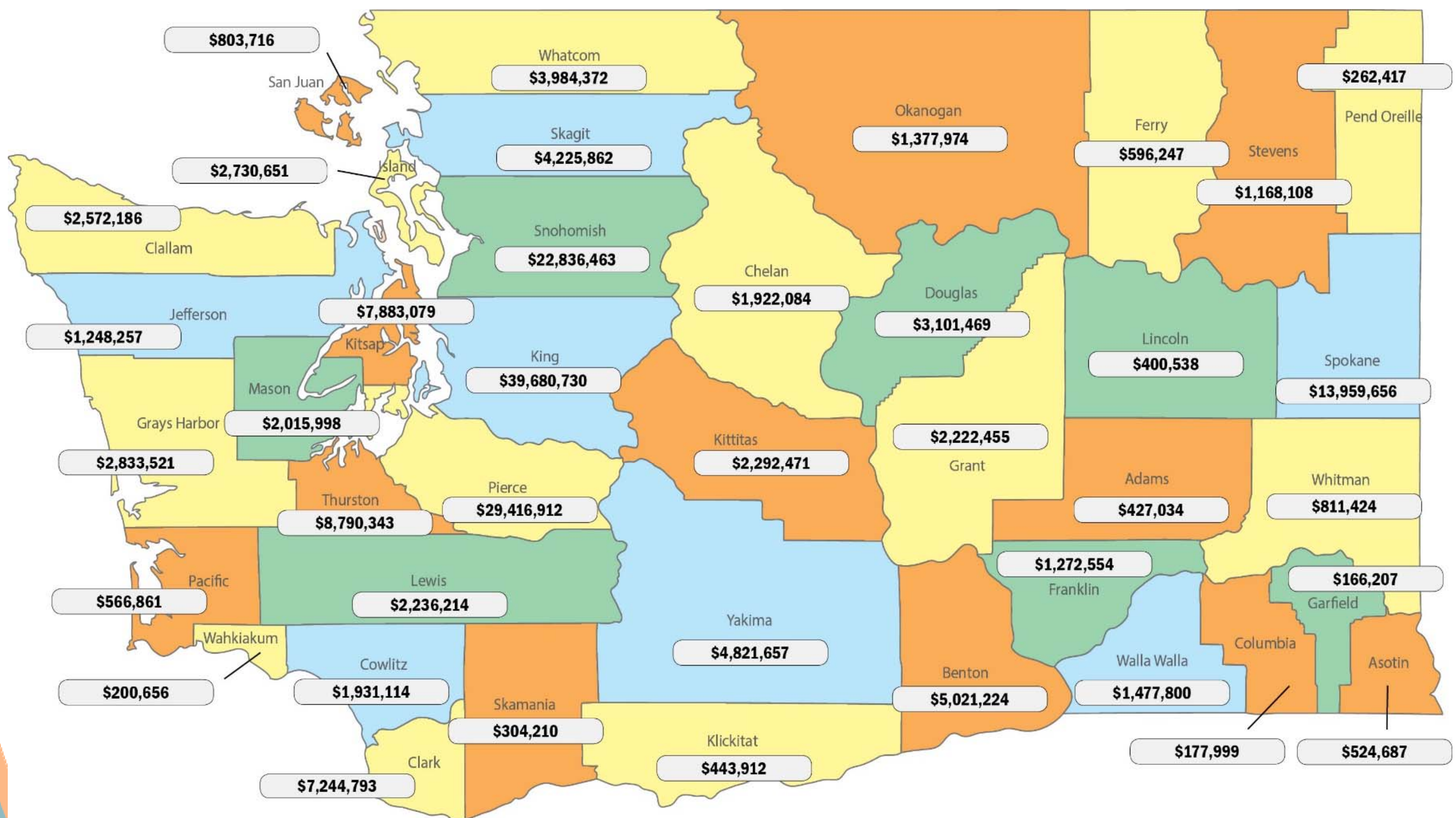
Pensions at a Glance – FY 2017

- 758,791 Plan Members
  - Active – 318,224
  - Annuitants – 178,586
  - Inactive – 261,981
- 1,345 Employers
  - State & Higher Ed
  - Counties, most cities
  - Local districts

- $105.6B in Retirement Trust Funds
- $3.6B in Contributions
  - Members – $1.4B
  - Employers – $2.2B
- $3.98B in Benefits
  - $214M LEOFF 2
  - About 88% paid in-state
  - About 2/3 from investment earnings

WASHINGTON STATE
Department of
Retirement Systems

LEOFF 2 Benefits Paid by County – FY 2017



WASHINGTON STATE
Department of Retirement Systems

DRS at a Glance – FY 2017

Operations

- 244 Team Members
- Located in one facility
- $34M annual budget
- Consistently ranked low-cost, high-service by independent benchmarking

Volume

- Phone calls – 96,952
- Walk-ins – 6,500
- Emails – 20,700
- Estimates – 19,143
- New retirements – 11,340
- Recalculations – 10,153
- Website visits – 1.3M

WASHINGTON STATE Department of Retirement Systems

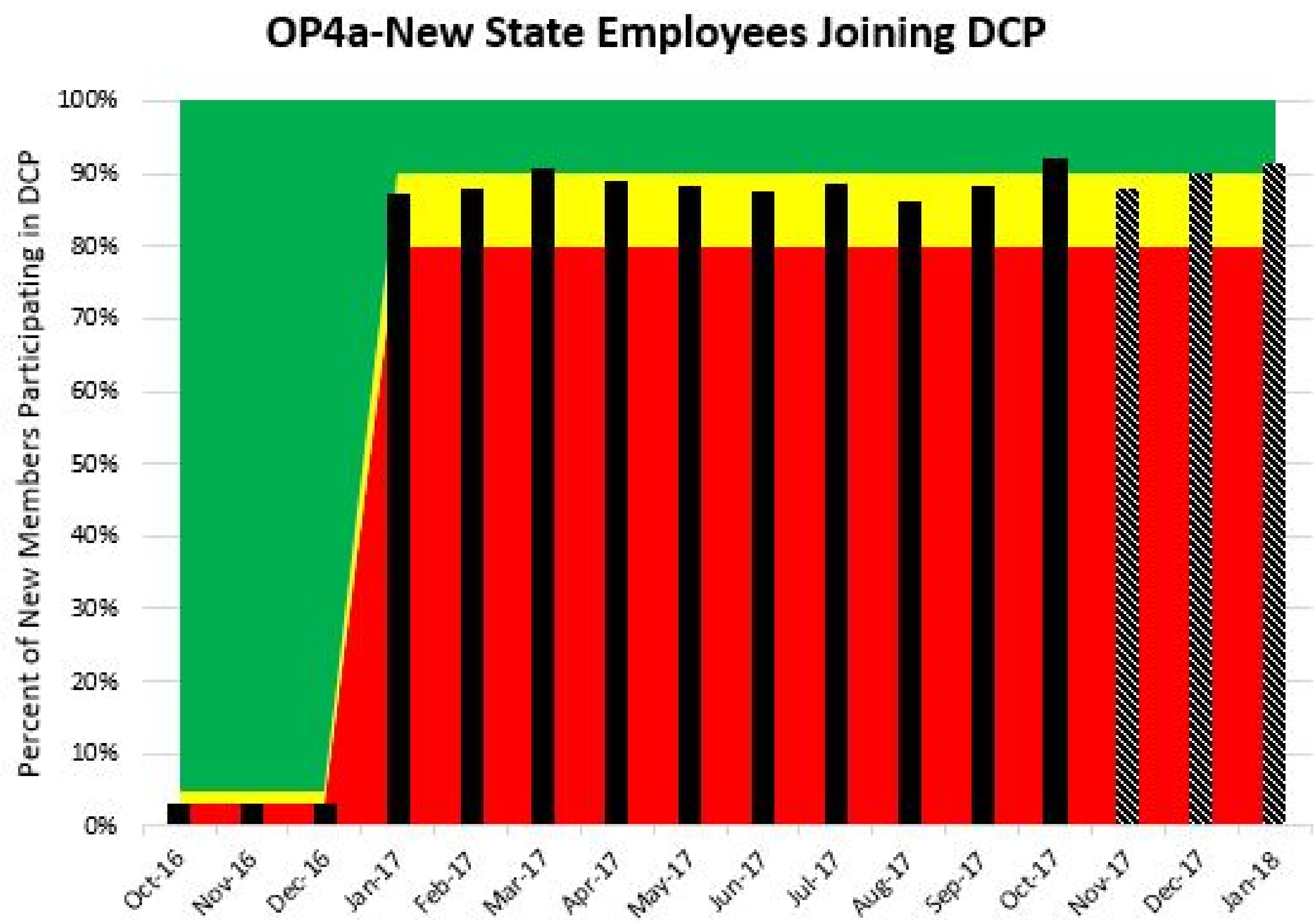
DRS at a Glance – FY 2017

- Education and Outreach

	Sessions	Attendees
Seminars	23	4,023
Benefit Summits	20	1,344
Pension Workshops	367	9,957
Benefit Fairs	171	8,935
Webinars	136	5,410

WASHINGTON STATE
Department of
Retirement Systems

DCP Automatic Enrollment



Charting Our Future

2017-19 Breakthrough Initiatives

KEY GOAL	July 2017-June 2018	July 2018-June 2019	July 2019-June 2020
Elated Customers			
Engaged Team Members	Facility Planning (George/Chris)	Facility Renovation – the next phase (George/Chris) Enterprise Change Mgmt (PMD)	
Vigilant Resource Steward or Best Practice Leader	System Modernization Planning (LT) Dolan Implementation(Legal Svcs)	Legacy System Modernization – the next phase (LT)	
Reliable Partner	ERA Build and Roll Out (PMD) Hosting Environment (Rose) Implement 2017 Legislative Projects (mix)		

WASHINGTON STATE
Department of
Retirement Systems

Implementing Legislation

- SB 6340 – One-time benefit adjustment for certain TRS 1/PERS 1 retirees
- HB 1558 – Adding additional employers and job types to membership in PSERS
- HB 2786 – Option for McNeil Island DOC/DSHS fire fighters to enter LEOFF 2
- HB 2202 (from 2017) – Option for public hospital EMTs to enter LEOFF 2

WASHINGTON STATE Department of Retirement Systems

Modernizing Our Legacy Systems

- ERA (Employer Reporting Application)
- Planning for other legacy systems

WASHINGTON STATE
Department of
Retirement Systems

Safeguarding Our Customers

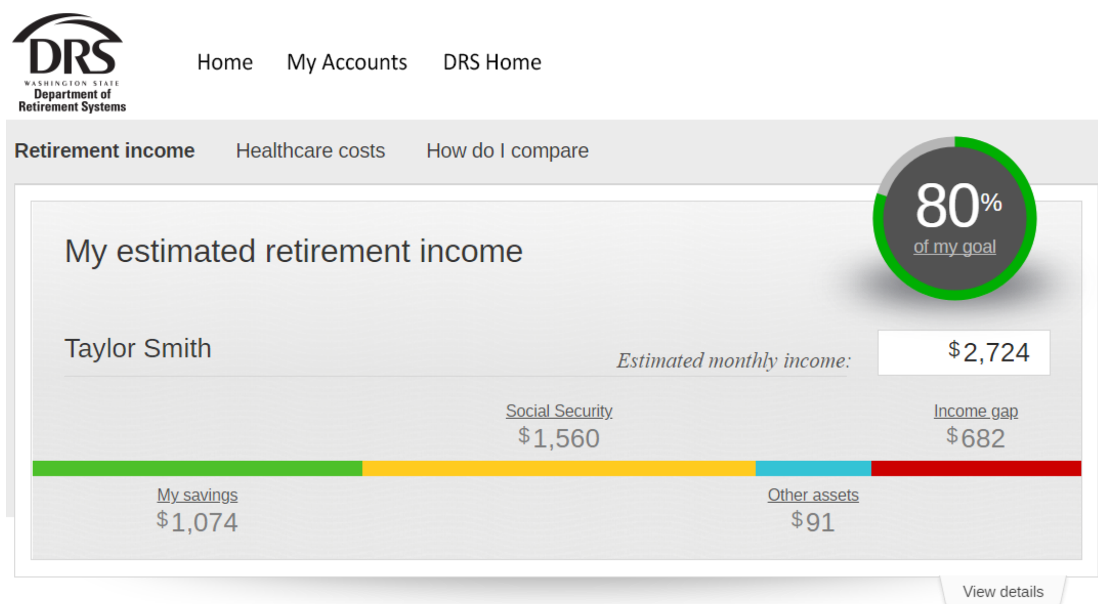
- The retirement system is entrusted with members' money and personal data
- We are committed to providing the best possible security for our customers

Washington State
Department of Retirement Systems

Strengthening Our Customers' Experience

- Three R's – Respectful, Responsive and Right
- Improving our members' journey to a successful retirement

"NextGen" for Plan 3/DCP accounts



WASHINGTON STATE
Department of Retirement Systems

Supporting Our Team Members

- Growing a culture where team members are engaged in problem-solving, process improvement

WASHINGTON STATE
Department of
Retirement Systems

Possible Legislation for 2019

- Spousal consent for survivorship selection
- Annuity purchase option
- Month-of-death payments

Questions?

WASHINGTON STATE
Department of
Retirement Systems

Note: At your request, we have provided this DRAFT Report prior to completion of our work. Because this is a draft Report, Milliman does not make any representation or warranty regarding the contents of the Report. Milliman advises any reader not to take any action in reliance on anything contained in the draft Report. All parts of this Report are subject to revision or correction prior to the release of the final Report, and such changes or corrections may be material. No distribution of this draft Report may be made without our express prior written consent.

State of Washington Pension Funding Council LEOFF 2 Board

Actuarial Audit of June 30, 2017 Actuarial Valuation

Prepared by:

Mark C. Olleman, FSA, EA, MAAA
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July 20, 2018

Mr. Shawn Merchant
Legislative & Stakeholder Relations Director
Department of Retirement Services

Mr. Steve Nelsen
Executive Director
LEOFF Plan 2 Retirement Board

Re: Actuarial Audit Report

Dear Shawn and Steve,

The enclosed report presents the findings and comments resulting from a detailed review of the June 30, 2017 actuarial valuation performed by the Office of the State Actuary (OSA) for the Pension Funding Council (PFC) and the LEOFF 2 Board. An overview of our findings is included in the Executive Summary section of the report. More detailed commentary on our review process is included in the latter sections.

All calculations for the actuarial valuation are based on the Revised Code of Washington (RCW) and the actuarial assumptions proposed by the OSA based on its 2007-2012 experience study for use in the June 30, 2017 actuarial valuation. Note that economic assumptions for inflation, wage growth, and investment rate of return were updated for the June 30, 2017 actuarial valuation.

As discussed in our report, we believe the package of actuarial assumptions and methods is reasonable (taking into account the experience of Washington State Public Retirement Systems and reasonable expectations). Nevertheless, the emerging costs will vary from those presented in this report to the extent that actual experience differs from that projected by the actuarial assumptions. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following:

- Plan experience differing from the actuarial assumptions,
- Future changes in the actuarial assumptions,
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as potential additional contribution requirements due to changes in the plan's funded status), and
- Changes in the plan provisions or accounting standards.

Due to the scope of this assignment, we did not perform an analysis of the potential range of such measurements.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the OSA's staff. This information includes information supplied to the OSA by the Department of Retirement Systems (DRS) and the Washington State Investment Board (WSIB). This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the audit results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

Milliman's work product was prepared exclusively for the Pension Funding Council and the LEOFF 2 Board for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning the operations of the Washington State Public Retirement Systems, and uses DRS's census data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

We would like to express our appreciation to the OSA's staff for their assistance in supplying the data and information on which this report is based.

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

We respectfully submit the following report, and we look forward to discussing it with you.

Sincerely,

Mark C. Olleman, FSA, EA, MAAA
Consulting Actuary

Nick J. Collier, ASA, EA, MAAA
Consulting Actuary

Daniel R. Wade, FSA, EA, MAAA
Consulting Actuary

MCO/NJC/DRW/nlo

Table of Contents

Section 1 Summary of the Findings

Purpose and Scope of the Actuarial Audit

This actuarial audit reviews the June 30, 2017 actuarial valuation performed by the Office of the State Actuary (OSA). The purpose of this audit is to verify that the results of the valuation are accurate and that the assumptions the valuation is based upon are reasonable. The following tasks were performed in this audit:

- Evaluation of the data used in the valuation
- Full independent replication of the key valuation results
- Evaluation of the reasonableness of the assumptions used in the valuation
- Analysis of valuation results and reconciliation of material differences (if any)
- Analysis of the written work product

Audit Conclusion

Overall

The results of this audit are very positive. Specifically, we want to highlight the following:

- **Reasonable Assumptions:** We believe that all of the recommended assumptions used to value liabilities are reasonable. The inflation, wage growth, and investment rate of return assumptions were decreased for the June 30, 2017 actuarial valuation. We believe that the updated assumptions better reflect current expectations based on capital market assumptions.
- **Contributions toward Funding:** Washington State has funding that is superior to that of most statewide systems. The use of the aggregate actuarial cost method, along with relatively short amortization periods for PERS and TRS Plans 1, limits the contributions deferred to future generations in comparison to what is done in most other states.
- **Accurate Calculations:** Our independent calculations matched OSA's closely in all material aspects of the valuation.

Actuarial Valuation

Based upon our review of the June 30, 2017 actuarial valuation, we found the actuarial work performed by OSA was reasonable, appropriate, and accurate. We closely matched the assets, liabilities, and contribution rates calculated by OSA.

Statement of Key Findings

Membership Data

We performed tests on both the raw data supplied by the Department of Retirement Systems (DRS) and the processed data used by the OSA in the June 30, 2017 actuarial valuation. We feel that there is an excellent match between the data supplied by DRS and the data used by OSA. Based on this review, we feel the individual member data used is complete. A summary is shown in the table below:

All Plans	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	317,677	317,677	100.0%
Total Salaries (millions)	$ 20,031	$ 20,033	100.0%
Average Age	46.8	46.8	100.0%
Average Service	11.5	11.5	100.0%
Average Salary	$ 63,054	$ 63,062	100.0%
Retirees and Survivors			
Total Number	177,685	177,685	100.0%
Average Monthly Pension	$ 1,897	$ 1,895	100.1%
Terminated Members			
Total Number Vested	61,519	61,519	100.0%
Total Number Non-Vested	135,108	135,109	100.0%

Actuarial Value of Assets

We have reviewed the calculations for the actuarial value of assets used for each plan in the June 30, 2017 valuation. We found the calculations to be reasonable and the methodology to be appropriate and in compliance with Actuarial Standards of Practice. The actuarial value of assets is discussed in more detail in Section 3 of this report.

Actuarial Liabilities

We independently calculated the Present Value of Benefits, Normal Cost, and Actuarial Accrued Liability under the Entry Age Normal actuarial cost method for all systems. We found that all significant benefit provisions were accounted for in an accurate manner, the actuarial assumptions and methods are being applied as reported, and that our total liabilities matched those calculated by OSA closely. This was true both in aggregate and by individual plan.

A summary of the results for each system is shown in the table below. Further breakdowns are shown in Section 4.

	OSA	Milliman	Ratio OSA/Milliman
Present Value All Future Benefits (in $Millions)			
PERS 1	$ 12,307.0	$ 12,304.4	100.0%
PERS 2/3	45,200.0	45,000.8	100.4%
TRS 1	8,841.7	8,889.8	99.5%
TRS 2/3	17,513.6	17,404.5	100.6%
SERS 2/3	6,485.8	6,439.0	100.7%
PSERS 2	995.7	982.9	101.3%
LEOFF 1	4,123.5	4,137.3	99.7%
LEOFF 2	13,672.1	13,689.2	99.9%
WSPRS	1,448.1	1,449.8	99.9%
Total PVB	**$ 110,587.3**	**$ 110,297.7**	**100.3%**

In the process of comparing liability calculations with OSA, we noted a minor difference (less than $1 million) in the determination of the benefit for deferred Washington State Patrol (WSP) members with portability. OSA provided us with updated numbers to reflect this small change, and we have reflected that change in the OSA numbers shown in this report. It is our understanding that the OSA will reflect this change in the final 2017 valuation.

Funding

We reviewed the funding methods and their application. We find them reasonable and consistent with the Actuarial Standards of Practice and the objectives stated in RCW 41.45.010. Based on the Systems' funding methods and assumptions, we believe the employer contribution rates for each membership class are appropriately calculated.

When we used the liabilities, present value of future salaries, and actuarial assets calculated by OSA, we matched OSA's contribution rates.

When we used the liabilities, present value of future salaries, and actuarial assets calculated by Milliman, the results were close to OSA's calculated contribution rates, as shown below.

