



July 24, 2019 Supplemental Rate Adoption

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ISSUE STATEMENT

A supplemental rate may be necessary due to the passage of House Bill 1913 which adds medical conditions to the presumption, extending the presumption to certain publicly employed firefighters and investigators and law enforcement, addressing the qualifying medical examination, and creating an advisory committee.

OVERVIEW

A key statutory duty of the Law Enforcement Officers' and Fire Fighters (LEOFF) Plan 2 Retirement Board is to adopt contribution rates. This may include the adoption of a supplemental contribution rate to prefund benefit improvements passed by the legislature.

This report provides information about supplemental contribution rates including the purpose of the supplemental rate, supplemental rate development, supplemental rate history, and the occupational disease presumption legislation from the 2019 session.

SUPPLEMENTAL RATE FOR BENEFIT IMPROVEMENTS

One of the main goals of the Board is to maintain the financial integrity of the plan. In order to maintain that goal, it may be necessary for the Board to pay for new benefit improvements through the adoption of a supplemental contribution rate. The Board is required to use an accredited actuary using approved actuarial methods to determine the cost of the plan and the cost of any benefit improvements.

The cost of the existing benefits in the plan are paid by the "basic" contribution rate which is established by the Board every two years in even number years. The cost of any benefit improvement is paid by a "supplemental" contribution rate. Supplemental rates generally are adopted by the Board at the July Board meeting following the passage of the legislation. The supplemental rate is typically effective the following September 1. The statutes covering adoption of supplemental contribution rates for LEOFF Plan 2 include RCW 41.26.720, 41.45.0604 and 41.45.070.

PURPOSE OF SUPPLEMENTAL RATE

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 depending on the level of cost associated with the benefit improvement.

SUPPLEMENTAL RATE DEVELOPMENT

In accordance with RCW 41.45.070 the cost of any additional benefits granted by the Legislature require a supplemental rate increase to pay for the increased costs. The Department of Retirement Systems (DRS) in turn is required under RCW 41.45.067(2) to give affected employers a 30-day notice prior to the effective date of any rate change.

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.

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.

Not all benefit improvements will have costs sufficient to increase contribution rates, but if they do, the Board has the task of evaluating the feasibility of adopting a supplemental rate increase, usually effective September 1 following the effective date of the legislation.

CURRENT CONTRIBUTION RATES

During the 2016 Interim, the Board adopted contribution rates for the 2017-19 and 2019-21 Biennia 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 rate. Measured at June 30, 2016, that rate adoption exceeds the requirements under the plan's actuarial cost method and long-term

funding policy.¹ The current *total* contribution rate for LEOFF Plan 2 is 17.50%²; the total contribution rate is split 50-30-20% between members, employers, and the state as follows:

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

During the 2018 Interim, the Board adopted different (lower) rates for 2019-2021 which would continue through 2021-2023. The rates adopted were based on 100% of the Entry Age Normal Cost (EANC) based on the 2017 Actuarial Valuation, which includes the recommended supplemental rate increase for the PTSD legislation (SSB 6214 (2018)). The total rate adopted for 2019-2023 is 17.18%, split out at 8.59% members, 5.15% employers, 3.44% state.

SUPPLEMENTAL RATE HISTORY

The Board has considered a supplemental rate increase for 15 benefit improvements. The Board adopted the supplemental rate recommended by OSA for 10 of those benefit improvements. The Board has not acted to adopt the supplemental rate on a multiple occasions. The justifications for these cases included that it was determined that existing adopted rates were sufficient to cover the funding requirement or in other cases the existing rates were left unchanged and 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

¹ 2016 Actuarial Valuation Report for LEOFF Plan 2, pg. 12.

² Rates based on the 2016 Valuation as recommended by OSA: 7.91% Member, 5.25% Employer, 3.50% State (Total 15.82%)

7/28/2010	HB 2519 (2010) – Duty Death Benefits (Lakewood Omnibus legislation)	0.05%, 0.03%, 0.02%	NOT Adopted - Current rates were determined 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 -. Absorb cost through plan experience.	
9/23/2015	SHB 1194 (2015) Remarriage Prohibition	0.05%, 0.03%, 0.02%	Not Adopted - Absorb cost through plan experience.	
7/25/2018	SB 6214 (2018) PTSD	0.05%, 0.03%, 0.02%	Not Adopted – Biennial contribution rates adopted for 2019-2023 biennia sufficient to cover funding requirement.	