Employer Contribution Rates

	OSA	Milliman	Difference OSA - Milliman
Employer Contribution Rates (Percent of Member Pay)			
PERS 1/2/3	12.68%	12.67%	0.01%
TRS 2/3	15.33%	15.20%	0.13%
SERS 2/3	13.01%	12.91%	0.10%
PSERS 2	11.96%	11.85%	0.11%
WSPRS	22.13%	22.38%	-0.25%
LEOFF 1	0.00%	0.00%	0.00%
LEOFF 2*	4.64%	4.63%	0.01%

Member Contribution Rates

	OSA	Milliman	Difference OSA - Milliman
Member Contribution Rates (Percent of Member Pay)			
PERS 1	6.00%	6.00%	0.00%
PERS 2	7.90%	7.99%	-0.09%
TRS 1	6.00%	6.00%	0.00%
TRS 2	7.77%	7.75%	0.02%
SERS 2	8.25%	8.25%	0.00%
PSERS 2	7.20%	7.19%	0.01%
WSPRS	8.45%	8.45%	0.00%
LEOFF 1	0.00%	0.00%	0.00%
LEOFF 2*	7.74%	7.71%	0.03%

** Based on a LEOFF 2 contribution rate structure of 90% of Entry Age Normal Cost rate with a 50%/30%/20% share for the member, employer and the state, respectively.*

Funding is discussed in more detail in Section 5.

Actuarial Assumptions

We reviewed the assumptions used in the valuation and found them to be reasonable. A complete analysis of the demographic assumptions was done with the 2014 actuarial audit, which also included an audit of the 2007-2012 Demographic Experience Study. For this audit, we did a brief review of the assumption for future mortality improvement, as the Retirement Plans Experience Committee (RPEC) of the Society of Actuaries (SoA) has issued two more recent tables, which feature two-dimensional assumption to allow for disparate improvements by age and calendar year. We continue to believe that 100% of Scale BB is a reasonable assumption to use. We do not believe that the additional complexity of the new tables leads to a materially better prediction of life expectancies in the context of pension funding.

The economic assumptions used were based on the OSA's 2017 Report on Financial Condition and Economic Experience Study completed in August 2017. While a full audit of that report is beyond the scope of our assignment, we feel an actuarial audit would be incomplete without a review of the important economic assumptions used in the actuarial valuation.

We have the following comments regarding the economic assumptions:

- The expected return assumption of 7.40% recommended by the OSA is reasonable based on the future expectations of WSIB and reflecting the 2.75% inflation assumption. Although we also consider the 7.50% assumption used for non-LEOFF 2 plans to be reasonable, we believe that 7.40% is a slightly more realistic assumption and recommend that the investment return assumption continue to decrease. It should be noted that Milliman is generally recommending return assumptions of less than 7.40% to our retained clients.
- The inflation assumption of 2.75% is reasonable, as is the real wage growth assumption of 0.75% for productivity. The general salary increase assumption of 3.50% is the sum of these two assumptions.

Actuarial Assumptions (continued)

- As prescribed, OSA assumes annual growth in active membership varying by plan from 0.95% to 1.25%. Most public sector pension plans assume no future growth in system membership. Please note that this assumption only impacts the amortization of the Plan 1 Unfunded Actuarial Accrued Liability (UAAL) over 10 years. The small membership growth assumption over the 10-year amortization period has a modest impact on the calculated contribution rates.

Review of Preliminary Report

Because the final 2017 Actuarial Valuation reports have not been completed at this time, we base the comments on the preliminary report. Overall, we found OSA's report to be very thorough. We have made two comments for consideration for the upcoming reports that may enhance an outside reader's understanding. These comments are related to additional disclosure and do not impact any of the actuarial calculations. Please see Section 6 of this report for more information about our comments.

Recommendations from Prior Audit

We have also reviewed the comments from our prior actuarial audit and reported on the incorporation of those comments. Our one recommendation pertaining to the valuation calculations was implemented.

Recommendations and Other Considerations

We are recommending one change to the preliminary actuarial valuation. We have also provided a few recommendations for OSA, PFC, and the LEOFF 2 Board to consider in the future, as listed below and discussed in further detail in the body of this report.

Recommended Changes to the 2017 Valuation

We recommend one change to the preliminary 2017 valuation, Our understanding is that this recommendation will be reflected in the final 2017 valuation. This will result in a small (less than $1 million) reduction in the calculated liabilities for WSP compared to the preliminary 2017 valuation. OSA provided us with updated numbers to reflect this small change, and we have reflected that change in the OSA numbers shown in this report.

- **Assumed salary increases for WSP deferred members with portability** – It is assumed that there will be a one-time increase in salaries for active WSP members, in addition to the assumed annual increase, to reflect the expanded definition of pensionable overtime that was recently enacted. In its preliminary valuation, OSA assumed this increase applied to WSP deferred members with portability. OSA reviewed this assumption and decided not to apply it to deferred members in their final 2017 valuation.

Recommended Changes for Future Valuations with a Material Financial Impact

None

Recommended Changes for Future Valuations and Experience Studies with a Non-Material Financial Impact

We recommend that the following changes be considered.

- **Member contribution rate for savings fund accrual assumption** – We recommend this assumption be reviewed in light of the greater weight this assumption has in the short term.
- **Treatment of WSP deferred members with portability** – For valuation purposes, a vested member who has left active WSP service and is now working with another employer and eligible for portability is treated as an active member with no additional service accrual. This results in a later assumed retirement than if the member did not have portability. This may be a reasonable assumption, but given the member's benefit is more valuable if the member retires at earliest eligibility, we believe this approach should be reviewed with the experience study.
- **Recommendations from Prior Audit (see end of Section 6):** The one prior recommendation pertaining to the valuation calculations was implemented. There are recommendations from the 2014 audit for the next experience study which should be considered at that time.

Recommended Changes for Future Valuations and Experience Studies with No Financial Impact

We recommend that OSA consider the following actions for future valuations and the experience studies they are based on:

- **Information in Report (see Comments Regarding OSA's Reports in Section 6).** We have suggested additional disclosure of two items, as described in Section 6.

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Section 2 Membership Data

Audit Conclusion

We performed tests on both the raw data supplied by DRS and the processed data used by OSA in the June 30, 2017 actuarial valuation. We found that the data used by OSA was consistent with the data supplied by DRS.

Based on this review, we feel the individual member data used is appropriate and complete.

Comments

Overall, the data process appears to be thorough and accurate. We would add the following comments:

- Raw Data: OSA provided us with the same files that were given to them by DRS for use in the actuarial valuation.

  Completeness: The data contained all the necessary fields to perform the actuarial valuation.

  Quality: Although we did not audit the data at the source, we performed some independent checks to confirm the overall reasonableness of the data. We compared the total retiree and beneficiary benefit amounts with the actual benefit payments made, as reported in the asset statements.

  We also compared the total active member compensation on the DRS data with the estimated active payroll for 2016-2017. The actual member contribution amounts in the asset statements provided by DRS were divided by the applicable contribution rates for the prior year for each plan. This results in an estimated payroll for each plan. Based on this analysis, we found the compensation data to be reasonable.

- Parallel Data Processing: We performed independent edits on the raw data provided by DRS and then compared our results with the valuation data used by OSA, as summarized in the preliminary participant data summary on the OSA's website. We found our results to be consistent.

  Our results do not match exactly. This is understandable, as some adjustments were made to annualize salary for those with less than one year of service during the valuation period and other adjustments were made for a few data elements outside of the expected range. Overall, each key data component matched well within an acceptable level and we believe the individual member data used by the OSA was appropriate for valuation purposes.

Comments
(continued)

A summary of the data for each plan is shown in Exhibit 2-1. In all cases, the summarized totals for our edited data matched those for OSA's valuation data closely. The "Milliman" column reflects the DRS data after adjustments by Milliman. The "OSA" column reflects the actual data used in the OSA's valuation as summarized in the preliminary participant data summary on the OSA's website.

Exhibit 2-1
Member Statistics as of June 30, 2017

All Plans	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	317,677	317,677	100.0%
Total Salaries (millions)	$ 20,031	$ 20,033	100.0%
Average Age	46.8	46.8	100.0%
Average Service	11.5	11.5	100.0%
Average Salary	$ 63,054	$ 63,062	100.0%
Retirees and Survivors			
Total Number	177,685	177,685	100.0%
Average Monthly Pension	$ 1,897	$ 1,895	100.1%
Terminated Members			
Total Number Vested	61,519	61,519	100.0%
Total Number Non-Vested	135,108	135,109	100.0%

Comments
(continued)

Exhibit 2-1 (continued)
Member Statistics as of June 30, 2017

PERS 1	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	2,597	2,597	100.0%
Total Salaries (millions)	$ 163	$ 163	100.2%
Average Age	65.1	65.1	100.0%
Average Service	25.7	25.7	100.0%
Average Salary	$ 62,610	$ 62,613	100.0%
Retirees and Survivors			
Total Number	48,111	48,111	100.0%
Average Monthly Pension	$ 2,048	$ 2,044	100.2%
Terminated Members			
Total Number Vested	660	660	100.0%
Total Number Non-Vested	3,018	3,018	100.0%

PERS 2	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	121,934	121,934	100.0%
Total Salaries (millions)	$ 7,926	$ 7,927	100.0%
Average Age	47.9	47.9	100.0%
Average Service	12.1	12.1	100.0%
Average Salary	$ 65,002	$ 65,011	100.0%
Retirees and Survivors			
Total Number	46,537	46,537	100.0%
Average Monthly Pension	$ 1,592	$ 1,591	100.1%
Terminated Members			
Total Number Vested	27,796	27,796	100.0%
Total Number Non-Vested	107,483	107,483	100.0%

Comments
(continued)

Exhibit 2-1 (continued)
Member Statistics as of June 30, 2017

PERS 3		OSA		Milliman	Ratio OSA/Milliman
Active Members					
Total Number		34,943		34,943	100.0%
Total Salaries (millions)	$	2,090	$	2,090	100.0%
Average Age		43.3		43.3	100.0%
Average Service		8.4		8.4	100.0%
Average Salary	$	59,809	$	59,821	100.0%
Retirees and Survivors					
Total Number		4,262		4,262	100.0%
Average Monthly Pension	$	890	$	889	100.1%
Terminated Members					
Total Number Vested		5,598		5,598	100.0%
Total Number Non-Vested		N/A		N/A	100.0%

TRS 1		OSA		Milliman	Ratio OSA/Milliman
Active Members					
Total Number		698		698	100.0%
Total Salaries (millions)	$	61	$	61	100.0%
Average Age		66.1		66.1	100.0%
Average Service		32.3		32.3	100.0%
Average Salary	$	87,446	$	87,423	100.0%
Retirees and Survivors					
Total Number		34,151		34,151	100.0%
Average Monthly Pension	$	2,178	$	2,175	100.1%
Terminated Members					
Total Number Vested		187		187	100.0%
Total Number Non-Vested		311		311	100.0%

Comments
(continued)

Exhibit 2-1 (continued)
Member Statistics as of June 30, 2017

TRS 2	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	18,747	18,747	100.0%
Total Salaries (millions)	$ 1,244	$ 1,244	100.0%
Average Age	41.7	41.7	100.0%
Average Service	7.7	7.7	100.0%
Average Salary	$ 66,374	$ 66,383	100.0%
Retirees and Survivors			
Total Number	5,060	5,060	100.0%
Average Monthly Pension	$ 1,924	$ 1,923	100.1%
Terminated Members			
Total Number Vested	2,612	2,612	100.0%
Total Number Non-Vested	6,300	6,301	100.0%

TRS 3	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	53,780	53,780	100.0%
Total Salaries (millions)	$ 4,196	$ 4,196	100.0%
Average Age	46.2	46.2	100.0%
Average Service	14.1	14.1	100.0%
Average Salary	$ 78,023	$ 78,013	100.0%
Retirees and Survivors			
Total Number	10,264	10,264	100.0%
Average Monthly Pension	$ 1,139	$ 1,138	100.1%
Terminated Members			
Total Number Vested	8,914	8,914	100.0%
Total Number Non-Vested	N/A	N/A	100.0%

Comments
(continued)

Exhibit 2-1 (continued)
Member Statistics as of June 30, 2017

SERS 2	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	26,697	26,697	100.0%
Total Salaries (millions)	$ 885	$ 886	99.9%
Average Age	49.8	49.8	100.0%
Average Service	9.1	9.1	100.0%
Average Salary	$ 33,153	$ 33,181	99.9%
Retirees and Survivors			
Total Number	8,216	8,216	100.0%
Average Monthly Pension	$ 879	$ 879	100.0%
Terminated Members			
Total Number Vested	5,914	5,914	100.0%
Total Number Non-Vested	13,740	13,740	100.0%

SERS 3	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	33,715	33,715	100.0%
Total Salaries (millions)	$ 1,127	$ 1,128	99.9%
Average Age	49.5	49.5	100.0%
Average Service	9.9	9.9	100.0%
Average Salary	$ 33,436	$ 33,454	99.9%
Retirees and Survivors			
Total Number	7,725	7,725	100.0%
Average Monthly Pension	$ 480	$ 480	100.0%
Terminated Members			
Total Number Vested	8,403	8,403	100.0%
Total Number Non-Vested	N/A	N/A	100.0%

Comments
(continued)

Exhibit 2-1 (continued)
Member Statistics as of June 30, 2017

PSERS 2		OSA		Milliman	Ratio OSA/Milliman
Active Members					
Total Number		5,822		5,822	100.0%
Total Salaries (millions)	$	362	$	362	99.9%
Average Age		40.1		40.1	100.0%
Average Service		6.0		6.0	100.0%
Average Salary	$	62,247	$	62,255	100.0%
Retirees and Survivors					
Total Number		167		167	100.0%
Average Monthly Pension	$	745	$	745	100.0%
Terminated Members					
Total Number Vested		468		468	100.0%
Total Number Non-Vested		2,240		2,240	100.0%

LEOFF 1		OSA		Milliman	Ratio OSA/Milliman
Active Members					
Total Number		40		40	100.0%
Total Salaries (millions)	$	5	$	5	100.0%
Average Age		65.8		65.8	100.0%
Average Service		41.1		41.1	100.0%
Average Salary	$	114,135	$	114,135	100.0%
Retirees and Survivors					
Total Number		7,228		7,228	100.0%
Average Monthly Pension	$	4,181	$	4,181	100.0%
Terminated Members					
Total Number Vested		-		-	-
Total Number Non-Vested		29		29	100.0%

Comments
(continued)

Exhibit 2-1 (continued)
Member Statistics as of June 30, 2017

LEOFF 2	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	17,694	17,694	100.0%
Total Salaries (millions)	$ 1,879	$ 1,879	100.0%
Average Age	43.2	43.2	100.0%
Average Service	14.2	14.2	100.0%
Average Salary	$ 106,169	$ 106,184	100.0%
Retirees and Survivors			
Total Number	4,851	4,851	100.0%
Average Monthly Pension	$ 3,894	$ 3,894	100.0%
Terminated Members			
Total Number Vested	863	863	100.0%
Total Number Non-Vested	1,917	1,917	100.0%

WSPRS 1	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	464	464	100.0%
Total Salaries (millions)	$ 48	$ 48	100.8%
Average Age	48.2	48.2	100.0%
Average Service	21.4	21.4	100.0%
Average Salary	$ 102,624	$ 102,624	100.0%
Retirees and Survivors			
Total Number	1,113	1,113	100.0%
Average Monthly Pension	$ 4,287	$ 4,287	100.0%
Terminated Members			
Total Number Vested	73	73	100.0%
Total Number Non-Vested	17	17	100.0%

Comments
(continued)

Exhibit 2-1 (continued)
Member Statistics as of June 30, 2017

WSPRS 2	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	546	546	100.0%
Total Salaries (millions)	$ 45	$ 45	99.5%
Average Age	33.7	33.7	100.0%
Average Service	7.3	7.3	100.0%
Average Salary	$ 82,863	$ 82,863	100.0%
Retirees and Survivors			
Total Number	-	-	100.0%
Average Monthly Pension	$ -	$ -	100.0%
Terminated Members			
Total Number Vested	31	31	100.0%
Total Number Non-Vested	53	53	100.0%

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Section 3 Actuarial Value of Assets

Audit Conclusion

We have reviewed the calculations for the actuarial value of assets used for each plan in the June 30, 2017 valuation. We found the calculations to be reasonable and the methodology to be appropriate and in compliance with Actuarial Standards of Practice.

Comments

The method used to determine the actuarial value of assets smooths investment gains and losses by reflecting a portion of the difference between the actual market value of assets and the expected market value for every fiscal year. For each year and each plan, a base for smoothed recognition over time is established equal to that difference.

The larger the deviation from expectation, the longer the recognition period for that base, with a level dollar amount recognized for each year of that period. For the largest deviations (more than 7% above or below the assumption), the gains or losses are recognized over eight years, whereas when the actual return is within 1% of the assumption, the gain or loss is recognized immediately. Additionally, a “corridor” is applied to make sure that the smoothed actuarial value of assets stays within 30% of the market value of assets.

Although it is unusual to recognize investment gains and losses over different periods, we believe it is a reasonable approach since the maximum smoothing period is reasonable and the method allows the actuarial value of assets to converge to market more rapidly if gains and losses are small.

We independently calculated the actuarial value of assets for each plan based on financial information provided by DRS and the Washington State Investment Board (WSIB). DRS and WSIB both provide market values of assets by plan. Note that there are small differences between the values provided by DRS and WSIB. Per prior conversations with OSA, the DRS values are used for the market value of assets. The WSIB data is only used to determine the monthly cash flows (contributions minus benefit payments) needed to calculate the expected value of assets.

Comments (continued)

We used the information from DRS, WSIB, along with the outstanding gain/loss bases as published in the 2016 Actuarial Valuation Report. With this information and the asset methodology, our independent calculations were within less than 0.05% of the OSA's calculation for every plan.

See the following exhibit for a comparison.

Exhibit 3-1
Comparison of Actuarial Value of Assets by Plan

AVA (millions)	OSA	Milliman	Ratio OSA/Milliman
PERS			
Plan 1	$ 7,042	$ 7,040	100.0%
Plan 2/3 (DB)	$ 33,191	$ 33,184	100.0%
TRS			
Plan 1	$ 5,371	$ 5,369	100.0%
Plan 2/3 (DB)	$ 11,885	$ 11,882	100.0%
SERS			
Plan 2/3 (DB)	$ 4,613	$ 4,612	100.0%
PSERS			
Plan 2	$ 480	$ 480	100.0%
LEOFF			
Plan 1	$ 5,403	$ 5,402	100.0%
Plan 2	$ 11,037	$ 11,035	100.0%
WSPRS			
Plan 1 & 2	$ 1,144	$ 1,144	100.0%

As discussed above, OSA uses an asset smoothing method to reduce volatility. A five-year smoothing method is the most commonly used method among large public retirement systems. OSA uses a variable length of smoothing period, with eight years as the longest possible period. We believe the use of an asset smoothing method is appropriate, and we generally recommend this to our clients, particularly in systems where contribution rates change annually or biennially.

When a smoothing method is used, the actuarial value of assets will deviate from the market value of assets. Many public retirement systems apply a corridor so that the actuarial value of assets is not allowed to deviate from the market value by more than a certain percentage. The potential downside of using a corridor is that it can cause significant contribution rate volatility when the assets are outside the corridor. OSA applies a corridor of 30% (if applicable).

Comments (continued)

Typically, the longer the recognition period, the more important it is to have a corridor. We believe that the eight-year smoothing period, coupled with the application of the corridor, is in compliance with ASOP No. 44, the actuarial standard of practice for the selection and use of asset valuation methods for pension valuations.

In October 2014, the Conference of Consulting Actuaries (CCA) issued a white paper entitled *Actuarial Funding Policies and Practices for Public Pension Plans* which includes guidelines for asset smoothing methodologies. This paper was drafted in part as a response to the void left by the fact that the new applicable statements of the Governmental Accounting Standards Board (GASB) no longer specify the parameters for an Annual Required Contribution (ARC). The CCA was comprised of a group of public plan actuaries from the major firms in public plan practice who met more than 24 times over two years.

OSA’s method of smoothing with recognition periods eight years or less, along with a 30% corridor, falls in the “Acceptable Practices” category under these guidelines (categories described below for reference). OSA’s method is almost inside of the CCA “Model Practices” category. That could be achieved with a smoothing period of five years or fewer with a 50% corridor or a smoothing period of seven years or fewer with a 40% corridor. Note that the “Model Practices” are not intended to be “best practices,” but are the ones considered to be most consistent with the Level Cost Allocation Model. Therefore, this is not a recommendation to change, just an observation.

OSA’s method is consistent with all of the CCA specific policy objectives and considerations for an asset smoothing method. Its consistency with the primary objectives is shown by the following:

- All components of the asset method are specified: return subject to smoothing, smoothing period, corridor, and method of recognizing deferred amounts.
- It is unbiased compared to market value.
- It does not selectively reset to market when market value is greater than actuarial value.
- Realized and unrealized gains and losses are treated the same.
- It is consistent with the Actuarial Standard of Practice No. 44 concept of being likely to return to market in a reasonable period and likely to stay within a reasonable range of market value.

We feel that the OSA’s method is reasonable and consistent with the policy objectives of the State which are described in RCW 41.45.010 as being “to provide a dependable and systematic process for funding the benefits provided to members and retirees” of the Washington State Retirement Systems.