2019 LEGISLATION

The 2019 Legislature passed House Bill 1913 adds medical conditions to the presumption, extending the presumption to certain publicly employed firefighters and investigators and law enforcement, addressing the qualifying medical examination, and creating an advisory committee:

- Expands presumptive disease coverage for fire fighters to include mesothelioma, stomach cancer, non-melanoma skin cancer, breast cancer in women, and cervical cancer.
- Expands coverage to law enforcement officers for heart problems and infectious diseases.
- Grants public employee fire investigators the same presumption disease coverage that is granted to fire fighters.
- Instructs the director of Labor and Industries to create an advisory committee on occupational disease presumptions to review scientific evidence and to make recommendations to the legislature on additional diseases or disorders for inclusion.

OSA estimated in a fiscal note that this legislation would have a cost to the plan because it expands coverage of presumptive occupational diseases to law enforcement officers, fire fighters, fire investigators, and EMTs.

OSA stated in the fiscal note that it does not expect this bill to result in an increase in the total number of annual deaths or disabilities, but does expect an increase in the total number of duty related versus non-duty related benefits. Duty-related benefits are typically more costly to the pension system and require higher contributions to cover the costs. The next section details the costs of the legislation, as calculated by the OSA.

FISCAL NOTE HB 1913 (C 133, L 19)

OSA estimated that this legislation would create cost impacts as outlined in the tables below. The OSA calculates the rates using both the underlying cost method in statute, the Aggregate cost method; and the Entry Age Normal (EAN) cost method following the Board's current funding policy.

Aggregate Cost

The aggregate cost method is the underlying cost method specified in statute.

Impact on Contribution Rates <i>(Effective 9/1/2019)</i>	
Fiscal Year 2019 – 2021 State Budget	LEOFF
Member	0.05%
Employer	0.03%
State	0.02%

Budget Impacts			
<i>(Dollars in Millions)</i>	2019-2021	2021-2023	25-Year
General Fund-State	\$0.8	\$0.8	\$15.9
Local Government	\$1.2	\$1.3	\$23.8
Total Employer	\$2.0	\$2.1	\$39.6

Entry Age Normal (EAN)

The entry age normal cost method is the current funding policy used by the Board for setting contribution rates.

Impact on Contribution Rates <i>(Effective 9/1/2019)</i>	
Fiscal Year 2019 – 2021 State Budget	LEOFF
Member	0.04%
Employer	0.02%
State	0.02%

The Actuary's Fiscal Note for HB 1913, can be reviewed in Appendix A. The Actuary's 2019 Supplemental Rates letter to the Board can be reviewed in Appendix B.

Fiscal Note Audit

It is the Board's practice to have all fiscal notes that have a cost to the plan audited by an outside actuary. The Board engaged the firm of Bartel & Associates to conduct this audit. Bartel & Associates has conducted similar fiscal note audits for the Board in the past.

Bartel & Associates reported with regard to the OSA Fiscal Note that "these supplemental rates represent reasonable estimates of the costs". Further, the auditor notes that assumptions used by OSA are reasonable given the available data.

A copy of the audit letter from Bartel & Associates can be found in Appendix C.

POLICY OPTIONS

Option 1: Continue Current Contribution Rates of 8.59% member, 5.15% employer, 3.44% state

Under this option, the Board would elect not to adopt a supplemental rate for the benefit provided by HB 1913 (2019) and continue collecting contributions at the current rates which are set through June 2023. The funded status, after the benefit improvement account transfer, was reduced from 109 percent to 106 percent. It is estimated there are sufficient assets to pay for all earned benefits for all plan members as measured at June 30, 2017. In addition, the rates currently being collected exceed what is required under the statutory funding method when including this benefit improvement. This new benefit provision will be included in the next rate-setting valuation as part of the base rates so the supplemental would just be for the period until the next rate-setting cycle.