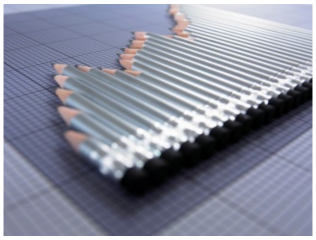
Comments (continued)

For reference, the categories in the CCA guidelines are shown below.

Categories Under CCA Guidelines	
Model Practices	Those practices most consistent with the Level Cost Allocation Model (LCAM).
Acceptable Practices	Generally those which, while not consistent with the LCAM, are well established in practice and typically do not require additional analysis.
Acceptable Practices with Conditions	May be acceptable in some circumstances either to reflect different policy objectives or on the basis of additional analysis.
Non-Recommended Practices	Systems using these practices should acknowledge the policy concerns identified in the CCA Guidelines or acknowledge they reflect different policy objectives.
Unacceptable Practices	No description provided by CCA, but implication is that these should not be used.

Section 4 Actuarial Liabilities

Audit Conclusion



We independently calculated the present value of future benefits and future salaries and the Entry Age Normal Cost rates for the Washington State Public Retirement Systems. We found that all significant benefit provisions were accounted for in an accurate manner and the actuarial assumptions and methods are being applied correctly. Our total liabilities closely matched those calculated by OSA. This was true both in aggregate and by System.

Note that there will always be differences in the calculated liabilities when different software is used by different actuaries; however, the results should not deviate significantly. The level of consistency we found in this audit provides a high level of assurance that the results of the valuation accurately reflect the liabilities of the Washington State Public Retirement Systems based on the plan provisions, assumptions, methods, and census and financial data.

Comments

We incorporated the following information into our valuation system:

- **Data** – We used the same valuation data used by OSA. As discussed in Section 2, we confirmed that this data was consistent with the data provided by DRS.
- **Assumptions and Methods** – We used the assumptions and methods used by OSA for the June 30, 2017 actuarial valuation. This was supplemented by discussions between OSA and Milliman on the technical application of these methods.
- **Benefit Provisions** – We obtained this information from the Revised Code of Washington and various member handbooks.

We then performed an independent parallel valuation as of June 30, 2017. Based on this valuation, we completed a detailed comparison of the Present Value of Future Benefits (PVFB) computed in our independent valuation and the amounts calculated by OSA. Exhibit 4-1 shows a summary of this analysis broken down by benefit type. Exhibit 4-2 shows a summary of this analysis broken down by System. The results were reasonable, and our calculated PVFB values match closely with those calculated by OSA.

Comments
(continued)

Exhibit 4-1
Present Value of Future Benefits by Benefit Type

(in $Millions)	All Systems in Aggregate OSA	Milliman	O / M Ratio
Present Value All Future Benefits			
Retirement	56,017.1	55,608.4	100.7%
Termination	$2,475.8	2,464.5	100.5%
Death	$1,078.8	1,091.3	98.9%
Disability	$610.5	599.9	101.8%
Total Actives	**$60,182.2**	**$59,764.1**	**100.7%**
Terminated Vested	$4,962.9	$4,906.3	101.2%
Terminated Not Vested	369.7	369.5	100.1%
Total Inactive, not in Payment	**$5,332.6**	**$5,275.8**	**101.1%**
Retired	$40,337.0	$40,472.9	99.7%
Disabled	$2,159.3	2,159.9	100.0%
Survivor	$2,437.7	2,486.3	98.0%
LOP Liability	$138.4	138.8	99.7%
Total Annuitants	**$45,072.4**	**$45,257.9**	**99.6%**
Total Members	**$110,587.2**	**$110,297.8**	**100.3%**

Comments
(continued)

Exhibit 4-2
Present Value of Future Benefits by System

	OSA	Milliman	Ratio OSA/Milliman
Present Value All Future Benefits (in $Millions)			
PERS 1			
Active Members	$ 860.8	$ 830.1	103.7%
Inactive Members	11,446.2	11,474.3	99.8%
Total	$ 12,307.0	$ 12,304.4	100.0%
PERS 2/3			
Active Members	$ 30,342.7	$ 30,081.4	100.9%
Inactive Members	14,857.4	14,919.3	99.6%
Total	$ 45,200.0	$ 45,000.8	100.4%
TRS 1			
Active Members	$ 327.8	$ 332.0	98.8%
Inactive Members	8,513.9	8,557.8	99.5%
Total	$ 8,841.7	$ 8,889.8	99.5%
TRS 2/3			
Active Members	$ 12,968.0	$ 12,875.2	100.7%
Inactive Members	4,545.5	4,529.3	100.4%
Total	$ 17,513.6	$ 17,404.5	100.6%

Comments
(continued)

Exhibit 4-2 (continued)
Present Value of Future Benefits by System

	OSA	Milliman	Ratio OSA/Milliman
Present Value All Future Benefits (in $Millions)			
SERS 2/3			
Active Members	$ 4,213.6	$ 4,163.8	101.2%
Inactive Members	2,272.2	2,275.2	99.9%
Total	$ 6,485.8	$ 6,439.0	100.7%
PSERS 2			
Active Members	$ 932.2	$ 920.2	101.3%
Inactive Members	63.5	62.8	101.1%
Total	$ 995.7	$ 982.9	101.3%
LEOFF 1			
Active Members	$ 53.0	$ 52.2	101.5%
Inactive Members	4,070.6	4,085.2	99.6%
Total	$ 4,123.5	$ 4,137.3	99.7%
LEOFF 2			
Active Members	$ 9,873.2	$ 9,891.9	99.8%
Inactive Members	3,798.9	3,797.3	100.0%
Total	$ 13,672.1	$ 13,689.2	99.9%
WSPRS			
Active Members	$ 611.1	$ 617.3	99.0%
Inactive Members	837.1	832.5	100.5%
Total	$ 1,448.1	$ 1,449.8	99.9%

Comments
(continued)

We also looked at the Entry Age Normal Accrued Liability (EAN AL). EAN AL is used by OSA to measure the funded ratios and is described in Section 5 of this report. Exhibit 4.3 shows the audit had a good match of EAN AL. The EAN AL is consistent with the requirements of GASB No. 67 and GASB No. 68.

Exhibit 4-3
Comparison of Entry Age Normal Accrued Liability

	OSA	Milliman	Ratio OSA/Milliman
Entry Age Normal Accrued Liability (EAN AL) (in $Millions)			
PERS 1	$ 12,235.9	$ 12,243.1	99.9%
PERS 2/3	37,192.8	36,817.8	101.0%
TRS 1	8,821.2	8,870.8	99.4%
TRS 2/3	13,094.9	13,000.3	100.7%
SERS 2/3	5,241.6	5,236.8	100.1%
PSERS 2	505.5	492.9	102.6%
LEOFF 1	4,121.0	4,137.0	99.6%
LEOFF 2	10,159.5	10,200.3	99.6%
WSPRS	1,243.7	1,258.0	98.9%
Total EAN AL	**$ 92,616.2**	**$ 92,257.0**	**100.4%**

Lastly, we looked at both the present value of future salaries and the Entry Age Normal Cost (EANC) rates, which are used in the determination of the minimum contribution rates.

Exhibit 4-4
Present Value of Future Salaries and EANC Rate

	All Systems in Aggregate		
(in $Millions)	OSA	Milliman	O / M Ratio
Present Value of Future Salaries	$183,845.9	$182,591.7	100.7%
Entry Age Normal Cost Rate	9.95%	9.99%	99.6%

Recommendations

We made one suggested change to the preliminary 2017 actuarial valuation that OSA will be including in its final valuation.

- **Assumed salary increases for WSP deferred members with portability** – It is assumed that there will be a one-time increase in salaries for active WSP members, in addition to the assumed annual increase, in order to reflect the expanded definition of pensionable overtime that was recently enacted. In its preliminary valuation, OSA assumed this increase applied to WSP deferred members with portability. After reviewing this, OSA decided to remove this adjustment. This resulted in a small (less than $1 million) reduction in the calculated liabilities for WSP.

No other changes are recommended to the calculations of the liabilities and normal cost rate in the 2017 valuation. In the process of comparing liability calculations with the OSA, we noted two nuances to the calculations that may be worth OSA reviewing in the future. We do not view either of these as material.

- **Member contribution rate for savings fund accrual assumption** – This assumption is used to project the value of the member accounts that may be refunded upon termination. For most systems, the current member contribution rate is projected to decline in the future. OSA has reflected this by assuming a lower member contribution rate, for purposes of the savings fund accrual, than the rate the member is currently paying. We believe this approach is reasonable. It does appear to us that the method used is producing an assumption that is focusing on the long term; however, it may be appropriate to give greater weight to the short term since most refunds of contributions occur within the first 10 years of employment.
- **Treatment of WSP deferred members with portability** – For valuation purposes, a vested member who has left active WSP service and is now working with another employer and eligible for portability is treated as an active member with no additional service accrual. This results in a later assumed retirement than if the member did not have portability. This may be a reasonable assumption, but given the member's benefit is more valuable if the member retires at earliest eligibility, we believe this approach should be reviewed with the experience study.

Section 5 Funding

Audit Conclusion

We reviewed the funding methods and their application. We find them reasonable and consistent with the Actuarial Standards of Practice and the objectives stated in RCW 41.45.010. Based on the Systems' funding methods and assumptions, we believe the employer contribution rates for each membership class are appropriately calculated.

Comments

When we used the liabilities, present value of future salaries, and actuarial assets calculated by OSA, we matched OSA's contribution rate calculations. When we used the liabilities, present value of future salaries, and actuarial assets calculated by Milliman, the results were close to OSA's calculated contribution rates, as shown below.

Employer Contribution Rates

	OSA	Milliman	Difference OSA - Milliman
Employer Contribution Rates (Percent of Member Pay)			
PERS 1/2/3	12.68%	12.67%	0.01%
TRS 2/3	15.33%	15.20%	0.13%
SERS 2/3	13.01%	12.91%	0.10%
PSERS 2	11.96%	11.85%	0.11%
WSPRS	22.13%	22.38%	-0.25%
LEOFF 1	0.00%	0.00%	0.00%
LEOFF 2*	4.64%	4.63%	0.01%

Member Contribution Rates

	OSA	Milliman	Difference OSA - Milliman
Member Contribution Rates (Percent of Member Pay)			
PERS 1	6.00%	6.00%	0.00%
PERS 2	7.90%	7.99%	-0.09%
TRS 1	6.00%	6.00%	0.00%
TRS 2	7.77%	7.75%	0.02%
SERS 2	8.25%	8.25%	0.00%
PSERS 2	7.20%	7.19%	0.01%
WSPRS	8.45%	8.45%	0.00%
LEOFF 1	0.00%	0.00%	0.00%
LEOFF 2*	7.74%	7.71%	0.03%

** Based on a LEOFF 2 contribution rate structure of 90% of Entry Age Normal Cost rate with a 50%/30%/20% share for the member, employer and the state, respectively.*

The remainder of this section describes in detail why we believe the funding policies used to calculate contribution rates are reasonable and consistent with the objectives described in the RCW.

Policy Objectives

The contribution rate calculations for the Washington State Retirement Systems are complex. Much of this complexity is due to efforts to conform to articulated policy objectives. RCW 41.45.010 states that it is the intent of the legislature to provide a dependable and systematic process for funding the benefits provided to members and retirees of the State's retirement systems and sets out five specific goals:

1. To fully fund the Plans 2 and 3 as provided by law;
2. To fully amortize LEOFF Plan 1 costs not later than June 30, 2024;
3. To fully amortize the unfunded actuarial accrued liability for PERS and TRS Plans 1 within a rolling 10-year period, using methods and assumptions that balance needs for increased benefit security, decreased contribution rate volatility, and affordability of pension contribution rates;
4. To establish long-term employer contribution rates which will remain a relatively predictable proportion of the future state budgets; and
5. To fund, to the extent feasible, all benefits for Plans 2 and 3 members over the working lives of those members so that the cost of those benefits are paid by the taxpayers who receive the benefit of those members' service.

Although not specifically stated in RCW 41.45.010, the funding policies also achieve the following goals:

1. The same employer contribution rate is maintained for all members in the same class regardless of Plan. For example: employers make the same contribution for all TRS members regardless of whether the individual members are in Plans 1, 2, or 3.
2. Funding risk is shared by both employers and members. In Plan 2, both employer and member contribution rates vary based on plan experience. In Plan 3, members take the risk associated with their contributions since they are deposited in the defined contribution plan.

Actuarial Cost Methods

The funding policies of the Washington State Retirement Systems are based on two actuarial cost methods: the Aggregate cost method and the Entry Age cost method. The Funded Ratios are measured based on the Entry Age cost method. The following text describes these methods.

Purpose of a Cost Method and Normal Cost

The purpose of any actuarial cost method is to allocate the cost of future benefits to specific time periods, typically during a member's projected working career. This is clearly stated in *Pension Mathematics for Actuaries*, A.W. Anderson, second edition, 1990, p. 5.

> *"The painful lesson which has been learned over and over again in the last century by various types of employers – first private employers, and later public employers – is that the cost of a pension plan must be recognized during the working lifetimes of the employees who are ultimately going to receive pensions, preferably by actually funding amounts sufficient to provide completely for each employee's life annuity at the time of retirement." The text goes on to state on p. 6: "This is where actuaries come into the picture, … The actuary can … assign to each fiscal year a portion of the present value of future benefit payments in such a way as generally to accrue costs over the working lifetimes of employees. Any scheme for making such an assignment of costs is called an actuarial cost method – which we shall henceforth refer to simply as a "cost method."*

The cost assigned to a specific year is called the Normal Cost.

Aggregate Cost Method

Under the Aggregate cost method, the Normal Cost rate is equal to the level percentage of pay necessary to fund the difference between the present value of all future benefits for current members (PVFB) and the actuarial value of assets (AVA). The difference between PVFB and AVA is funded by future contributions. Each year, the Normal Cost spreads all required future contributions evenly over the present value of future salaries for current members. When actual experience is better or worse than expected experience, the Normal Cost in subsequent years will go down or up, respectively. The contribution calculated by the Aggregate cost method is therefore equal to the Aggregate Normal Cost.

Note that while appropriate for funding, this method does not result in a calculation of the liability independent of assets and therefore does not provide a meaningful “Funded Ratio.” OSA currently addresses this by use of the Entry Age actuarial cost method. That method is used to calculate the Funded Ratio and is used for GASB accounting and financial reporting.

Plans 2 and 3 employer and member contribution rates are primarily set using the Aggregate cost method.

Entry Age Actuarial Cost Method

The Entry Age cost method is the most common method used by public plans. The goal of the Entry Age method is the theoretical allocation of projected benefit costs as a level percent of pay over the members’ entire working lifetimes. The Entry Age Normal Cost (EANC) is the theoretical level percent of pay which, if contributed from the members’ dates of hire to their dates of projected retirement, would exactly fund their benefits if all experience exactly matched the actuarial assumptions. Actual experience better or worse than expected will not change the EANC. The EANC as a percentage of pay is not anticipated to increase or decrease from year to year. Experience better or worse than expected creates a positive or negative Unfunded Actuarial Accrued Liability (UAAL), which is funded separately from the EANC.

Therefore, systems using the Entry Age cost method have two components to their calculated costs: (1) the EANC, which is meant to be a level % of pay, and (2) the UAAL amortization contribution, which is the balancing item that makes sure all future benefits are financed if future experience follows the assumptions, and contributions are made according to schedule.

For the purposes of the Washington State plans, the Entry Age method is only used to set minimum contribution rates based on the EANC. This is a logical use of EANC and should increase contribution stability since it represents the theoretical level percentage of pay contribution required to fund benefits if future experience follows the actuarial assumptions. Specifically, RCW sets minimum contribution rates as follows:

- PERS, TRS, SERS and PSERS Plans 2 and 3 employers and Plan 2 members have a minimum contribution rate based on sharing 80% of EANC. [RCW 41.45.155 and RCW 41.45.158]
- WSPRS employers and members have a minimum contribution rate based on sharing 70% of EANC [RCW 41.45.0631].
- The LEOFF Plan 2 Board has established a policy that considers contribution rates equal to both 90% and 100% of the EANC. The current member contribution rate adopted by the LEOFF 2 Board is 50% of 17.50%, which exceeds 100% of EANC.

Plans 2 and 3 Funding Policy

In general, the Plans 2 and 3 funding policies for PERS, TRS, SERS, PSERS, and WSPRS are based on the Aggregate Cost method and work as described below. Note that where the following text makes references to "Plans 2 and 3" the references should be substituted with "Plans 1 and 2" for WSPRS. Also, please note that PSERS has no Plan 3. RCW 41.45 describes the actuarial funding of state retirement systems. The primary references for Plans 1, 2, and 3 funding are [RCW 41.45.060 Basic State and Employer Contribution Rates], [RCW 41.45.061 Required Contribution Rates for Plan 2 Members] and [RCW 41.45.0631 Washington State Patrol Retirement System].

1. First, the remaining Plans 2 and 3 "past liability balances," which are financed entirely by employer contributions, are determined. For PERS, TRS and SERS, these are due to gain sharing, and for WSPRS these are due to distributions under RCW 43.43.270(2) for survivors of members who became disabled under RCW 43.43.040(2) prior to July 1, 2006.

   The remaining past liability balances are determined by taking the prior year's balance, adding interest, and subtracting employer contributions based on the corresponding supplemental employer percent of pay contribution rates. The SERS balance will be depleted during the 2017-2019 biennium, so there will no longer be a payment for SERS in the 2019-2021 biennium. The PERS and TRS balances are scheduled to be depleted during the 2019-2021 biennium. Those rates have been reduced such that the projected balance will be zero at the end of the 2019-2021 biennium. For that biennium, the rates are 0.02% for PERS and 0.38% for TRS. WSPRS will continue with the rate of 1.32% for the survivors of members who became disabled prior to July 1, 2006.

2. The Plans 2 and 3 Present Value of Future Contributions shared by employers and members is calculated as:

	Present Value All Future Benefits
minus	Actuarial Value of Assets
minus	Past Liability Balance
	Present Value of Future Contributions

3. The Plans 2 and 3 Aggregate Normal Cost Rate is determined by spreading the present value of future contributions shared by employers and members over the present value of future Plans 2 and 3 member salaries. The calculation takes into account that Plan 3 members do not contribute to the defined benefit plans.

4. Plans 2 and 3 minimum employer and member contribution rates are applied based on the EANC. The minimum rate for PERS, TRS, SERS, and PSERS is 80% of EANC. The minimum rate for WSPRS is 70% of EANC. LEOFF 2 contributions for the 2017-2019 biennium are currently equal to 8.75%, which is greater than both the Aggregate Normal Cost Rate and 100% of EANC.

5. Plans 2 maximum member contribution rates are applied to TRS [RCW 41.45.061] and WSPRS [RCW 41.45.0631]. This results in the Plan 2 member contribution rates.

6. The Plans 2 and 3 employer rates are increased by the supplemental contributions rates used to finance past liability balances. As described above, these are: PERS 0.02%, TRS 0.38%, and WSPRS 1.32%.

Plans 2 and 3 Funding Policy (continued)

7. Plans 2 and 3 employer rates are also increased to account for any maximums applied to member contribution rates resulting in the final Plans 2 and 3 employer contribution rates.

LEOFF 2 Funding Policy

The LEOFF 2 funding policy follows the same general pattern as the other Plans 2 and 3 with fewer details. LEOFF 2 contributions are currently based on a flat 17.50% rate, which works like a minimum since it is currently larger than the Aggregate Normal Cost Rate. The total contribution is paid 50% by employees, 30% by employers, and 20% by the State [RCW 41.26.725]. Note that that the 17.50% flat rate is approximately equal to, but slightly greater than, 100% of EANC.

The current LEOFF 2 funding policy might be interpreted as: paying the greater of 100% of EANC or the Aggregate Normal Cost. This works well to establish a stable contribution rate (100% EANC, or the greater flat contribution rate) while ensuring liabilities are financed over a responsible period (Aggregate Normal Cost). However, the current funding policy does not address how stable contribution rates will be maintained if the Plan's funding ratio continues to increase. Specifically, the Board may wish to proactively consider: (a) If the funding ratio continues to increase, at what point action should be taken (b) What that action would be. For instance, two potential actions consistent with stable contribution rates would be to de-risk retiree liability, or to adopt more conservative assumptions.

Plans 1 Funding Policy (PERS, TRS, SERS and PSERS)

PERS and TRS Plans 1 are both closed to new members. The PERS and TRS Plans 1 funding policies have been designed to produce equal total contribution rates for PERS and TRS employers regardless of whether their employees are in Plans 1, 2, or 3, and to share the responsibility of PERS Plan 1 benefits with SERS and PSERS employers. It works as follows:

1. All PERS and TRS Plans 1 members have fixed contribution rates equal to 6.00% of pay.
2. The remaining balances for any liability from Plan 1 benefit improvements effective after June 30, 2009 are determined. These liabilities are financed based on rates that were calculated to amortize them over a fixed 10-year period using combined Plans 1, 2, and 3 salaries. The remaining balances are determined by taking the prior year's balance, adding interest, and subtracting employer contributions based on the corresponding employer percent of pay contribution rates: PERS 0.14% and TRS 0.15%.
3. The Present Value of Future Normal Costs (PVFNC) is determined. The Plan 1 funding policy defines this to be the present value of future contributions made by Plan 1 employees plus the present value of future employer contributions made as a percent of Plan 1 member pay based on the Plans 2 and 3 employer contribution rates calculated above. This must be taken into account to keep the contribution rates equal for Plans 1, 2, and 3.