Option 2: Adopt Entry Age Normal Cost Supplemental Rate increase of 0.04% member, 0.02% employer, 0.02% state effective September 1, 2019.

The EANC rate increase represents the increase to the Normal Cost under the Entry Age actuarial cost method for this benefit improvement. In other words, the cost of this benefit improvement if it was paid from the start of a member's career. This option is consistent with the funding policy currently employed by LEOFF Plan 2 and allows for timely notice to employers of the contribution rate change.

Option 3: Adopt the aggregate based supplemental rate increase of 0.05% member, 0.03% employer, 0.02% state effective September 1, 2019.

The Aggregate rate represents the cost of this benefit improvement for both past and future service of current members. This option is consistent with the statutory funding method prescribed for LEOFF Plan 2 and allows for timely notice to employers of the contribution rate change. This option is inconsistent with the funding policy currently employed by the LEOFF Plan 2.

Summary of Contribution Rates Under Each Option, Effective 9/1/2019

	1. Continue Current Adopted Rates	2. Adopt 100% EANC based Supplemental Rate	3. Adopt Aggregate based Supplemental Rate
Member	8.59%	8.63%	8.64%
Employer	5.15%	5.17%	5.18%
State	3.44%	3.46%	3.46%

SUPPORTING INFORMATION

Appendix A: OSA Fiscal Note for HB 1913 (2019)

Appendix B: OSA Letter – 2019 Supplemental Rates

Appendix C: Bartel & Associates Letter – Fiscal Note Audit

APPENDIX A: OSA FISCAL NOTE FOR HB 1913(2019)

Multiple Agency Fiscal Note Summary

Bill Number: 1913 HB	Title: Occup. disease presumption
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Estimated Cash Receipts

Agency Name	2019-21		2021-23		2023-25	
	GF- State	Total	GF- State	Total	GF- State	Total
Washington State Health Care Authority	Non-zero but indeterminate cost and/or savings. Please see discussion.					
Total \$	0	0	0	0	0	0

Local Gov. Courts						
Loc School dist-SPI						
Local Gov. Other						
Local Gov. Total						

Estimated Operating Expenditures

Agency Name	2019-21			2021-23			2023-25		
	FTEs	GF-State	Total	FTEs	GF-State	Total	FTEs	GF-State	Total
Washington State Health Care Authority	Non-zero but indeterminate cost and/or savings. Please see discussion.								
Department of Retirement Systems	Non-zero but indeterminate cost and/or savings. Please see discussion.								
Board of Industrial Insurance Appeals	Non-zero but indeterminate cost and/or savings. Please see discussion.								
Department of Labor and Industries	.0	0	0	.0	0	0	.0	0	0
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	800,000	800,000	.0	800,000	800,000	.0	900,000	900,000
Total \$	0.0	800,000	800,000	0.0	800,000	800,000	0.0	900,000	900,000

Estimated Capital Budget Expenditures

FNPID: 57056

FNS029 Multi Agency rollup

Agency Name	2019-21			2021-23			2023-25		
	FTEs	Bonds	Total	FTEs	Bonds	Total	FTEs	Bonds	Total
Washington State Health Care Authority	.0	0	0	.0	0	0	.0	0	0
Department of Retirement Systems	.0	0	0	.0	0	0	.0	0	0
Board of Industrial Insurance Appeals	.0	0	0	.0	0	0	.0	0	0
Department of Labor and Industries	.0	0	0	.0	0	0	.0	0	0
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	0	0	.0	0	0	.0	0	0
Total \$	0.0	0	0	0.0	0	0	0.0	0	0

Estimated Capital Budget Breakout

NONE

Prepared by: Anna Minor, OFM	Phone: (360) 902-0541	Date Published: Final 3/ 6/2019
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FNPID: 57056
FNS029 Multi Agency rollup

Individual State Agency Fiscal Note

Bill Number: 1913 HB	Title: Occup. disease presumption	Agency: AFN-Actuarial Fiscal Note - State Actuary
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Part I: Estimates

☐ No Fiscal Impact

Estimated Cash Receipts to:

NONE

Estimated Operating Expenditures from:

	FY 2020	FY 2021	2019-21	2021-23	2023-25
Account					
General Fund-State 001-1	400,000	400,000	800,000	800,000	900,000
Total \$	400,000	400,000	800,000	800,000	900,000

The cash receipts and expenditure estimates on this page represent the most likely fiscal impact. Factors impacting the precision of these estimates, and alternate ranges (if appropriate), are explained in Part II.