Plans 1 Funding Policy (PERS, TRS, SERS and PSERS) (continued)

4. The Plan 1 UAAL is calculated as:

	Present Value All Future Benefits
minus	PVFNC
minus	Actuarial Value of Assets
minus	Balance Post 2009 Improvements
	Unfunded Actuarial Accrued Liability

5. The UAAL Rate is calculated as the percent of Plans 1, 2, and 3 member pay to amortize the Plan 1 UAAL over 10 years as a level percentage of projected payroll. This is based on a rolling 10-year period which means every year the UAAL is amortized over a new 10-year period. This helps to keep rates stable while amortizing a material portion of the remaining UAAL each year.

6. Minimum contribution rates of 3.50% of pay for PERS 1 UAAL and 5.75% of pay for TRS 1 UAAL are applied. When combined with the rolling 10-year period, these will help to get the UAAL for the Plans 1 completely financed over a reasonable period instead of indefinitely re-amortizing it over 10 years.

Conference of Consulting Actuaries White Paper

As mentioned in Section 3, in October 2014, the Conference of Consulting Actuaries (CCA) issued a white paper titled *Actuarial Funding Policies and Practices for Public Pension Plans*. The white paper was composed by a group of public plan actuaries from the major consulting firms that work with public plans and was the result of an extensive series of meetings which lasted for over two years. The white paper focuses on a Level Cost Allocation Model (LCAM) and provides detailed analysis for classifying each of the three major components of LCAM funding policies: (a) cost methods, (b) asset methods and (c) amortization methods. The classification system uses the following terms:

Categories Under CCA Guidelines	
Model Practices	Those practices most consistent with the Level Cost Allocation Model (LCAM).
Acceptable Practices	Generally those which, while not consistent with the LCAM, are well established in practice and typically do not require additional analysis.
Acceptable Practices with Conditions	May be acceptable in some circumstances either to reflect different policy objectives or on the basis of additional analysis.
Non-Recommended Practices	Systems using these practices should acknowledge the policy concerns identified in the CCA Guidelines or acknowledge they reflect different policy objectives.
Unacceptable Practices	No description provided by CCA, but implication is that these should not be used.

We will make reference to the CCA white paper in our discussion below.

Evaluation of Funding Policy

As stated earlier, we believe the funding policies are consistent with Actuarial Standards of Practice and with the intended policy objectives. Additional specific comments follow below.

The Aggregate cost method is used as the foundation for the funding policies. The Aggregate cost method is classified as “Acceptable” by the CCA white paper, is well established in practice, and is consistent with the objectives in that document.

The Aggregate cost method is specifically designed to fully fund all future benefits for current members (that are not financed by accumulated assets) over the remaining projected working lifetimes of those members. This represents excellent “demographic matching,” which is to say benefits are funded over the working lifetimes of the members receiving them. It is also excellent at avoiding “agency risk” issues, which means use of the Aggregate method makes it very difficult to push the cost of benefits for current members onto future generations.

The Aggregate method is also consistent with the policy objectives identified in RCW 41.45.010, which is particularly evidenced by how well the fifth policy objective is satisfied: to fund, to the extent feasible, all benefits for Plans 2 and 3 members over the working lives of those members so that the cost of those benefits are paid by the taxpayers who receive the benefit of those members' service.

The Aggregate method’s primary shortcoming is that it passes all gains and losses through to the Normal Cost, which pays for them over the comparatively short period of the active members’ projected remaining working lifetimes. The downside of this is that it can decrease the stability of short-term costs.

This shortcoming is addressed in the funding policy by smoothing asset gains and losses over as much as eight years, as well as by applying the minimum contribution rates. Eight-year asset smoothing is longer than five years, which is the most common length of asset smoothing. The comparatively longer asset smoothing period helps partially offset the comparatively shorter financing period for gains and losses under the Aggregate cost method. The minimum contribution rates equal to 70% or 80% of the EANC help avoid temporary large decreases in contributions due to good investment experience at the peak of a market cycle.

The Plans 1 policy of contributing at a level which finances the UAAL over a rolling 10-year period based on the pay of Plans 1, 2, and 3 is a rough equivalent of the Aggregate Cost Method. The 10-year rolling period bears a very general similarity to financing UAAL over the members’ projected remaining working lifetimes. When the minimum contribution rates of 3.50% for PERS 1 and 5.75% for TRS are added, the policy also has an element that will help to get the UAAL for the Plans 1 completely financed over a reasonable period instead of indefinitely re-amortizing it over a rolling 10-year period. The funding policy is very consistent with the third policy objective listed in RCW 41.45.010, which is to fully amortize the UAAL for PERS and TRS Plans 1 within a rolling 10-year period, using methods and assumptions that balance needs for increased benefit security, decreased contribution rate volatility, and affordability of pension contribution rates.

Evaluation of Funding Policy (continued)

Paying 100% of EANC (or slightly greater) avoids making contributions which are less than the expected long-term cost of benefits. Short-term rate stability is increased since rates will not fluctuate every year due to gains and losses, particularly investment gains and losses, being reflected in the Aggregate Normal Cost. Some margin is provided for adverse experience since the rates are higher than the Aggregate Normal Cost.

Section 6 Review of Preliminary Report and Recommendations from Prior Audit

Audit Conclusion

Because the final 2017 Actuarial Valuation report has not been completed at this time, we base the comments in this section on the preliminary report. We have made a few comments for consideration for the upcoming reports that may enhance an outside reader's understanding. All of these comments are related to additional disclosure, and, if implemented, none would have an impact on the contribution rates.

We have also reviewed the comments from our prior actuarial audit and reported on the incorporation of those comments. All of the recommendations pertaining to the valuation calculations were implemented.

Comments Regarding OSA's Reports

- The valuation assumption is that mortality for beneficiaries is equal to the mortality for a member of the opposite sex in the same system. We recommend this be explicitly disclosed in the OSA report.
- Adjustments to the calculated contribution rates for several systems are included in the OSA valuation to reflect 2018 legislation that has recently been enacted. We agree this is appropriate. OSA provides a good summary of the changes ("Material Plan Provision Changes Since Last Valuation) reflected due to the 2018 laws in its Summary of Plan Provisions section of the report. Our only recommendation is to provide a better link between the two so it is clearer that the changes since the last valuation are the changes due to the 2018 laws.

Recommendations from Prior Audit

We have also reviewed the comments from our prior actuarial audit and reported on the incorporation of those comments. All of the recommendations pertaining to the valuation calculations were implemented.

Recommendations Addressed

- **Calculation of Death Benefits for Future Inactive Members.** OSA is applying the probability of survivor assumption based on future age.
- **Report Comments.** Our comments on the report were either addressed or are no longer applicable to the 2017 valuation.
- **Considerations for Next Experience Study.** The 2014 actuarial audit had some suggestions for changes to be implemented with the experience study. It is our understanding that OSA will consider implementing those suggestions with the next experience study. Those suggestions include mortality analysis by benefit amount, immediate commencement for members with 30 years of service, exclusion of people eligible for early retirement from the termination analysis, consideration of adding a portability assumption, and reflecting increases in medical costs that can occur after retirement.

LEOFF 2 Board Actuarial Audit

Mark Olleman, Nick Collier and Daniel Wade

July 25, 2018

Purpose & Scope

- **Purpose:** Review OSA's work and confirm that the results of the valuation are reasonable.
- **Scope:**
  - Full independent replication of June 30, 2017 Actuarial Valuation
  - Verify contribution rates

Bottom Line

- What you need to know
  - OSA's actuarial work is reasonable and appropriate
    - Good match on liabilities and contribution rates
    - Package of assumptions is reasonable
  - No outstanding issues from prior audit
  - Recommendation
    - No changes needed to OSA's 2017 valuation.

Parallel Valuation Results
Actuarial Liabilities

- Good match on both PVB and EAN AL

(in $Millions)	LEOFF 2 Results OSA	 Milliman	 O / M Ratio
Present Value All Future Benefits			
Retirement	$8,910.8	$8,932.5	99.8%
Termination	267.3	265.4	100.7%
Death	282.2	291.7	96.7%
Disability	412.9	402.2	102.7%
Total Actives	$9,873.2	$9,891.8	99.8%
Terminated Vested	$207.7	$202.1	102.8%
Terminated Not Vested	13.0	13.0	100.0%
Total Inactive, not in Payment	$220.7	$215.1	102.6%
Retired	$3,167.6	$3,175.4	99.8%
Disabled	202.5	198.0	102.3%
Survivor	135.0	135.6	99.6%
LOP Liability	73.0	73.1	99.9%
Total Annuitants	$3,578.1	$3,582.1	99.9%
All Members	**$13,672.0**	**$13,689.0**	**99.9%**
Entry Age Normal Accrued Liability			
All Members	**$10,159.5**	**$10,200.3**	**99.6%**

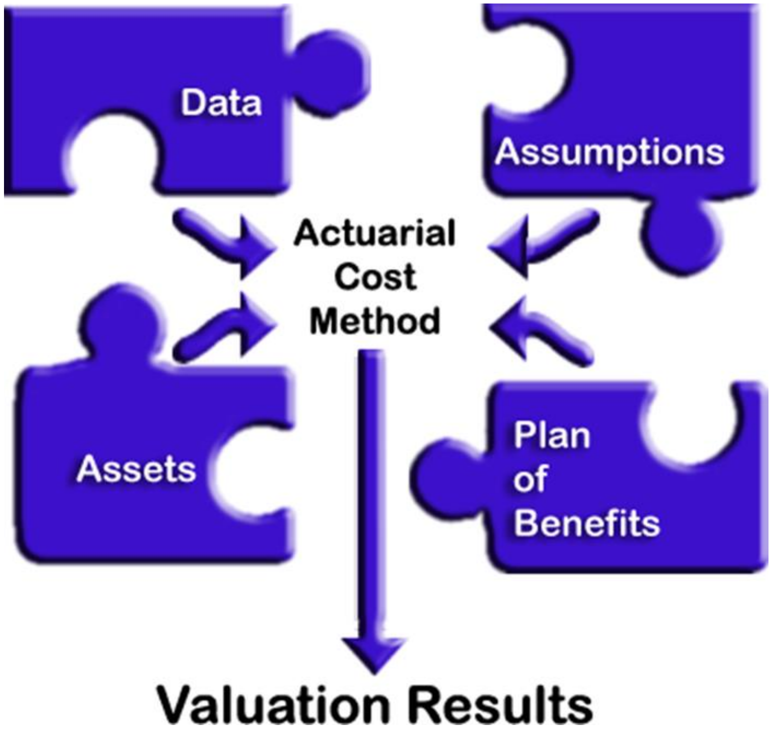
Contribution Rates

- Checked contribution rates two ways
  - First matched OSA's calculated contribution rates using liabilities and normal cost rates from their valuation
  - Also were close to contribution rates using Milliman's independently calculated liabilities and normal cost rates (shown below)
    - Well within expected tolerances for actuarial audits

	90% EANC Rates for 2019-21	
	OSA	**Milliman***
Member	7.74%	7.71%
Employer	4.64%	4.63%
State	3.10%	3.08%

** Based on Milliman calculation of normal cost rate.*

Actuarial Valuation



Membership Data

- Reviewed data supplied by DRS
  - Reviewed for reasonableness
  - Confirmed that all necessary information was included
- Reviewed data used in OSA's valuation
  - Performed independent data editing
    - Edits made for outliers and salary adjustments made for members with less than one year of service.
    - Compared to preliminary participant data summary posted on OSA's website.
- Conclusion
  - Data used by OSA in valuation looks very good.

Membership Data (continued)

LEOFF 2	OSA	Milliman	Ratio OSA/Milliman
Active Members			
Total Number	17,694	17,694	100.0%
Total Salaries (millions)	$ 1,879	$ 1,879	100.0%
Average Age	43.2	43.2	100.0%
Average Service	14.2	14.2	100.0%
Average Salary	$ 106,169	$ 106,184	100.0%
Retirees and Survivors			
Total Number	4,851	4,851	100.0%
Average Monthly Pension	$ 3,894	$ 3,894	100.0%
Terminated Members			
Total Number Vested	863	863	100.0%
Total Number Non-Vested	1,917	1,917	100.0%

Benefits, Assumptions and Methods

- Benefits
  - Benefits valued are consistent with RCW and member handbooks
- Methods and assumptions used in valuation are reasonable
  - Assumptions reviewed in detail with 2014 audit
  - Additional review of economic assumptions completed this year with focus on investment return assumption
  - 7.40% investment return assumption is in line with the median assumption for large public retirement systems, with continuing trend of lower assumptions
  - Varying views of future returns
    - Milliman projects about a 7.00% median return for next 50 years based on valuation inflation assumption of 2.75%

Actuarial Value of Assets

- Data provided by WSIB and DRS
  - Totals and breakdown by Plan taken from DRS data
  - Monthly cash flows taken from WSIB data.
- Independent calculation by Milliman based on sources of data
- Asset method and calculations are reasonable

Conclusion

- No changes recommended to 2017 valuation

Questions?

Caveats and Disclaimers

This presentation is based on the data, methods, assumptions and plan provisions described in our actuarial audit report. The statements of reliance and limitations on the use of this material is reflected in the actuarial audit report and apply to this presentation.

These statements include reliance on data provided, on actuarial certification, and the purpose of the report.

Milliman's work product was prepared exclusively for the PFC for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning OSA and DRS operations, and uses DRS data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

July 25, 2018

Funding Method Options

FINAL PROPOSAL

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ISSUE STATEMENT

There are a variety of funding methods used to estimate the cost of future benefits, therefore it is up to the Board to decide which method aligns best with their funding goals.

OVERVIEW

The aggregate cost method is the statutory funding method for all the plans, including LEOFF 2. However, the Board has used a temporary funding method for much of its history. When the Office of the State Actuary (OSA) presents to the Board, they will point to aggregate as being the long-term method or the statutory method for funding the plan.

The Board was created right after a market crash, at a time when rates were out of bounds with what the normal cost of the plan was. Therefore, the Board adopted a stair step annual rate increase to tie them into the normal cost of the plan. Then, in 2008, right before another market crash, the Board adopted a temporary funding method, setting rates at 100% of the normal cost.

BACKGROUND

Funding Policy

A funding policy is very important to the success of a pension plan, because these policies help address the plan's affordability, the risk of the plan, rate stability, and rate adequacy. While the funding method is the underlying rate calculation, any funding policies the Board adopts is layered on top of that. LEOFF Plan 2 has stated the following as goals in the funding policy:

- Stable short-term contribution rates
- Full funding on an ongoing basis
- Smoothing investment returns
- Asset value corridor
- Minimum contribution rates
- Multi-year rate plans

Funding Method

The choice of a funding method is a core issue for a pension plan because the funding method determines the way the cost of the plan will be financed over time in much the same way that the choice of a style of mortgage determines the way in which the cost of a house is financed over time. All standard funding methods will accomplish the same goal of completely funding the cost of the plan just like either a fixed-rate mortgage or an adjustable-rate mortgage can be used to pay for a house.

This report will examine two of the standard pension funding methods used by LEOFF Plan 2 since its inception, the aggregate funding method and the entry age normal cost method (EANC), as well as examine the variation of those funding methods that the LEOFF 2 Board has chosen to use when setting contribution rates.

FUNDING GOALS

Stable Contribution Rates

Stable contribution rates result in more predictable budget obligations for plan members, local government employers and the State which helps them prepare to meet their future funding obligations. The LEOFF Plan 2 Retirement Board has adopted contribution rate stability as one of the key elements of the Board's strategic plan for LEOFF Plan 2.

There are a number of policies which have been adopted by the LEOFF Plan 2 Retirement Board in order to moderate short-term swings in contribution rates.

1. Smoothing investment gains or losses over a period of time
2. Asset value corridor
3. Minimum contribution rates
4. Multi-year rate plans

Full Funding on an Ongoing Basis

In addition to short-term contribution rate stability, the Legislature adopted a goal of long-term contribution rate stability when LEOFF Plan 2 was first created. The term used to describe this goal in statute is "intergenerational equity" or the concept that each generation of members, employers and taxpayers pays for the benefits that they receive. Costs for current member benefits are not passed on to future generations.

There are two common causes of long-term contribution rate volatility; underfunding and benefit improvements. The Aggregate Funding Method used in LEOFF Plan 2 supports the goal of long-term contribution rate stability because this funding method eliminates the risk of plan underfunding (or overfunding). Benefit improvements also increase the cost of the plan. Benefit improvements that apply to retired members or to past service credit for current members may raise a concern that the current generation of members is paying for past benefits so this issue has been considered carefully by the LEOFF Plan 2 Board any time that the Board has recommended a benefit improvement to the Legislature.

Smoothing Investment Returns

The current assumption is that assets invested in the LEOFF Plan 2 Retirement Fund will earn 7.4% per year over the long-term. However, on a year-by-year basis, the investment return is almost certain to be higher or lower than 7.4% which results in a “gain” or “loss” when compared to the 7.4% earnings expectation. Public pension funds commonly “smooth” or phase in the recognition of these annual investment gains or losses over a period of time in order to soften the effect of short-term financial market volatility on contribution rates because averaging investment returns over a period of time will result in greater contribution rate stability over that same period of time. The current smoothing method for LEOFF Plan 2 recognizes investment gains or losses over a period of as much as eight years.

Asset Value Corridor

Smoothing investment returns results in a variance between the true market value of the assets in a retirement fund and the assumed value which is used to determine the contribution rates for the plan. An asset value corridor ensures that the variance stays within a set amount which increases contribution rate stability during periods of unusual investment gains or losses. LEOFF Plan 2 uses a 30% market value corridor which means that the actual market value of assets may not drop below 70% of the assumed value of assets or rise above 130% of the assumed value of assets. The historical market value vs actuarial value of assets can be found in Appendix B.

Minimum Contribution Rates

Minimum contribution rates are often referred to as a “rate floor” and are used to ensure that short-term contribution rates do not drop below the expected long-term cost of the plan by more than a set amount. A rate floor is particularly useful for stabilizing contribution rates during periods of better than expected investment returns and when there are short-term variances in plan funding levels resulting from changes to assumptions or the plan funding method. The LEOFF Plan 2 Retirement Board adopted 90% of the expected long term cost of the plan as the contribution rate floor for LEOFF Plan 2.

Multi-year Rate Plans

Adopting a multi-year contribution rate plan is another useful method for improving the short-term predictability of contribution rates. The contribution rate may vary during the period of the plan or remain level depending on plan funding needs. The LEOFF Plan 2 Retirement Board adopted a four-year schedule for contribution rates in 2008 which set rates for the entire period exactly equal to the expected long-term cost of the plan.

FUNDING METHOD

The Aggregate Funding Method

The aggregate funding method has only one component, the normal cost. The normal cost takes the cost of all future benefits and spreads that over the future payroll of all current members.

When LEOFF Plan 2 was created in 1977, the aggregate method was chosen by the Legislature as the plan's funding method because it was particularly well suited to accomplish two pension funding policy goals which were considered important at that time; long-term stability in contribution rates and full funding of the plan on an ongoing basis. As part of its Strategic Plan in 2004, the Board adopted the policy goals of contribution rate stability and full funding of LEOFF Plan 2 and reaffirmed use of the aggregate funding method to accomplish these goals.

The aggregate funding method promotes long-term stability in contribution rates because it is designed to fund the cost of the plan as a level percentage of pay over a member's working career. The contribution rates paid by the plan members and their employers would theoretically remain unchanged for the member's entire career if the plan's long-term economic assumptions and assumptions regarding member behavior were 100% accurate.

To the extent that those assumptions prove inaccurate, any difference between what is expected and what is experienced, such as lower than expected investment returns, is reflected in the plan's cost each time the plan is reviewed and a new long-term rate is calculated.

Therefore, short term contribution rates can and do experience ample volatility. A plan using the aggregate funding method will always be 100% funded if the required contributions are paid; it will never have a surplus or an unfunded liability.

The Entry Age Normal Cost Method

The EANC method has two components; the normal cost, and an unfunded actuarial accrued liability (UAAL). The UAAL refers to the difference between the actuarial values of assets owned by the plan and the total benefits due to be paid. Unfunded liabilities are created when the actual plan investment returns are less or more than the assumed returns, and when other plan assumptions are realized, resulting in actual costs exceeding or below predicted costs.

Both of these components are necessary in this funding method to achieve the goal of fully funding the benefits when they are due. The normal cost is more stable under the EANC because it doesn't include any of the experience that differs from assumptions, that is what the UAAL component is for. The normal cost only changes when plan assumptions are changed[1].

[1] For example, lowering the investment return assumption from 7.5% to 7.4%

LEOFF 2 Board Funding Method

The Board has two policies in place when it comes to the funding method[2]:

- Short term: 100% EANC
- Long term: Aggregate, with rate floor of 90% EANC

As stated previously, under the EANC method, there are two components: the normal cost, and the UAAL (surplus or deficit) which is amortized over time. Under the Board's temporary funding policy, the amortization of the unfunded liability is eliminated. Instead, rates are tied to the normal cost and the UAAL will fluctuate up and down (within the corridor) depending on investment performance. This method provides more stable rates than the EANC. One downside to not using the full EANC method is that the plan can become too overfunded, or too underfunded, because the UAAL portion is being ignored.

[2] An important detail in the discussion around changing funding methods/policies is that changing them will not affect current contribution rates

POLICY OPTIONS

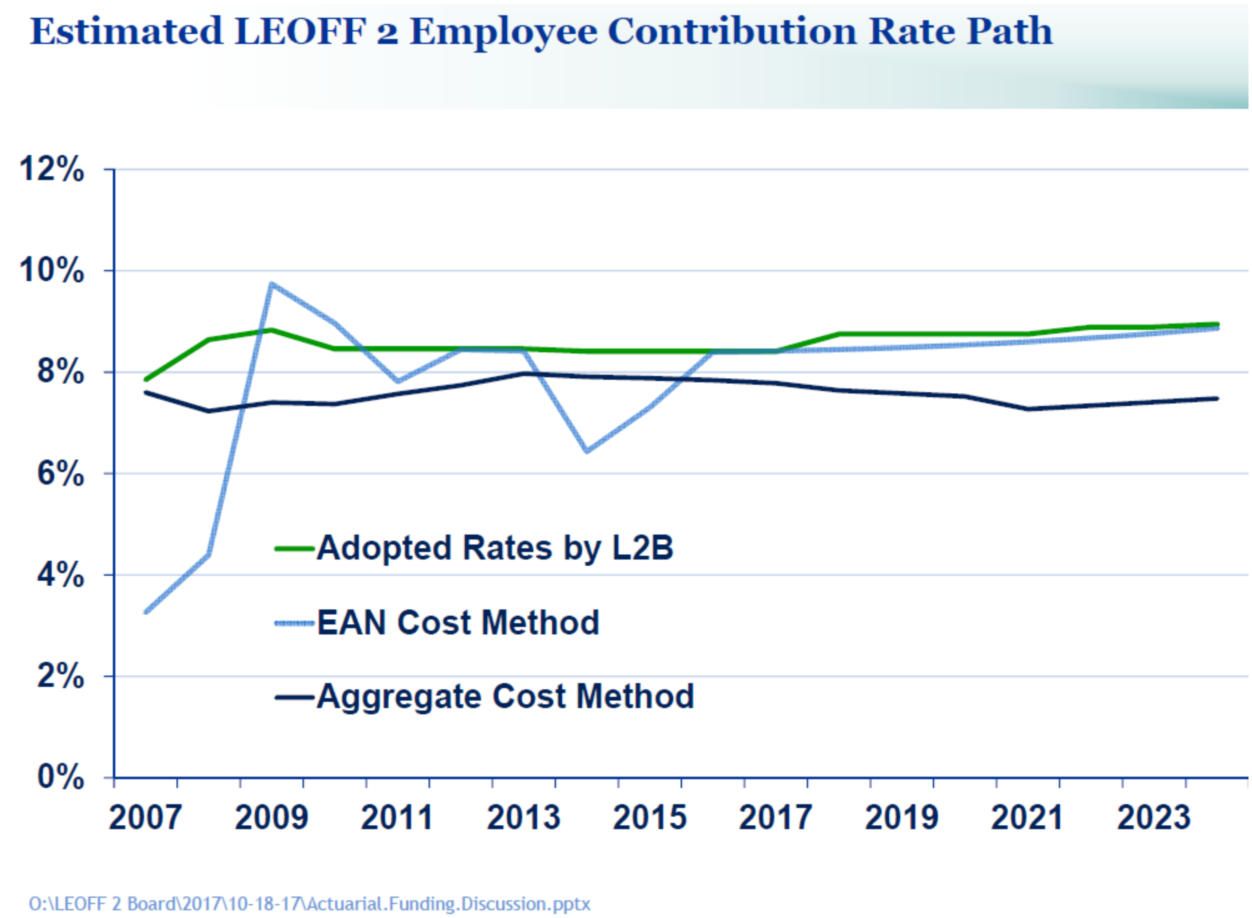
1. Continue to use 2 funding methods
    - Short term: 100% EANC
    - Long term: Aggregate with 90% EANC floor
2. Change long term method to 100% EANC
    - How to manage UAAL?
        i. Amortization
        ii. Funding ratio corridor

SUPPORTING INFORMATION

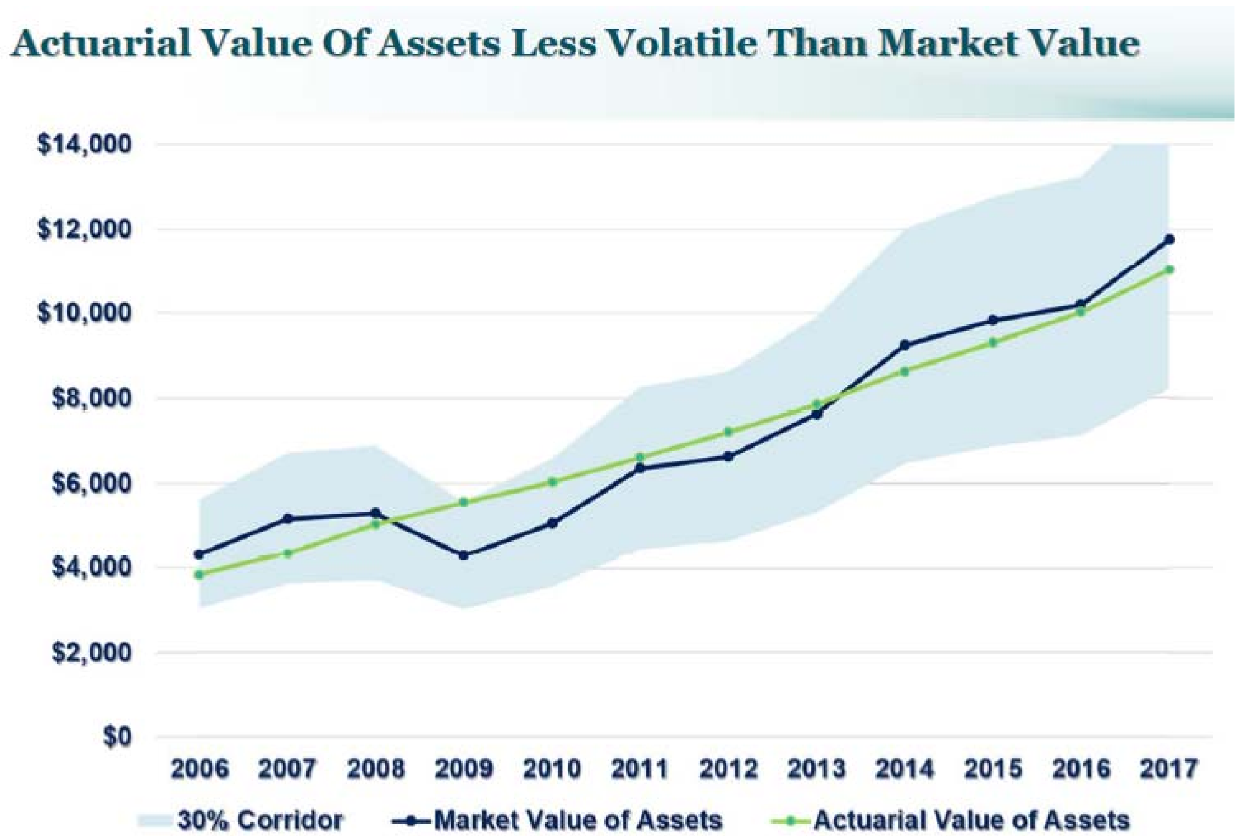
Appendix A: Estimate LEOFF 2 Employee Contribution Rate Chart

Appendix B: Historical MVA vs AVA

APPENDIX A


Estimated LEOFF 2 Employee Contribution Rate Path
12%
10%
8%
6%
4%
2%
0%
2007
2009
2011
2013
2015
2017
2019
2021
2023
Adopted Rates by L2B
EAN Cost Method
Aggregate Cost Method
O:\LEOFF 2 Board\2017\10-18-17\Actuarial.Funding.Discussion.pptx

APPENDIX B


Actuarial Value Of Assets Less Volatile Than Market Value
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
30% Corridor
Market Value of Assets
Actuarial Value of Assets

LEOFF
Plan 2 Retirement Board

Funding Method Options

Final Proposal
July 25, 2018

Issue Statement

There are a variety of funding methods used to estimate the cost of future benefits, therefore it is up to the Board to decide which method aligns best with their funding goals.

Background

- Aggregate
  - Statutory funding method for all plans, including LEOFF 2
- Board has used a temporary funding method for much of its history
- When OSA presents to the Board, they will point to aggregate as being the long-term method, or the statutory method, for funding the plan
- Board was created right after a market crash at a time when rates were out of bounds with what the long term expected cost of the plan was
  - The Board adopted a stair step annual increase to rates to tie them in with the long term expected cost of the plan
  - In 2008, right before the market crash, the Board adopted a temporary funding method to set rates at 100% of the long term expected cost of the plan

Funding Policy Overview

- Stable contribution rates
- Full funding on an ongoing basis
- Smoothing investment returns
- Asset value corridor
- Minimum contribution rates
- Multi-year rate plans

Funding Method Overview

- All methods accomplish the same goal of completely funding the cost of the plan
  - Fixed rate vs. adjustable rate mortgage
- Aggregate method
- Entry age normal cost method
- LEOFF 2 Board funding method

Stable Contribution Rates

- Predictable budgets for stakeholders
- Policies to moderate short term swings:
  - Investment smoothing
  - Asset value corridor
  - Minimum contribution rates
  - Multi year rate plans

Smoothing Investment Returns

- 7.4% return assumption
- Earnings will almost always be higher or lower than 7.4%
- Returns smoothed over a period of up to 8 years

Asset Value Corridor

- Smoothing results in a variance between market value and actuarial value of assets
- AVC ensures that the variance stays within a set amount to increase rate stability
- LEOFF 2 uses a 30% corridor
  - The actuarial value of assets can’t fall below 70% or above 130% of the market value

Minimum Contribution Rates

- Often referred to as a “rate floor”
- Used to ensure that short-term rates do not drop below the expected long term cost of the plan by more than a set amount
- LEOFF 2 has historically adopted a 90% or 100% rate floor

Multi-year Rate Plans

- Another method to improve predictability of rates
- LEOFF 2 uses a 4-year schedule for adopting rates

Aggregate Funding Method

- Has only one component, the normal cost
- Normal cost takes cost of all future benefits and spreads that over current members
- Funding method in statute since plan inception in 1977
  - Long term rate stability
  - Fully funds plan
- Any difference between experience and assumptions leads to rate volatility
  - Aggregate wants the plan to always be 100% funded, ASAP
  - No UAAL, plan will always be 100% funded if required contributions are made

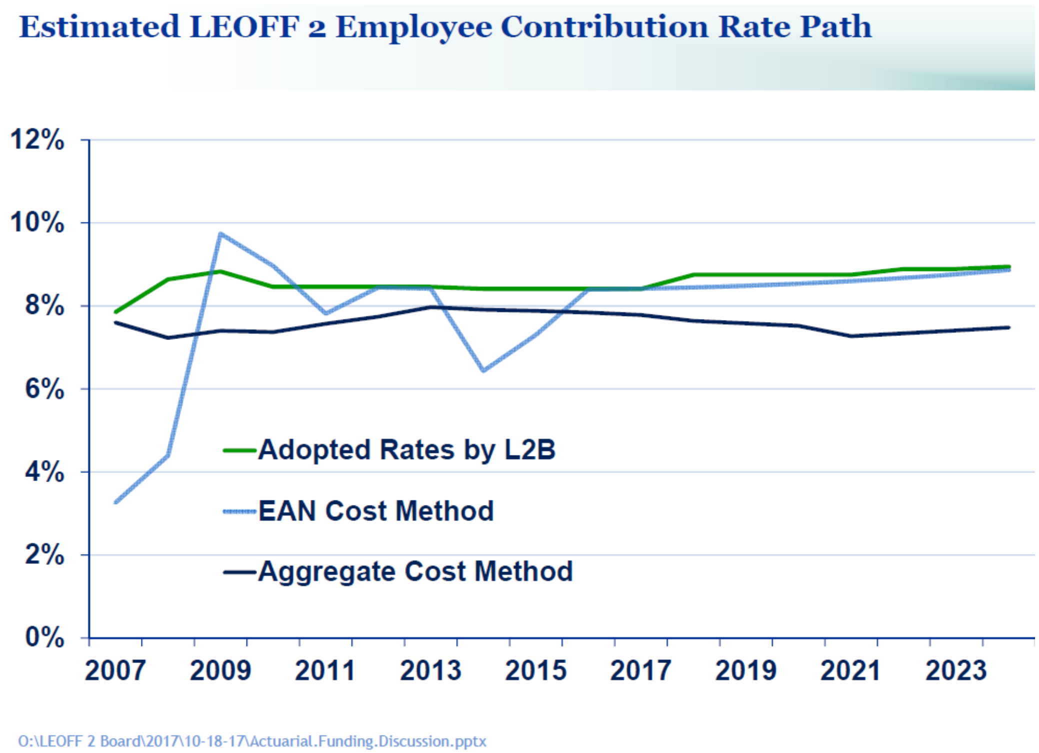
Entry Age Normal Cost Method

- Two components
  - Normal cost
  - UAAL
- UAAL may be positive or negative
  - Amortized over time
- Normal cost is more stable under EANC
- Normal cost only changes when plan assumptions change

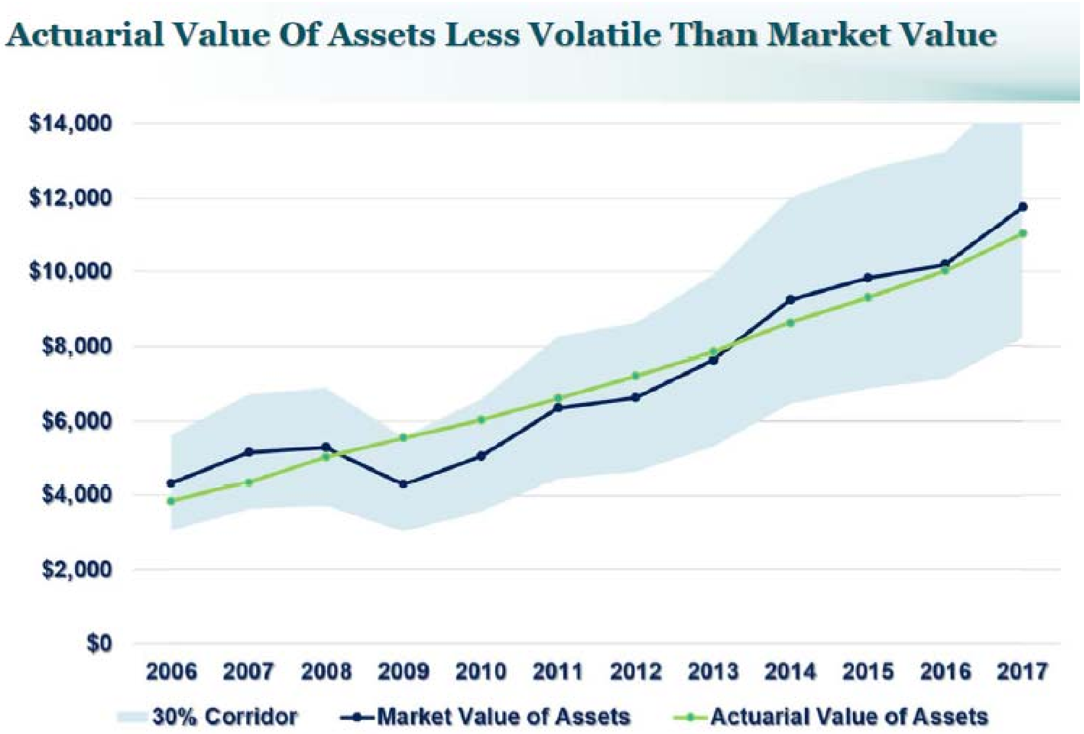
LEOFF 2 Board Funding Method

- Two policies for funding method:
  - Long term: Aggregate, rate floor of 90% EANC
  - Short term: 100% EANC
- Board’s funding policy:
  - Variation of EANC
  - Amortization of UAAL is eliminated
  - Rates tied to normal cost, UAAL fluctuates based on investment returns
  - Provides the most stable rates out of the 3 methods

Estimated Rates



Market Value vs. Actuarial Value



Policy Options

1. Continue to use 2 funding methods
   - Short term: 100% EANC
   - Long term: Aggregate with 90% EANC floor
2. Change long term method to 100% EANC
   - How to manage UAAL?
     - Amortization
     - Funding ratio corridor

Thank You

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July 25, 2018

Contribution Rate Setting Options

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ISSUE STATEMENT

Setting the contribution rates for the Law Enforcement Officers' and Fire Fighters' (LEOFF) Plan 2 retirement system is one of the key responsibilities of the Board.

OVERVIEW

Setting appropriate contribution rates is important to maintaining the financial integrity of LEOFF Plan 2 and providing stability for employers, members, and the state with respect to amounts that must be budgeted and paid into the plan.

This report provides an introduction to contribution rate setting and includes information about the rate setting cycle; current and historical contribution rates; and reviews the Board's strategy and policies related to contribution rates, along with other concepts that impact rate setting.

BACKGROUND

Introduction

In even numbered years, the Board has a statutory duty[1] to set contribution rates for LEOFF Plan 2. Contribution rates come in two forms; a *"base rate"* to pay for the cost of the plan and a *"supplemental rate"* to pay for the cost of additional benefits added to the plan.

The Board adopts the required rates for members, employers, and the state[2]. Contribution rates are split on a 50-30-20 basis and calculated as a percentage of employee salary. The Department of Retirement Systems (DRS) collects the required contributions on a monthly basis and transfers them to the LEOFF 2 Retirement Fund.

Prior to the creation of the Board in July 1, 2003 under Initiative 790, basic contribution rates for LEOFF Plan 2 were set by the Pension Funding Council (PFC), subject to revision by the Legislature. The PFC would receive contribution rate recommendations from the Office of the State Actuary (OSA) on all of the state retirement plans, including LEOFF Plan 2 and this same process is used today for all of the other state retirement systems.

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[1] RCW 41.26.720, RCW 41.45.0604, 41.45.070, RCW 44.44.040. See Appendix A: LEOFF Plan 2 Rate Setting Statutes

[2] LEOFF Plan 2 is the only state plan receiving a contribution from the state.

After the creation of the Board, OSA now makes contribution rate recommendations for LEOFF Plan 2 directly to the Board and the Board sets contribution rates. The PFC still sets the contribution rates for the other state pension plans.

Contribution Rate Setting Cycle

Under current Washington State law, in July of even-numbered years, the Board reviews the basic contribution rates calculated by the Office of the State Actuary (OSA)[3] based on an actuarial valuation performed on asset, participant, and plan information compiled in odd-numbered years.

In calculating base contribution rates, OSA applies applicable funding policies. The Board then adopts contribution rates for LEOFF Plan 2 as provided under RCW 41.26.720(1)(a). The adopted rates remain in place for the ensuing biennium.

Biennial Base Rates

The biennial base contribution rate is based on the level of benefits in place at the time the underlying actuarial valuation is performed. Base contribution rates for LEOFF Plan 2 were established on an ad-hoc basis prior to 1989, but generally were only changed every two years, unless there was a benefit increase.

SUPPLEMENTAL RATES

A supplemental contribution rate is calculated and charged whenever there is an increase to benefits as provided in RCW 41.45.070. A supplemental contribution rate calculation is performed by the Office of the State Actuary (OSA) for all pension legislation and the result of that calculation is reported in the fiscal note published by OSA. Any supplemental contribution rate for LEOFF 2 is adopted by the Law Enforcement Officers' and Fire Fighters' (LEOFF) Plan 2 Retirement Board. The Board has all supplemental rate recommendations audited by an outside actuary.

Supplemental contribution rates are included in the basic rates at the beginning of the next contribution rate-setting cycle. A supplemental rate is intended to begin prefunding the cost of a benefit improvement rather than waiting until the next actuarial valuation when the benefit liability will be rolled into the basic contribution rate. The risk of delaying the adoption of a supplemental rate is the loss of earnings on the contributions that would be made. A delay in the adoption of a supplemental rate may not create a significant risk of underfunding though, which depends on the level of cost associated with the benefit improvement.

OSA calculates a supplemental rate by evaluating proposed legislation, developing assumptions for how the legislation will affect future benefit payments and future plan experience, calculating the expected increase in plan liabilities, and determining what increase in contributions, if any, is sufficient to off-set the increase in liabilities. The development of assumptions for fiscal notes may differ from the assumptions used in actuarial valuations.