Check applicable boxes and follow corresponding instructions:

- ☒ If fiscal impact is greater than \$50,000 per fiscal year in the current biennium or in subsequent biennia, complete entire fiscal note form Parts I-V.
- ☐ If fiscal impact is less than \$50,000 per fiscal year in the current biennium or in subsequent biennia, complete this page only (Part I).
- ☐ Capital budget impact, complete Part IV.
- ☐ Requires new rule making, complete Part V.

Legislative Contact: Joan Elgee	Phone: 360-786-7106	Date: 02/06/2019
Agency Preparation: Aaron Gutierrez	Phone: 360-786-6152	Date: 02/22/2019
Agency Approval: Luke Masselink	Phone: 360-786-6154	Date: 02/22/2019
OFM Review: Jane Sakson	Phone: 360-902-0549	Date: 02/22/2019

Form FN (Rev 1/00) 146,802.00
FNS063 Individual State Agency Fiscal Note

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Request # HB 1913-1
Bill # 1913 HB

Individual State Agency Fiscal Note

Bill Number: 1913 HB	Title: Occup. disease presumption	Agency: AFN-Actuarial Fiscal Note - State Actuary
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Part I: Estimates

☐ No Fiscal Impact

Estimated Cash Receipts to:

NONE

Estimated Operating Expenditures from:

	FY 2020	FY 2021	2019-21	2021-23	2023-25
Account					
General Fund-State 001-1	400,000	400,000	800,000	800,000	900,000
Total \$	400,000	400,000	800,000	800,000	900,000

The cash receipts and expenditure estimates on this page represent the most likely fiscal impact. Factors impacting the precision of these estimates, and alternate ranges (if appropriate), are explained in Part II.

Check applicable boxes and follow corresponding instructions:

- ☒ If fiscal impact is greater than \$50,000 per fiscal year in the current biennium or in subsequent biennia, complete entire fiscal note form Parts I-V.
- ☐ If fiscal impact is less than \$50,000 per fiscal year in the current biennium or in subsequent biennia, complete this page only (Part I).
- ☐ Capital budget impact, complete Part IV.
- ☐ Requires new rule making, complete Part V.

Legislative Contact: Joan Elgee	Phone: 360-786-7106	Date: 02/06/2019
Agency Preparation: Aaron Gutierrez	Phone: 360-786-6152	Date: 02/22/2019
Agency Approval: Luke Masselink	Phone: 360-786-6154	Date: 02/22/2019
OFM Review: Jane Sakson	Phone: 360-902-0549	Date: 02/22/2019

Form FN (Rev 1/00) 146,802.00
FNS063 Individual State Agency Fiscal Note

1

Request # HB 1913-1
Bill # 1913 HB

Actuary's Fiscal Note For HB 1913/SB 5849

SUMMARY OF RESULTS

BRIEF SUMMARY OF BILL: This bill would expand the statutory list of presumptive occupational diseases for fire fighters covered under industrial insurance and duty benefits in the retirement plans. It also adds some law enforcement, publicly employed EMTs, and fire investigators to the list of workers covered by the occupational disease presumption, and creates an advisory committee on occupational disease presumptions.

COST SUMMARY

Impact on Contribution Rates (Effective 09/01/2019)	
FY 2019-2021 State Budget	LEOFF
Employee (Plan 2)	0.05%
Employer	0.03%
State	0.02%

Budget Impacts			
(Dollars in Millions)	2019-2021	2021-2023	25-Year
General Fund-State	\$0.8	\$0.8	\$15.9
Local Government	\$1.2	\$1.3	\$23.8
Total Employer	\$2.0	\$2.1	\$39.6