The 2018 Legislature passed Substitute Senate Bill 6214 which adds PTSD to the list of occupational diseases, and creates a rebuttable presumption for LEOFF members that PTSD is an occupational disease. OSA estimated in its' fiscal note that this legislation would have a cost to the plan due to members who leave employment due to PTSD being eligible for disability or death benefits. OSA stated in the fiscal note, found in Appendix D, that it does not expect this bill to result in an increase in the total

[3] Board-retained actuary

number of annual deaths but does expect an increase in the total number of annual disabilities since the bill expands the coverage of occupational diseases.

Additionally, OSA expects a shift in the benefits paid from non-duty to duty-related for both deaths and disabilities. Duty-related benefits are typically more costly to the pension system and require higher contributions to cover the costs. OSA estimated that this legislation would create cost impacts as outlined in the table below:

Impact on Contribution Rates *(Effective 9/1/2018)*	
Fiscal Year 2019 State Budget	**LEOFF**
Member	0.05%
Employer	0.03%
State	0.02%

Budget Impacts *(Dollars in Millions)*			
	2018-2019	**2019-2021**	**25-Year**
General Fund-State	\$0.3	\$0.8	\$15.8
Local Government	\$0.5	\$1.2	\$23.6
Total Employer	\$0.8	\$2.0	\$39.4

The history of supplemental rate recommendations and adoptions is in Appendix C.

CURRENT RATES

During the 2016 Interim, the Board adopted contribution rates for the 2017-19 and 2019-21 biennium's based on 100 percent of the normal cost under the Entry Age Normal (EAN) funding method. The Board's rate adoption for 2017-21 represents a continuation of their temporary funding policy that produces stable contribution rates. Measured at June 30, 2016, that rate adoption exceeds the requirements under the plan's actuarial cost method and long-term funding policy.[4]

The current *total* contribution rate for LEOFF Plan 2 is 17.50%[5] which breaks down to:

- 8.75% Members
- 5.25% Employers
- 3.50% State

See Appendix A to review the full history of LEOFF Plan 2 contribution rates.

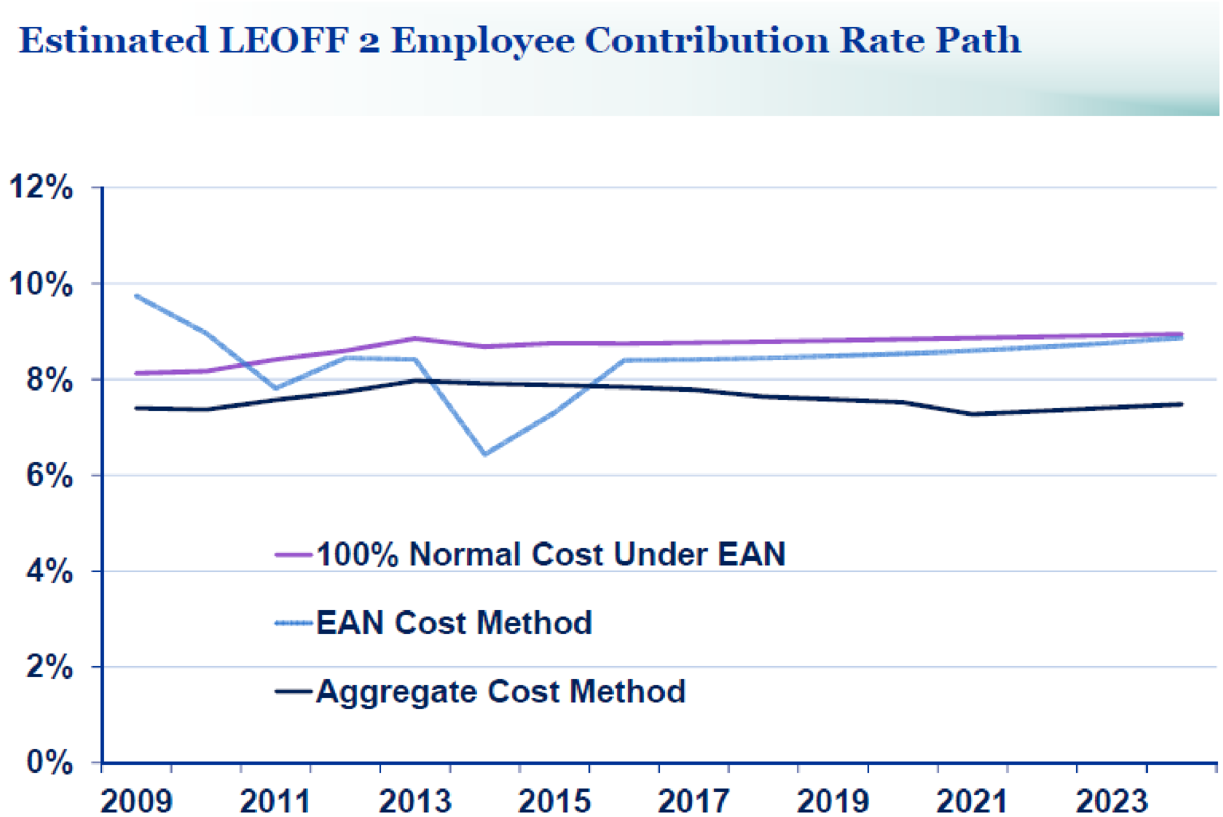
LEOFF Strategic Priorities

Pension plans commonly have other goals related to plan funding in addition to the primary goal of providing the necessary funding to pay the full costs of the plan. These goals may influence the choice of a funding method and they may also lead pension plans to adopt funding polices which modify the plan's funding method to support those other goals. These choices can impact the contribution rates.

[4] 2016 Actuarial Valuation Report for LEOFF Plan 2, pg. 12.

[5] Rates based on the 2016 Valuation as recommended by OSA: 7.91% Member, 5.25% Employer, 3.50% State (Total 15.82%)

In 2004 the Board, as part of its strategic plan, identified financial integrity as one of its top four goals. Contribution rate stability and full funding on an ongoing basis were identified as key objectives of this goal.



CONCEPTS AFFECTING CONTRIBUTION RATES

Actuarial Cost Method

The aggregate actuarial cost method was statutorily designated to satisfy the goal of fully funding LEOFF Plan 2. By definition, the aggregate actuarial cost method does not allow for an unfunded actuarial accrued liability (UAAL) to develop.

The aggregate normal cost is determined as the level percentage of projected payroll that will fund the difference between the present value of projected benefits and the actuarial value of assets at the valuation date.

As a result, any difference between the assets and the projected liability, due to short-term gains or losses, assumption changes or benefit enhancements, is automatically reflected in the annual cost of the plan and not amortized as a separate component of plan cost. In absence of an effective asset smoothing method, the aggregate cost method can produce volatile contribution rates under certain investment market cycles.

In July 2008 the Board adopted a temporary change in funding policy by adopting fixed rates for the next four years (July 1, 2009 through June 30, 2013) that were equal to 100% of the EANC as of June 30, 2007. Then in July 2010, as part of their two-year rate-setting cycle, the Board reviewed the existing funding policy and moved to extend the current temporary funding policy through June 30, 2017.

This temporary funding policy allowed the Board to maintain rate stability and 100% funded status through June 2017. The Board's policy allowed for the fund to recognize all of the losses from 2008 and 2009 without having to increase contribution rates. Most of the other Washington plans had, and continue to have, significant pressure to increase rates.

At the July 2012 meeting, the Board decided to adjust the temporary funding policy enacted in 2010 by adopting rates based on 100% of the EANC from the *2011 Actuarial Valuation Report,* rather than continuing to use the rates from the *2007 Actuarial Valuation Report.*

The funding policies, which determine the required contribution rates for LEOFF Plan 2, are found in RCW 41.45. Two of the general funding policy goals that apply to LEOFF Plan 2 are:

1. To dependably, systematically and fully fund Plan 2; and
2. To establish predictable long-term employer contribution rates that will remain a relatively constant proportion of future budgets.

Long-Term Economic Assumptions

Certain long-term economic assumptions are designated in RCW 41.45.035, which have an effect on pension contribution rates.

There are four long-term economic assumptions used to estimate the future cost of LEOFF Plan 2 and develop accurate current contribution rates for funding the plan. These economic assumptions currently are:

- Growth in Inflation – 2.75%
- Investment Rate of Return – 7.4%
- Growth in Salaries – 3.50%
- Growth in System Membership – 1.25%

The accuracy of these assumptions is reviewed every two years because of their importance to plan funding. Inaccurate assumptions will result in the need to change contribution rates, up or down, depending on whether the assumptions were too conservative or too aggressive. These economic assumptions were established in statute by the Legislature in 2001. The Board was given the authority to set long-term economic assumptions for LEOFF Plan 2 in 2003 and has reaffirmed the use of these assumptions.

Actuarial Experience Studies

The Office of the State Actuary (OSA) is required to submit an experience study every four years regarding demographic assumptions, which have an effect on the calculation of the actuarial liabilities for LEOFF Plan 2, such as mortality, disability, salary growth and retirement experience. The results of these experience studies are incorporated into future actuarial valuations. The results of the 1995-2000 Actuarial Experience Study were the basis for contribution rate reductions by the Legislature in 2002.

Demographic Assumptions

Member behavior also plays a crucial role in determining the cost of a pension plan. So in order to estimate the future cost of the plan and determine the appropriate current contribution rates to fund the plan, assumptions are required for things like how long a member will live, when a member will choose to retire, and the likelihood that a member will become disabled during their career. These assumptions are referred to as "demographic assumptions." The accuracy of these assumptions is reviewed every six years in an experience study, which compares the expected behavior of the pension plan's population to what was actually experienced.

POLICY OPTIONS

Continuing Current Rates

The rates currently collected are sufficient to fund the cost of all benefits in LEOFF 2 during the 2019-21 Biennium. Current rates are based on the *2015 Actuarial Valuation*, include subsequent temporary and supplemental rates prior to the 2018 Legislative Session, and were adopted by the Board through 2021. The current rates do not reflect the Board's updated economic assumptions adopted in the 2017 Interim. These include lowering the discount rate, general salary growth, and inflation assumptions. If the Board chooses to continue these rates, no Board action is required since these rates have previously been adopted through 2021.

Adopt Aggregate Rate Based on 2017 Actuarial Valuation

The Aggregate rate determines the normal cost and the actuarial accrued liability. Under this method, the unfunded actuarial present value of fully projected benefits is amortized over the future payroll of the active group. The entire contribution is considered normal cost and no UAAL exists.

Adopt 100% EANC Rate Based on the 2017 Actuarial Valuation Results

The preliminary contribution rate levels based on the *2017 Actuarial Valuation* are lower than the rates currently collected, due in part to the lower economic assumptions and changes in plan experience.

OPTIONS

Summary of options:

	1. Maintain Current Adopted Rates	2. Adopt Aggregate based on 2017 Actuarial Valuation*	3. Adopt 100% EANC based on 2017 Actuarial Valuation*
Member	8.75%	6.44%	8.59%
Employer	5.25%	3.86%	5.15%
State	3.50%	2.58%	3.44%

**Includes the recommended supplemental rate increase of 0.05% member, 0.02% employer, and 0.02% state to account for SSB 6214.*

Estimated 2019-2021 Budget Impacts Comparison			
(Dollars in Millions)	Current Adopted Rates	2017 Valuation 100% EANC Rates	Increase
2019-2021			
General Fund	$151	$148	($3)
Non-General Fund	$0	$0	$0
Total State	**$151**	**$148**	**($3)**
Local Government	$226	$222	($4)
Total Employer	**$376**	**$370**	**($7)**
Total Employee	**$376**	**$370**	**($7)**

SUPPORTING INFORMATION

Appendix A: LEOFF Plan 2 Rate Setting Statutes

Appendix B: LEOFF Plan 2 Historical Contribution Rates

Appendix C: Supplemental Rate History

Appendix D: OSA Fiscal Note for SB 6214

APPENDIX A: LEOFF PLAN 2 RATE SETTING STATUES

RCW 41.26.720

(1) The Board of trustees have the following powers and duties and shall:

(a) Adopt actuarial tables, assumptions, and cost methodologies in consultation with an enrolled actuary retained by the board. The state actuary shall provide assistance when the board requests. The actuary retained by the board shall utilize the aggregate actuarial cost method, or other recognized actuarial cost method based on a level percentage of payroll, as that term is employed by the American academy of actuaries. In determining the reasonableness of actuarial valuations, assumptions and cost methodologies, the actuary retained by the board shall provide a copy of all such calculations to the state actuary. If the two actuaries concur on the calculations, contributions shall be made as set forth in the report of the board's actuary. If the two actuaries cannot agree, they shall appoint a third, independent, enrolled actuary who shall review the calculations of the actuary retained by the board and the state actuary. Thereafter, contributions shall be based on the methodology most closely following that of the third actuary.

RCW 41.45.0604

(1) Not later than September 30, 2004, and every even-numbered year thereafter, the law enforcement officers' and firefighters' plan 2 retirement board shall adopt contribution rates for the law enforcement officers' and firefighters' retirement system plan 2 as provided in RCW 41.26.720(1)(a).

(2) The law enforcement officers' and firefighters' plan 2 retirement board shall immediately notify the directors of the office of financial management and department of retirement systems of the state, employer, and employee rates adopted by the board. The rates shall be effective for the ensuing biennial period, subject to legislative modification.

RCW 41.45.070

(2) In addition to the basic member, employer, and state contribution rate established in RCW 41.45.0604 for the law enforcement officers' and firefighters' retirement system plan 2, the department shall also establish supplemental rates to pay for the cost of additional benefits, if any, granted to members of the law enforcement officers' and firefighters' retirement system plan 2. Except as provided in (6) of this section, these supplemental rates shall be calculated by the actuary retained by the law enforcement officers' and firefighters' board and the state actuary through the process provided in RCW 41.26.720(1)(a) and the state treasurer shall transfer the additional required contributions regardless of language to the contrary contained in the statute which authorizes the additional benefits.

RCW 44.44.040

The office of the state actuary shall have the following powers and duties:

(7) Provide actuarial assistance to the law enforcement officers' and firefighters' plan 2 retirement board as provided in chapter 2, laws of 2003. Reimbursement for those services shall be made to the state actuary under RCW 39.34.130 and 41.26.720(5).

APPENDIX B: LEOFF PLAN 2 HISTORICAL CONTRIBUTION RATES

Effective	Member	Employer	State	Expense
7/1/2017[6]	8.75%	5.25%	3.50%	0.18%
7/1/2015	8.41%	5.05%	3.36%	0.18%
7/1/2013	8.41%	5.05%	3.36%	0.18%
9/1/2009	8.46%	5.08%	3.38%	0.16%
7/1/2009	8.45%	5.07%	3.38%	0.16%
7/1/2008	8.83%	5.30%	3.53%	0.16%
9/1/2007	8.64%	5.19%	3.45%	0.16%
7/1/2007	8.60%	5.17%	3.43%	0.18%
9/1/2006	7.85%	4.72%	3.13%	0.18%
7/1/2006	7.79%	4.68%	3.11%	0.19%
9/1/2005	6.99%	4.20%	2.79%	0.19%
7/1/2005	6.75%	4.05%	2.70%	0.19%
9/1/2004	5.09%	3.06%	2.03%	0.19%
2/1/2004	5.07%	3.04%	2.03%	0.22%
7/1/2002	5.05%	3.03%	2.02%	0.22%
5/1/2002	4.39%	2.64%	1.75%	0.22%
4/1/2002	4.39%	2.64%	1.75%	0.23%
7/1/2001	4.50%	2.70%	1.80%	0.23%
9/1/2000	6.78%	4.07%	2.71%	0.23%
7/1/2000	5.41%	3.25%	2.16%	0.23%
5/1/2000	5.41%	3.25%	2.16%	0.25%
9/1/1999	5.87%	3.52%	2.35%	0.21%
7/1/1999	5.87%	3.52%	2.35%	0.21%
9/1/1997	8.48%	5.09%	3.39%	0.18%
9/1/1996	8.43%	5.06%	3.37%	0.20%
9/1/1995	8.41%	5.05%	3.36%	0.20%
3/1/1994	8.41%	5.05%	3.36%	0.17%
9/1/1993	8.41%	5.05%	3.36%	0.22%
1/1/1992	7.01%	4.21%	2.80%	0.22%
7/1/1989	7.60%	4.56%	3.04%	0.22%
9/1/1988	8.09%	4.85%	3.24%	0.22%
7/1/1987	8.09%	4.85%	3.24%	0.16%
7/1/1985	7.83%	4.70%	3.13%	0.16%
7/1/1983	7.90%	4.74%	3.16%	0.16%
7/1/1981	7.74%	4.65%	3.09%	0.16%
7/1/1979	8.08%	4.85%	3.23%	0.09%
10/1/1977	8.14%	4.88%	3.26%	0.10%

[6] These rates adopted through the 2019-2021 biennium (June 30, 2021)

APPENDIX C: SUPPLEMENTAL RATE HISTORY

The Board has considered a supplemental rate increase for 14 benefit improvements. The Board adopted the supplemental rate recommended by OSA for 10 of those benefit improvements. The Board did not adopt the supplemental rate on the four most recent recommendations. In two cases it was determined the adopted rates were sufficient to cover the funding requirement. In the other two cases, rates were left unchanged because it was decided that the cost of the benefit change would be allowed to emerge in plan experience.

MEETING DATE	LEGISLATION	SUPPLEMENTAL RECOMMENDATION (Member, Employer, State)	ACTION	RATE EFFECTIVE
12/17/2003	HB 1205 (2003) - Fish & Wildlife Enforcement Officer LEOFF Membership	0.02%, 0.01%, 0.01%	**Adopted**	2/1/2004
7/28/2004	HB 2418 (2004) - Duty Disability Benefits	0.01%, 0.01%, 0.00%	**Adopted**	9/1/2004
	HB 2419 (2004) - Duty Death Benefits	0.01%, 0.01%, 0.00%		
7/27/2005	SB 5615 (2005) - Duty Disability Benefits	0.23%, 0.14%, 0.09%	**Adopted**	9/1/2005
	HB 1936 (2005) - EMT LEOFF Membership	0.01%, 0.01%, 0.00%		
5/24/2006	HB 2932 (2006) Catastrophic Disability	0.02%, 0.01%, 0.01%	**Adopted**	9/1/2006
	SHB 2933 (2006) Occupational Disease Death Special Benefit	0.01%, 0.01%, 0.00%		
	SB 6723 (2006) Survivor Health Care Insurance Reimbursement	0.03%, 0.02%, 0.01%		
7/23/2007	HB 1833 (2007) Occupational Disease Presumption	0.04%, 0.02%, 0.02%	**Adopted**	9/1/2007
7/22/2009	HB 1953 (2009) – Fish & Wildlife Enforcement Officer Svc Credit Transfer	0.01%, 0.01%, 0.00%	**Adopted**	9/1/2009
7/28/2010	HB 2519 (2010) – Duty Death Benefits (Lakewood Omnibus legislation)	0.05%, 0.03%, 0.02%	**NOT Adopted** supplemental rate. Current rates were sufficient to cover funding requirement.	
	HB 1679 (2010) - Catastrophic Disability. Health Insurance	0.13%, 0.08%, 0.05%		
7/27/2011	HB 2070 (2011) Furlough	0.02%, 0.01%, 0.01%	**NOT Adopted**	

Multiple Agency Fiscal Note Summary

Bill Number: 6214 S SB	**Title:** PTSD/law enf. & firefighters

Estimated Cash Receipts

NONE

Estimated Expenditures

Agency Name	2017-19			2019-21			2021-23		
	FTEs	GF-State	Total	FTEs	GF-State	Total	FTEs	GF-State	Total
Washington State Health Care Authority	.0	0	0	.0	0	0	.0	0	0
Department of Retirement Systems	Non-zero but indeterminate cost and/or savings. Please see discussion.								
Department of Labor and Industries	Non-zero but indeterminate cost and/or savings. Please see discussion.								
Law Enforcement Officers' and Fire Fighters' Plan 2 Retirement Board	.0	0	0	.0	0	0	.0	0	0
Actuarial Fiscal Note - State Actuary	.0	300,000	300,000	.0	800,000	800,000	.0	800,000	800,000
Total	0.0	$300,000	$300,000	0.0	$800,000	$800,000	0.0	$800,000	$800,000

Estimated Capital Budget Impact

NONE

Prepared by: Devon Nichols, OFM	**Phone:** (360) 902-0582	**Date Published:** Final 3/ 2/2018

* See Office of the Administrator for the Courts judicial fiscal note

** See local government fiscal note

FNPID: 52798

FNS029 Multi Agency rollup

Part II: Narrative Explanation

II. A - Brief Description Of What The Measure Does That Has Fiscal Impact

Briefly describe by section number, the significant provisions of the bill, and any related workload or policy assumptions, that have revenue or expenditure impact on the responding agency.