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 provides additional benefits that increase the costs to LEOFF 2 and the contributions required to fund it. This bill also improves benefits for LEOFF 1 and some PERS members, however we do not expect costs in those plans to lead to a contribution rate impact due to the number of members impacted.
- ❖ We do not expect this bill will increase the total number of deaths or disabilities, however we expect it will increase the number of duty-related versus non-duty-related benefits.
 - ◇ We expect two additional duty-related deaths annually (1.6 active plus 0.4 inactive members) from the presumptive diseases covered in this bill. This assumption change accounts for about 80 percent of the costs under this bill.
 - ◇ We expect two additional duty disabilities annually, resulting in all LEOFF 2 disabilities assumed to be classified as duty-related.
- ❖ We relied on data provided by L&I for both the incidence and mortality rates associated for each disease covered in this bill. Where data was not available, we used professional judgement to set an assumption. Please see the **Assumptions We Made** for more information.
- ❖ Actual experience may differ from our best estimate assumption. For example, if the additional duty-related deaths are 1.3 or 3.4 instead of our best estimate assumption of 2.0, we expect the resulting total employer budget impacts would be \$28 million or \$62 million over a 25-year period. However, the actual costs of this bill could fall outside this range.

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

WHAT IS THE PROPOSED CHANGE?

Summary Of Benefit Improvement

This bill impacts the following systems:

- ❖ Public Employees' Retirement System (PERS).
- ❖ Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF)

This bill would expand the statutory list of presumptive occupational diseases for fire fighters covered under industrial insurance and duty benefits in the retirement plans. It also adds some law enforcement, publicly employed Emergency Medical Technicians (EMTs), and fire investigators to the list of workers covered by the occupational disease presumption.

More specifically, it adds:

Fire investigators and EMTs to the presumption for:

- ❖ Respiratory disease.
- ❖ Cancer.

It also adds the following types of cancers to the presumption:

- ❖ Mesothelioma.
- ❖ Stomach cancer.
- ❖ Nonmelanoma skin cancer.
- ❖ Breast cancer in women.
- ❖ Cervical cancer.

The bill also adds law enforcement officers, fire investigators, and EMTs to the presumption for:

- ❖ Heart problems within 72 hours of certain exposures or strenuous exertion.
- ❖ HIV/AIDS.
- ❖ Hepatitis.
- ❖ Meningococcal Meningitis.
- ❖ Mycobacterium tuberculosis.

The bill also creates an advisory committee on occupational disease presumptions, but this does not impact the pricing of the proposal.

Effective Date: 90 days after session.

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 presumption applies for a maximum of 60 months following termination of employment (technically, three months for every year of service, up to 60 months). The conditions covered in statute include respiratory disease, heart problems, certain cancers, and certain infectious diseases. In 2018, this list was updated to include Post-Traumatic Stress Disorder (PTSD).

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 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?

In LEOFF 2, we estimate this bill could affect any of the 17,694 active members through improved benefits. This bill could also affect 5,357 inactive members through improved benefits and we expect approximately 2,600 of these inactive members are within the presumptive window since leaving service.

We expect improved benefits will be paid for 1.6 active member deaths and 2 active member disabilities each year. Of the current inactive members, we expect 0.4 additional members will receive duty-related death benefits annually from expanded presumptions for diseases covered in this bill.

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 \$251,353 as of July 1, 2018, 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.

This bill also improves benefits for LEOFF 1 and some PERS members, however we do not expect costs in those plans to lead to a contribution rate impact. Please see the **Assumption** section for additional detail.

WHY THIS BILL HAS A COST AND WHO PAYS FOR IT

Why This Bill Has A Cost

This bill expands coverage of presumptive occupational diseases to law enforcement officers, fire fighters, fire investigators, and EMTs.

Deaths or disabilities attributable to any of these diseases will result in duty-related benefits for the member or their surviving spouse. We do not expect more total deaths or disabilities as a result of this bill, but instead a shift in the benefits paid from non-duty to duty-related as a result of the presumption. Duty-related benefits are more costly to the pension system and require higher contributions to cover the costs.

The additional duty-related deaths have the largest impact under this bill because survivors receive a sizeable lump sum payment and healthcare coverage in addition to a monthly pension. We estimate 80 percent of this bill cost is related to additional duty-related deaths.

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.

We do not anticipate the additional costs for PERS or LEOFF 1 will result in a contribution rate increase.