II. B - Cash receipts Impact

Briefly describe and quantify the cash receipts impact of the legislation on the responding agency, identifying the cash receipts provisions by section number and when appropriate the detail of the revenue sources. Briefly describe the factual basis of the assumptions and the method by which the cash receipts impact is derived. Explain how workload assumptions translate into estimates. Distinguish between one time and ongoing functions.

II. C - Expenditures

Briefly describe the agency expenditures necessary to implement this legislation (or savings resulting from this legislation), identifying by section number the provisions of the legislation that result in the expenditures (or savings). Briefly describe the factual basis of the assumptions and the method by which the expenditure impact is derived. Explain how workload assumptions translate into cost estimates. Distinguish between one time and ongoing functions.

Part III: Expenditure Detail

III. A - Expenditures by Object Or Purpose

	FY 2018	FY 2019	2017-19	2019-21	2021-23
FTE Staff Years					
A-Salaries and Wages					
B-Employee Benefits		300,000	300,000	800,000	800,000
C-Professional Service Contracts					
E-Goods and Other Services					
G-Travel					
J-Capital Outlays					
M-Inter Agency/Fund Transfers					
N-Grants, Benefits & Client Services					
P-Debt Service					
S-Interagency Reimbursements					
T-Intra-Agency Reimbursements					
9-					
Total:	$0	$300,000	$300,000	$800,000	$800,000

Part IV: Capital Budget Impact

Part V: New Rule Making Required

Identify provisions of the measure that require the agency to adopt new administrative rules or repeal/revise existing rules.

SUMMARY OF RESULTS

BRIEF SUMMARY OF BILL: This bill adds Post-Traumatic Stress Disorder (PTSD) to the list of occupational diseases, and creates a rebuttable presumption for LEOFF members that PTSD is an occupational disease.

COST SUMMARY

We estimate this bill will have a cost to the retirement system because members who leave employment due to PTSD are eligible for disability or death benefits from the pension plan. We estimate, at a minimum, this bill creates cost impacts as outlined in the tables below.

Impact on Contribution Rates (Effective 09/01/2018)	
Fiscal Year 2019 State Budget	**LEOFF**
Employee (Plan 2)	**0.05%**
Total Employer	**0.03%**
Total State	**0.02%**

Budget Impacts			
(Dollars in Millions)	**2018-2019**	**2019-2021**	**25-Year**
General Fund-State	$0.3	$0.8	$15.8
Local Government	$0.5	$1.2	$23.6
Total Employer	**$0.8**	**$2.0**	**$39.4**

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

- This bill also increases benefits for members of LEOFF 1 but we expect the costs will not impact contributions in LEOFF 1 due to the number of members impacted and the Plan's current funding level.
- There is uncertainty in the prevalence of PTSD among LEOFF 2 members.
  - Reported prevalence of PTSD varies by data source.
  - LEOFF 2 could experience an unexpected decline in active membership.
- We do not expect this bill will result in an increase in the total number of annual deaths but we do expect an increase in the total number of annual disabilities. Additionally, we expect a shift in the benefits paid from non-duty to duty-related for both deaths and disabilities.
- We relied on data from DRS, L&I, the CDC, and *The Badge of Life* to help determine the costs in this bill.
- Actual duty-related death and disability experience may be different than what we assumed in the costs shown above. For example, if this bill results in five additional duty-related deaths per year, instead of our assumption of two, then we expect the resulting total employer budget impacts would be $98 million over a 25-year period.

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:

- Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF).

This bill adds Post-Traumatic Stress Disorder (PTSD) to the list of occupational diseases, and creates a rebuttable presumption for LEOFF members that PTSD is an occupational disease if it manifests after the member has served at least ten years.

For plan members hired after the effective date of the bill, if their employer requires them to have a psychological examination at the time of hire, then the presumption only applies if the member was screened for PTSD at hire, and the exam showed no evidence of existing PTSD.

PTSD will not be considered an occupational disease if the disorder is directly related to disciplinary action, work evaluation, job transfer, layoff, demotion, or termination taken in good faith by an employer.

The presumption applies to the following fire fighters:

- Full-time, fully compensated fire fighters as defined in RCW 41.26.030(16)(a) and (b).
- Supervisors as defined in RCW 41.26.030(16)(c).
- Supervisors employed on a full-time, fully compensated basis as a fire fighter of a private sector employer's fire department that includes over fifty fire fighters.
- Emergency Medical Technicians (EMTs) employed by LEOFF employers.

The presumption applies to the following law enforcement officers:

- Deputy sheriffs, as defined in RCW 41.26.030(18)(b).
- Full-time commissioned city police officers, as defined in RCW 41.26.030(18)(c).
- Public safety officers, or directors of public safety, as defined in RCW 41.26.030(18)(e).

Effective Date: 90 days after session.

HOW THE SUBSTITUTE DIFFERS FROM THE ORIGINAL VERSION

The following list includes only the changes that impact the pricing of the bill. For a complete list of changes to the current version of the bill, please refer to the bill reports prepared by legislative staff.

The substitute adds fire fighters, including supervisors, employed on a full-time, fully compensated basis as a fire fighter of a private sector employer's fire department that includes over 50 such fire fighters, to the individuals exempt from the Department of Labor and Industries' (L&I) rule regarding stress and to the presumption.

The substitute also requires that for the presumption to apply, the PTSD must develop after the individual has served at least ten years.

It also adds a condition to the exemption that individuals hired after the effective date must submit to a psychological exam that rules out PTSD, except when the employer does not provide the exam.

PTSD will not be considered an occupational disease if the disorder is directly related to disciplinary action, work evaluation, job transfer, layoff, demotion, or termination taken in good faith by an employer.

What Is The Current Situation?

Under current law, fire fighters who are members of LEOFF and experience certain medical conditions are presumed to have contracted the medical condition from their occupation. The conditions covered in statute include respiratory disease, heart problems, certain cancers, and certain infectious diseases for fire fighters only. A fire fighter must have ten years of service in order to qualify for the cancer presumption.

According to the Department of Retirement Systems (DRS), a mental condition like PTSD can be considered an occupational disease if it is related to a single traumatic incident (e.g., the Oso landslide). However, these conditions cannot be considered an occupational disease if they result from multiple incidents over a longer term (e.g., having responded to the scenes of many car crashes throughout a career).

If a death is ruled duty-related, health insurance is provided to their surviving beneficiaries under RCW 41.05.080, and COBRA benefits under RCW 41.26.470.

Additionally, presumptions established for fire fighters, law enforcement officers and EMTs are applicable after termination of service for three months for each year of service, not to exceed five years.

The presumption of occupational disease can be rebutted by a preponderance of evidence. Additionally, the presumption does not apply to fire fighters who develop a heart or lung condition and who regularly use tobacco products or have a history of tobacco use.

EMTs may be members of LEOFF if they are full-time, fully compensated employees with a public employer. Fire investigators are generally members of PERS and are not members of LEOFF.

Who Is Impacted And How?

We estimate this bill could affect any of the 17,186 active members and 2,400 eligible inactive members of LEOFF 2 through improved benefits. At a minimum, we expect improved benefits will be paid for two active member deaths and three active member disabilities each year.

Survivors of members that experience a duty-related death will receive enhanced benefits that include an unreduced pension for benefits that begin before normal retirement age, subject to a minimum of 10 percent of final average salary, a lump sum of $238,587 as of July 1, 2016, and healthcare coverage for the surviving family. Members who become disabled due to duty-related causes also receive greater benefits that include an unreduced pension subject to the same minimum benefit. Further, if the disability is deemed catastrophic, as defined under RCW 41.26.470, the member and their family will also receive healthcare coverage.

This bill impacts all LEOFF 2 members and their employers through increased contribution rates.

As of the *June 30, 2016, Actuarial Valuation Report* (AVR), LEOFF 1 has 62 active members and 107 retirees within the eligible window. Given the small number of members eligible for these enhanced benefits and the current level of funding in LEOFF 1, we expect no impact to contribution rates in LEOFF 1.

WHY THIS BILL HAS A COST AND WHO PAYS FOR IT

Why This Bill Has A Cost

This bill adds PTSD to the list of occupational diseases. A member who became disabled due to PTSD or a beneficiary of a member who dies as a result of PTSD (e.g., suicide) can receive duty-related benefits. We do not expect this bill will result in an increase in the total number of annual deaths but we do expect an increase in the total number of annual disabilities since this bill expands the coverage of occupational diseases. Additionally, we expect a shift in the benefits paid from non-duty to duty-related for both deaths and disabilities. Duty-related benefits are typically more costly to the pension system and require higher contributions to cover the costs.

Who Will Pay For These Costs?

For LEOFF 2, any costs that arise from this bill will be divided according to the standard funding method for the plan: 50 percent member, 30 percent employer, and 20 percent state.

No contributions are required for LEOFF 1 while that plan remains fully funded.

HOW WE VALUED THESE COSTS

Assumptions We Made

Based on input from L&I and DRS on how they interpret this bill, we assume a beneficiary of a member who commits suicide as a result of PTSD would be entitled to duty-related death benefits. We do not expect this bill will result in an increase in the total number of deaths but we assume a higher proportion of deaths will be duty-related. We relied on data from *The Badge of Life* to determine the expected number of additional annual duty-related deaths caused by PTSD. We increased our duty-related death rate assumption from 0.035 percent to 0.048 percent for all active members. We estimate this assumption change will move two active deaths from non-duty to duty-related benefit provisions each year. The table below details our expectation, under Current Law and under this bill (Estimated Cost), for the number of duty and non-duty deaths per year.

Expected Annual Deaths		
Actives	**Current Law**	**Estimated Cost**
Duty	6	8
Non-Duty	21	19
Total Deaths	**27**	**27**

We assumed the increase in duty-related death benefits would apply to active members only and there would be no increase in duty-related death benefits for eligible inactive members.

Under this bill, members must have ten years of service to be eligible for a duty-related benefit. For simplicity in our model, we assumed a constant duty-related death rate assumption for all ages. While our assumption may include some members with less than ten years of service, we estimate the impact is very small and falls within the variance of estimated deaths by the sources we studied. For disabilities, we expect the ten-year service provision to be immaterial to our analysis.

We expect this bill will increase the number of total disabilities because it expands coverage of occupational diseases to include PTSD. To develop the cost of this bill, we relied on experience data from DRS regarding the number of PTSD claims they receive and how many claims they deny. We then increased the expected total number of disabilities in our model by two each year.

In addition, we assume one current non-duty related disability each year would now be duty-related because of this bill. Based on data from DRS, we observed an average of one non-duty related PTSD disability request approved (or paid out) each year. Under this bill, we expect any future PTSD disability requests that DRS pays out will be considered duty-related. The increase in costs from this assumption is about three percent of the costs outlined on page one. The table on the next page compares how we expect the counts of disability, by type, to change under this bill.

Expected Annual Disabilities		
	Current Law	Estimated Cost
Duty	**34**	**37**
Catastrophic	4	4
Occupational	30	33
Non-Duty	**5**	**4**
Total Disabilities	**39**	**41**

This bill could also change our percent of duty-related disabilities that are occupational. We currently assume 88 percent of duty-related disabilities are occupational, and the other 12 percent are catastrophic. For this pricing, we assume no change in this relationship.

Currently, we do not model the potential for LEOFF members to return to work once they start collecting disability benefits from the plan. To price this bill, we used data from DRS and assumed every member that becomes disabled would remain on disability.

We assume this bill will provide the same benefit increases for EMTs as provided for fire fighters and law enforcement officers.

We assumed the impact to LEOFF 1 is not material for the reasons noted earlier, and as such did not include the impact of this bill on that plan.

This analysis includes the most recent economic assumptions adopted by the LEOFF 2 Board during the 2017 Interim. This adoption lowered the long-term rate of investment return assumption to 7.40 percent, the general salary growth assumption to 3.50 percent, and the inflation assumption to 2.75 percent.

Otherwise, we developed these costs using the same assumptions as disclosed in the 2016 AVR, Projections Disclosures, and *Risk Assessment* analysis available on our website.

How We Applied These Assumptions

To prepare our analysis, we increased the rate of disablement for LEOFF 2 members and valued one non-duty disability as duty, compared to current law. We also applied our revised assumption for duty-related death to the duty-related lump sum and the annuity death benefits for active members. Lastly, we applied these assumptions to the medical premium reimbursement benefits.

To estimate the fiscal impact of this bill, we compared projected pension contributions under current law to the projected contributions we expect under this bill. To determine the projected contributions under current law, also known as the "base," we relied on the AVR with the most recent economic assumptions. The base projected pension contributions reflect contributions from the current population as well as future new entrants. For the current population, contribution rates from the AVR are multiplied by future payroll. For the future new entrants, contribution rates under the Entry Age Normal Cost method are multiplied by future new entrant payroll. To determine the projected costs under this bill, we modified the base to reflect the provisions of the bill and our assumptions as described above.

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

Special Data Needed

We relied on *The Badge of Life*, a non-profit organization that studies the prevalence and impact of PTSD on police officers, to determine the number of additional duty-related deaths under this bill. We felt this information was appropriate to rely on since suicide fatalities could be considered duty-related under this bill. The source states that police suicide fatalities were approximately 12 per 100,000 of population in 2016. This information was used along with our AVR to estimate two additional duty-related deaths in LEOFF 2. We assumed this suicide fatality rate would be similar for fire fighters so we applied this rate to all of LEOFF.

We analyzed data from DRS to determine the number of additional annual disabilities under this bill. DRS provided us with information on the number of disability requests, by year, related to PTSD. Over a five-year period, on average, DRS received 6.4 annual requests for disability and approved 4.8 of them. If we assume all disability requests would be approved under this bill then we would expect 1.6 additional disabilities a year. For this reason, we assumed two additional disabilities a year. Please see the table below for additional detail.

Number of PTSD Disability Requests

Annual Requests	Duty Approved	Duty Denied	Non-Duty Approved	Non-Duty Denied	Total
2017	5	0	0	0	5
2016	7	3	1	0	11
2015	4	0	2	1	7
2014	2	1	2	0	5
2013	1	2	0	1	4
Totals	19	6	5	2	32

Source: Department of Retirement Services

Otherwise, we developed these costs using the same assets and data as disclosed in the AVR.

ACTUARIAL RESULTS

How The Liabilities Changed

This bill will impact the actuarial funding of LEOFF 2 by increasing the present value of future benefits payable under the systems as shown below.

Impact on Pension Liability			
(Dollars in Millions)	**Current***	**Increase**	**Total**
Actuarial Present Value of Projected Benefits			
(The Value of the Total Commitment to All Current Members)			
LEOFF 2	12,683	14.9	12,698
Unfunded Entry Age Accrued Liability			
(The Value of the Total Commitment to All Current Members Attributable to Past Service that is Not Covered by Current Assets)			
LEOFF 2	(628)	0.5	(627)

Note: Totals may not agree due to rounding.
**Current liabilities will not match the 2016 AVR. The liabilities reflect updated economic assumptions adopted by the LEOFF 2 Board after the publication of the AVR.*

How The Assets Changed

This bill does not change asset values, so there is no impact on the actuarial funding of LEOFF due to asset changes.

How The Present Value Of Future Salaries (PVFS) Changed

This bill will impact the actuarial funding of LEOFF 2 by decreasing the PVFS of the members. The impact of the decreasing PVFS for current members is shown below.

Present Value of Future Salaries			
(Dollars in Millions)	**Current***	**Increase**	**Total**
Actuarial Present Value of Future Salaries			
(The Value of the Future Salaries Expected to be Paid to Current Members)			
LEOFF 2	**$19,366**	**($21.0)**	**$19,345**

**Current PVFS will not match the 2016 AVR. The liabilities assume economic assumptions adopted by the LEOFF 2 Board after publication of the AVR.*

The PVFS decreases because we assume an increase in disablements. In other words, members are expected to have a shorter working career.

How Contribution Rates Changed

For LEOFF 2, the rounded increase in the required actuarial contribution rate results in the supplemental contribution rate shown on page one that applies in the current biennium. However, we will use the un-rounded rate increase shown on the next page to measure the budget changes in future biennia.

Impact on Contribution Rates (Effective 09/01/2018)	
System/Plan	**LEOFF**
Current Members	
Employee (Plan 2)	0.046%
Employer	0.028%
State	0.018%
New Entrants*	
Employee (Plan 2)	0.047%
Employer	0.028%
State	0.019%

**Rate change applied to future new entrant payroll and used to determine budget impacts only. Current members and new entrants pay the same contribution rate.*

How This Impacts Budgets And Employees

Budget Impacts		
(Dollars in Millions)	**LEOFF**	**Total**
2018-2019		
General Fund	$0.3	$0.3
Non-General Fund	0.0	0.0
Total State	**$0.3**	**$0.3**
Local Government	0.5	0.5
Total Employer	**$0.8**	**$0.8**
Total Employee	**$0.8**	**$0.8**
2019-2021		
General Fund	$0.8	$0.8
Non-General Fund	0.0	0.0
Total State	**$0.8**	**$0.8**
Local Government	1.2	1.2
Total Employer	**$2.0**	**$2.0**
Total Employee	**$2.0**	**$2.0**
2018-2043		
General Fund	$15.8	$15.8
Non-General Fund	0.0	0.0
Total State	**$15.8**	**$15.8**
Local Government	23.6	23.6
Total Employer	**$39.4**	**$39.4**
Total Employee	**$39.4**	**$39.4**

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.

Comments On Risk

Our office performs annual risk assessments to help us demonstrate and assess the effect of unexpected experience on pension plans. The risk assessment allows us to measure how affordability and funded status can change if investment experience, expected state revenue growth, and inflation do not match our long-term assumptions. Our annual risk assessment also considers past practices, for funding and benefit enhancements, and their impact on pension plan risk if those practices continue. For more information, please see our *Risk Assessment* webpage.

In terms of risk, we would expect this bill would worsen the affordability and solvency risk measures associated with LEOFF 2 because it increases the obligations of the plan and contributions required to fund it. In the short-term, the funded status would be expected to worsen as a result of the plan becoming more costly. Over the long-term, LEOFF 2 would be expected to return to its long-term funded status level if future assumptions are realized and all required contributions are made.

HOW THE RESULTS CHANGE WHEN THE ASSUMPTIONS CHANGE

Actual duty-related death and disability experience may be different from what we assumed in pricing this bill. For this reason, we considered a different set of assumptions to demonstrate the potential change in cost from this bill:

- **Additional Duty-Related Deaths** – We assume five additional active member duty-related deaths per year above current law. Data from the Center for Disease Control suggests a higher suicide rate than *The Badge of Life*, so we considered the impact of additional duty-related deaths above the assumptions used to price the bill.
- **Additional Duty-Related Disabilities** – We assume eleven additional duty-related disabilities per year above current law. Based on analysis for SB 6214, L&I expects 34 duty-related disability claims related to PTSD. We believe some of the L&I disability claims may already be included in our disability counts so we performed sensitivity on a number between our estimated cost and L&I's expected increase in disability claims.

The table on the next page displays the impact of additional duty-related disabilities and deaths and the 25-year budget impact over the assumptions we used to price this bill.

How the Estimated Cost Can Increase			
Scenario	Estimated Cost	Additional Duty Deaths	Additional Duty Disabilities
Number of Additional Annual Duty Deaths*	2	5	2
Number of Additional Annual Duty Disabilities*	3	3	11
Example Range of 25-Year Budget Impacts			
(Dollars in Millions)			
General Fund-State	$16	$39	$17
Total Employer	**$39**	**$98**	**$42**

**Above current law.*

The cost of this bill would increase by more than 150 percent if we expect five additional annual duty-related deaths than under current law. However, eleven additional duty-related disabilities would increase the cost of this bill by approximately five percent. The cost impact is larger for additional duty-related deaths because: 1) each beneficiary would receive a lump sum death benefit in addition to an annuity, payable for the beneficiary's life; and 2) members who go out on disability are expected to have a shorter lifespan (fewer disability retirement payments) than non-disabled retirees.

It's important to note, the cost of members who become disabled under this bill may be higher than estimated in this analysis. We currently assume disabled members will have a shorter lifespan and thus receive fewer benefit payments than healthy members receive. As an example, a 55 year old service retiree is expected to receive 11 more years of benefits than a 55 year old disabled retiree. If the members that become disabled with a mental health condition have similar future health as service retirees then the costs shown on page one of this fiscal note would increase by approximately 10 percent.

We researched the prevalence of PTSD among fire fighters and found the prevalence varied among the data sources[1], from 3.9 percent to 22 percent. For comparison, the prevalence of PTSD among all adults in the U.S. is 3.5 percent. We acknowledge that prevalence is only one step in the process for determining the number impacted under this bill because a member also has to report their disability. We were unable to find research on the rate at which PTSD is reported. For this reason, we provide a wide range in the number of additional annual duty disabilities that result from this bill as part of our sensitivity analysis in this section.

The costs included in this analysis do not reflect changes in retention in LEOFF 2 members. PTSD can occur due to repeated exposures to traumas. Under this bill, members with PTSD via repeated exposures to trauma would be eligible for disablement. Based on the range in prevalence rates of PTSD, this could be 600 to 3,700 current members of LEOFF 2.

[1]*Firefighting and Mental Health: Experiences of Repeated Exposure to Trauma* by Sara A. Jahnke, Walker S. Carlos Poston, Christopher K. Haddock, Beth Murphy.

Based on input from L&I and DRS, we assume a beneficiary of a member who commits suicide as a result of PTSD would be entitled to duty-related death benefits. The costs of this bill will materially change if beneficiaries of members who committed suicide related to PTSD are determined not eligible for duty-related death benefits. If suicide is not eligible for duty-related benefits, then we would only expect a budget impact for this bill due to additional disabilities.

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 2018 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.
6. We prepared this fiscal note for the Legislature during the 2018 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.

Lisa Won, ASA, FCA, MAAA
Deputy State Actuary

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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. Under this method, all plan costs (for past and future service credit) are included under the normal cost. Therefore, the method does not produce an unfunded actuarial accrued liability outside the normal cost. It's most common for the normal cost to be determined for the entire group rather than on an individual basis for this method.

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 most commonly 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 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 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.

Unfunded EAN Liability: The excess, if any, of the present value of benefits calculated under the EAN cost method over the valuation assets. This is the portion of all 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.

Contribution Rate Setting Options

July 25, 2018

Purpose of Contributions

- Pre-fund pension obligation
- Members and employers make contributions to pension trust fund
  - During member's working life
  - As a percent of salary
- Contributions invested and grow with earnings
- Accumulated fund at retirement = Cost of all future benefit payments

About Rate Setting

- Systematic actuarial funding to pre-fund future pension obligation
- Adopted by the Board
- Biennial basis
- Actuary recommendation
- State law defines certain funding policy and some assumptions
- Board funding policy and assumption setting

Two Types of Contribution Rate

- Board adopts two types of contribution rates
  - Basic rates
  - Supplemental rates

Basic Rates

- Rate recommendation and options calculated by OSA
- Rate options calculated based on statute, Board policies, and past practices
- Every even-numbered year (RCW 41.45.0604)
- Based on results of odd-year actuarial valuation
- Valuation is audited by outside actuary
- Rates apply for ensuing biennium, typically two years of same rate

Supplemental Rates

- Temporary rate increases to fund the cost of benefit improvements not included in basic rates
- Added to basic rates during the basic rate setting cycle
- SB 6214

Impact on Contribution Rates (Effective 9/1/2018)	
Fiscal Year 2019 State Budget	LEOFF
Member	0.05%
Employer	0.03%
State	0.02%

Supplemental Rate History

- **Considered supplemental increase for 14 benefit improvements with cost**
- **Adopted supplemental increase for 10 improvements**

LEGISLATION	RATE INCREASE (Member, Employer, State)	ADOPTED	EFFECTIVE
HB 1205 (2003) - Fish & Wildlife Enforcement Officer LEOFF Membership	0.02%, 0.01%, 0.01%	12/17/2003	2/1/2004
HB 2418 (2004) - Duty Disability Benefits	0.01%, 0.01%, 0.00%	7/28/2004	9/1/2004
HB 2419 (2004) - Duty Death Benefits	0.01%, 0.01%, 0.00%		
SB 5615 (2005) - Duty Disability Benefits	0.23%, 0.14%, 0.09%	7/27/2005	9/1/2005
HB 1936 (2005) - EMT LEOFF Membership	0.01%, 0.01%, 0.00%		
HB 2932 (2006) Catastrophic Disability	0.02%, 0.01%, 0.01%	5/24/2006	9/1/2006
SHB 2933 (2006) Occupational Disease Death Special Benefit	0.01%, 0.01%, 0.00%		
SB 6723 (2006) Survivor Health Care Insurance Reimbursement	0.03%, 0.02%, 0.01%		
HB 1833 (2007) Occupational Disease Presumption	0.04%, 0.02%, 0.02%	7/23/2007	9/1/2007
HB 1953 (2009) – Fish & Wildlife Enforcement Officer Svc Credit Transfer	0.01%, 0.01%, 0.00%	7/22/2009	9/1/2009

Fiscal Note

- Substitute Senate Bill 6214 – PTSD/Occupational Disease Presumption
- Increase in duty related benefits; more costly than non-duty benefits

Impact on Contribution Rates (Effective 9/1/2018)	
Fiscal Year 2019 State Budget	LEOFF
Member	0.05%
Employer	0.03%
State	0.02%

Budget Impacts (Dollars in Millions)			
	2018-2019	2019-2021	25-Year
General Fund-State	$0.3	$0.8	$15.8
Local Government	$0.5	$1.2	$23.6
Total Employer	$0.8	$2.0	$39.4

Strategic Priority – Financial Integrity

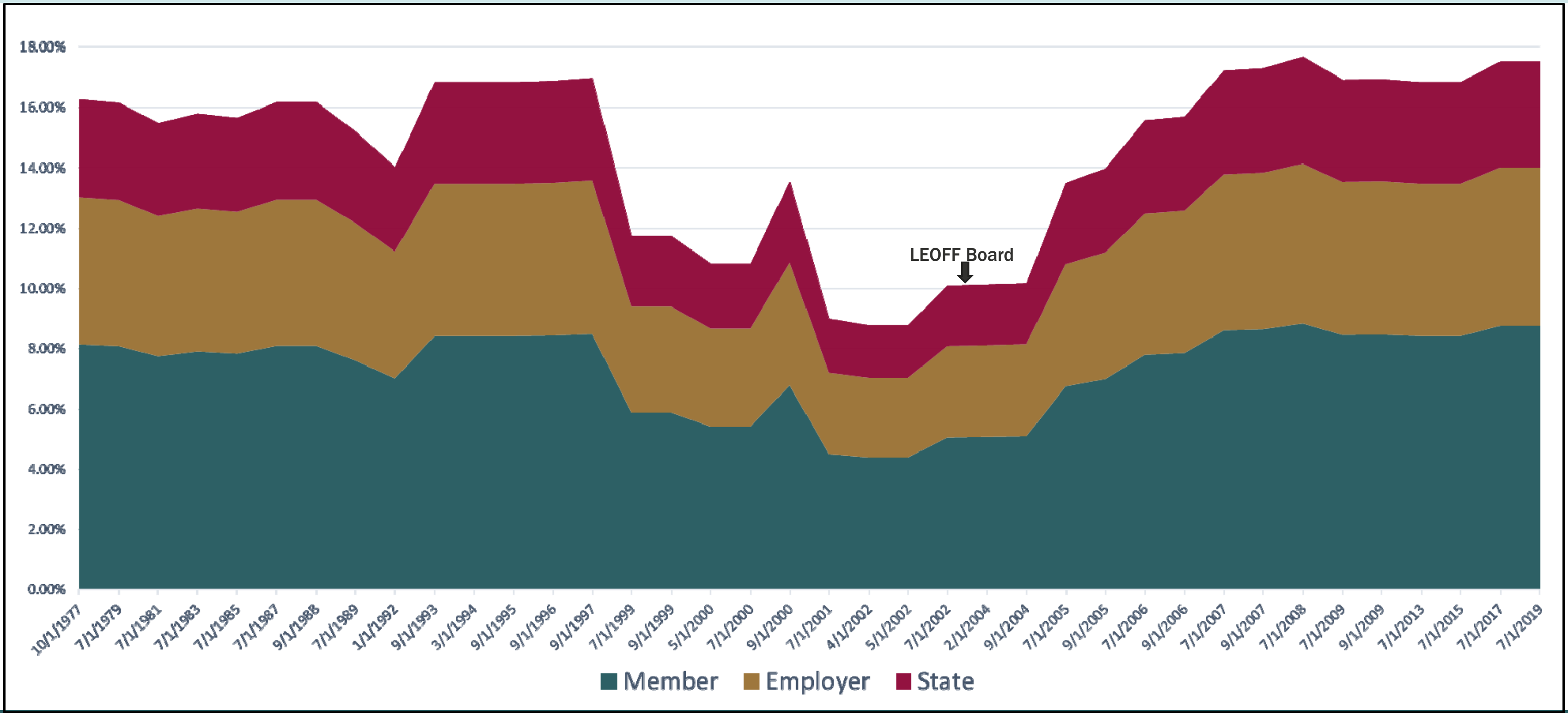
- Fully-funded Status
  - Maintain 100% or better funded status

- Stable Contribution Rates
  - Predictable increases

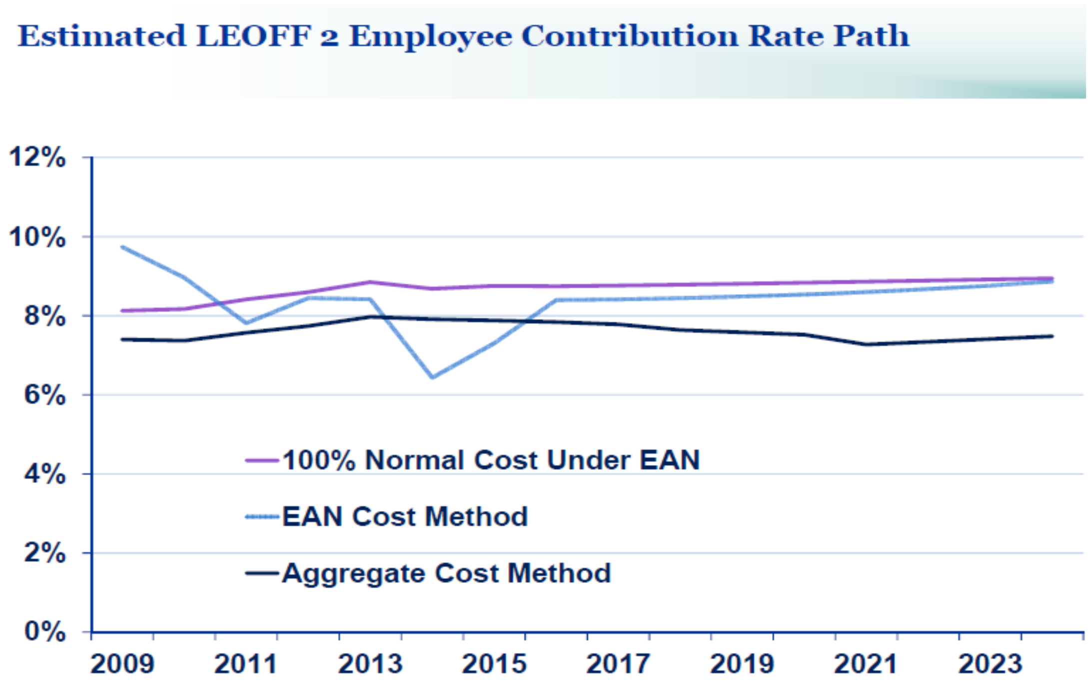
Previous Rate-setting Decisions

- Strategic Plan
- Four-year rate phase-in (2005-2009) / Rate stability
- Contribution rate floor (minimum contribution rates)
- Supplemental rates (2003, 2004, 2005, 2006, 2007, 2009)
- Multi-year rates (eg. 2017-2021)

LEOFF 2 Contribution Rates 1977 to Present



Contribution Rate Path



Policy Options

Continuing Current Rates

- The rates currently collected are sufficient to fund the cost of all benefits in LEOFF 2 during the 2019-21 Biennium
- Current rates are based on the *2015 Actuarial Valuation*, include subsequent temporary and supplemental rates prior to the 2018 Legislative Session, and were adopted by the Board through 2021

Policy Options cont.

- **Adopt Aggregate Rate Based on 2017 Actuarial Valuation**
- The Aggregate rate determines the normal cost and the actuarial accrued liability. Under this method, the unfunded actuarial present value of fully projected benefits is amortized over the future payroll of the active group. The entire contribution is considered normal cost and no UAAL exists.

Policy Options cont.

Adopt Rates Based on 100% EANC from 2017 Actuarial Valuation Results

- The preliminary contribution rate levels based on the *2017 Actuarial Valuation* are lower than the rates currently collected, due in part to the lower economic assumptions and changes in plan experience
  - 100 Percent EANC - 100 percent of EANC, consistent with the plan's ACM and including minimum rates under the Board's funding policy since 2008

Options

	1. Maintain Current Adopted Rates	2. Adopt Aggregate based on 2017 Actuarial Valuation*	3. Adopt 100% EANC based on 2017 Actuarial Valuation*
Member	8.75%	6.44%	8.59%
Employer	5.25%	3.86%	5.15%
State	3.50%	2.58%	3.44%

***Includes the recommended supplemental rate increase of 0.05% member, 0.03% employer, and 0.02% state to account for SSB 6214.**

Estimated 2019-2021 Budget Impacts Comparison			
(Dollars in Millions)	Current Adopted Rates	2017 Valuation 100% EANC Rates	Increase
2019-2021			
General Fund	$151	$148	($3)
Non-General Fund	$0	$0	$0
Total State	**$151**	**$148**	**($3)**
Local Government	$226	$222	($4)
Total Employer	**$376**	**$370**	**($7)**
Total Employee	**$376**	**$370**	**($7)**

Thank You

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Select Committee on Pension Policy

P.O. Box 40914
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Regular Committee Meeting

July 17, 2018
10:00 a.m. – 12:15 p.m.*
House Hearing Room B
Olympia

AGENDA

10:00 a.m.	1.	**Approval of June Minutes**
10:05 a.m.	2.	**Actuarial Standard of Practice on Risk –** Matt Smith, State Actuary
10:30 a.m.	3.	**Update on Preliminary Valuation Results –** Luke Masselink, Senior Actuary
10:50 a.m.	4.	**Rate Recommendation to the PFC –** Stephanie Roman, Associate Policy Analyst

<u>**Work Sessions with Possible Public Testimony**</u>

11:10 a.m.	5.	**Annuity Purchase Options –** Corban Nemeth, Associate Policy and Data Analyst
11:35 a.m.	6.	**Month of Death –** Aaron Gutierrez, Senior Policy Analyst
12:00 p.m.	7.	**Spousal Consent –** Stephanie Roman
12:15 p.m.	8.	**Adjourn**

**These times are estimates and are subject to change depending on the needs of the Committee.*

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LEOFF Plan 2 Retirement Board

July 25, 2018

Handout: Decision on Initial Reports

1. **Definition of Child** - The LEOFF definition of "child" excludes children adopted after retirement from eligibility for benefits.

2. **Out of State Duty** - Members who are injured while responding to an emergency out of their jurisdiction are not entitled to LEOFF 2 duty disability or duty death benefits.

3. **Disabled Members Return to Work** - Disability benefits for members who recover from their disabilities are ambiguous if their previous employer refuses to hire them back.

4. **PEBB Coverage for Catastrophic Retirees** - Catastrophic disability retirees and their survivors have different medical insurance access than survivors of members killed in the line of duty.

5. **Standby Pay as Earnable Compensation** - Standby pay is not part of basic salary (reportable compensation) used in computing LEOFF Plan 2 contributions and pensions.

6. **Career Change Alternatives -** Since the passage of the Board's 2005 career change law, multiple issues have surfaced related to employers' interest in hiring LEOFF retirees into LEOFF positions.

7. **Survivor Option Election** - It may be considered unfair to have a member make their irrevocable retirement election for a survivor option without all the information that is important to them.

8. **Occupational Disease Benefits -** Certain medical conditions are presumed to be duty-related for Worker's Compensation and LEOFF Plan 2 pension purposes. Legislation was proposed in the 2018 session that sought to expand coverage of duty-related presumptions. This bill did not pass.

9. **Spousal Consent Requirement -** Under current law, a member who is retiring under LEOFF Plan 2 must provide written consent from their spouse for any survivorship option the member selects – except in the case of a joint 50% survivorship option. This means that a spouse must provide written consent even when his or her survivor benefit would be greater than 50%.

10. **Month-of-Death Retirement Payments -** In the month a retiree or survivor passes away, the Department of Retirement Systems prorates the last month benefit payment based on the number of days the person was alive in the month. Frequently this results in an invoice being sent to the family or estate to collect any amount that should have been prorated.

Decision on Initial Reports

July 25, 2018

Issue

- The Board must determine which initial report issues to receive comprehensive reports on during the 2018 interim.

1. Definition of Child

- The LEOFF definition of “child” excludes children adopted after retirement from eligibility for benefits.
  - The widow of a LEOFF Plan 1 disability retiree who adopted children after retirement, contends the exclusion of her children is discriminatory and seeks legislation to include children adopted after the date of retirement within the LEOFF definition of “child.”

2. Out of State Duty

- Members who are injured while responding to an emergency out of their jurisdiction are not entitled to LEOFF 2 duty disability or duty death benefits.
  - This issue arose from public safety officers responding to the domestic terrorist attack in Las Vegas.

3. Disabled Members Return to Work

- Disability benefits for members who recover from their disabilities are ambiguous if their previous employer refuses to hire them back.
  - Should DRS continue to pay a disability benefit to members who are no longer disabled?
  - Should DRS be able to bill the employer for the disability payments they made to the member while they were stuck in ambiguity?

4. PEBB Coverage for Catastrophic Retirees

- Catastrophic disability retirees and their survivors have different medical insurance access than survivors of members killed in the line of duty.
  - Catastrophic disability retirees/survivors do not have access to benefits through PEBB unless they were already receiving PEBB benefits through their employer.

5. Standby Pay as Earnable Compensation

- Standby pay is not part of basic salary (reportable compensation) used in computing LEOFF Plan 2 contributions and pensions.
  - Standby pay is reportable compensation for pension purposes in PERS and PSERS.

6. Career Change Alternatives

- Since the passage of the Board's 2005 career change law, multiple issues have surfaced related to employers' interest in hiring LEOFF retirees into LEOFF positions.
  - The Board's intent of the 2005 career change law has been circumvented in some instances through LEOFF retirees returning to work into traditionally LEOFF positions, while receiving their pension.
  - Some employers, especially in rural areas, are having difficulty recruiting qualified law enforcement officers and fire fighters.

7. Survivor Option Election

- It may be considered unfair to have a member make their irrevocable retirement election for a survivor option without all the information that is important to them.
  - Members must select a survivor option at the time of retirement and can not change that decision even if the amount of their benefit changes.
  - A policy reason for a member not being able to change their survivor option is mitigating anti-selection risks.

8. Occupational Disease Benefits

- Certain medical conditions are presumed to be duty-related for Worker's Compensation and LEOFF Plan 2 pension purposes. Legislation was proposed in the 2018 session that sought to expand coverage of duty-related presumptions. This bill did not pass.
  - Makes the occupational disease presumptions for certain fire fighters applicable to certain emergency medical technicians and public employee fire investigators.
  - Adds additional cancers to the cancer occupational disease presumption.
  - Creates an occupational disease presumption for heart problems and infectious diseases for law enforcement officers.

9. Spousal Consent Requirement

- Under current law, a member who is retiring under LEOFF Plan 2 must provide written consent from their spouse for any survivorship option the member selects – except in the case of a joint 50% survivorship option. This means that a spouse must provide written consent even when his or her survivor benefit would be greater than 50%.

10. Month-of-Death Retirement Payments

- In the month a retiree or survivor passes away, the Department of Retirement Systems prorates the last month benefit payment based on the number of days the person was alive in the month. Frequently this results in an invoice being sent to the family or estate to collect any amount that should have been prorated.

Thank You

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2018 AGENDA ITEMS CALENDAR

LEOFF Plan 2 Retirement Board

MEETING DATE	AGENDA ITEMS
Jan 17	Legislative Update Administrative Update
Feb 28	Legislative Update Administrative Update
March 28	Approval of Minutes 2018 Legislative Update Interim Planning Administrative Update Executive Session
April 25	Approval of Minutes Definition of Child – *Initial Consideration* Out of Jurisdiction Duty – *Initial Consideration* Disabled Members Return to Work – *Initial Consideration* PEBB Coverage for Catastrophic Retirees – *Initial Consideration* Standby Pay as Basic Salary – *Initial Consideration* PTSD Benefits – *Educational Briefing* Budget Update
May 23	Approval of Minutes Benefit Improvement Account – *Educational Briefing* Funding Method Contribution Rate Setting Introduction Supplemental Rate Introduction LAVR Preview Possible Executive Session
June 20	Approval of Minutes DRS Request Legislation – Seth Miller, DRS Career Change Alternatives – Initial Consideration Survivor Option Election Medical Conditions Presumed to Be Duty-related– Educational Briefing Funding Method Options Contribution Rate Setting Options Supplemental Rate Options
July 25	Approval of Minutes Valuation Audit Result – Milliman DRS Annual Update – Tracy Guerin, DRS ***Decision on Preliminary Reports*** Funding Method Contribution and Supplemental Rate Adoption Budget Update
August 22	*Historically Cancelled*
Sept 26	Approval of Minutes ***Comprehensive Reports*** Survivor Benefit Improvement Pricing Administrative Factors Introduction CEM Benchmarking – Mark Feldhausen, DRS Executive Session (Alt Rev Legal Advice)
Oct 24	*Offsite, Strategic Planning*
Nov 28	Approval of Minutes Budget Update Administrative Factors Adoption Final Average Salary Benefit Improvement Pricing Independent Audit - SAO
Dec 19	Approval of Minutes Demographic Experience Study Preview WSIB Annual Update – Theresa Whitmarsh, WSIB