HOW WE VALUED THESE COSTS

Assumptions We Made

Duty-Related Death Assumptions

We do not expect any additional deaths but we assume a higher proportion of deaths will be duty-related because of the presumption in this bill. These assumption changes will move 1.6 active and 0.4 inactive deaths from non-duty to duty-related benefit provisions each year.

- ❖ **Active Members:** We increased our duty-related death rate assumption from 0.035 percent to 0.045 percent for all active members. This assumption represents the likelihood that a death occurs from a duty-related event. Put another way, we now assume 0.045 percent of all active employees will die from duty-related causes each year.
- ❖ **Inactive Members:** We increased our duty-related death assumption for inactive members, who are within the presumptive window since leaving service, and die as a

WHY THIS BILL HAS A COST AND WHO PAYS FOR IT

Why This Bill Has A Cost

This bill expands coverage of presumptive occupational diseases to law enforcement officers, fire fighters, fire investigators, and EMTs.

Deaths or disabilities attributable to any of these diseases will result in duty-related benefits for the member or their surviving spouse. We do not expect more total deaths or disabilities as a result of this bill, but instead a shift in the benefits paid from non-duty to duty-related as a result of the presumption. Duty-related benefits are more costly to the pension system and require higher contributions to cover the costs.

The additional duty-related deaths have the largest impact under this bill because survivors receive a sizeable lump sum payment and healthcare coverage in addition to a monthly pension. We estimate 80 percent of this bill cost is related to additional duty-related deaths.

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.

We do not anticipate the additional costs for PERS or LEOFF 1 will result in a contribution rate increase.

HOW WE VALUED THESE COSTS

Assumptions We Made

Duty-Related Death Assumptions

We do not expect any additional deaths but we assume a higher proportion of deaths will be duty-related because of the presumption in this bill. These assumption changes will move 1.6 active and 0.4 inactive deaths from non-duty to duty-related benefit provisions each year.

- ❖ **Active Members:** We increased our duty-related death rate assumption from 0.035 percent to 0.045 percent for all active members. This assumption represents the likelihood that a death occurs from a duty-related event. Put another way, we now assume 0.045 percent of all active employees will die from duty-related causes each year.
- ❖ **Inactive Members:** We increased our duty-related death assumption for inactive members, who are within the presumptive window since leaving service, and die as a

Actuary's Fiscal Note For HB 1913/SB 5849

expect the additional cost of duty-related death benefits paid beyond the presumptive window to be material to this pricing.

Duty-Related Disability Assumptions

Under current law, we assume all fire fighter disabilities and most law enforcement disabilities are duty-related. We increased the duty-related disability assumption for law enforcement officers, as this bill expands presumptions for heart problems and infectious diseases to these members. Using data from L&I, we estimated the increase in the number of duty-related disabilities for law enforcement officers by the difference in total incidences of new presumptive diseases minus expected mortality from these diseases. The expected number of new duty-related disabilities exceeded the expected number of non-duty-related disabilities for the plan. For this reason, and that we do not expect this bill will lead to more total disabilities, we now assume all future disabilities are duty-related. The increased costs from this assumption are about 17 percent of the costs we estimate for this bill. The table below compares the types of disabilities we assume under current law and how we expect them to change under this bill.

Expected Annual Disabilities		
Actives	Current Law	Best Estimate
Duty	37.6	39.7
Non-Duty	2.0	0.0
Total Disabilities	39.7	39.7

Note: Totals may not agree due to rounding.

Additionally, this bill could change the 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.

The analysis contained in our pricing does not consider passage of [SSB 6214](#) in the 2018 Legislative Session, which added PTSD to the presumptive diseases list. We do not expect the passage of the bill to materially influence our analysis.

Miscellaneous Assumptions

According to L&I, the number of EMTs in LEOFF 2 is 252. This represents about 1.5 percent of the active LEOFF 2 population. We used this data to update our assumption about the portion of active LEOFF 2 members who are eligible for duty-related benefits as a result of presumptive occupational diseases under current law.

We assumed the impact to LEOFF 1 and PERS is not material and as such did not include the impact of this bill on those systems.

- ❖ L&I expects fewer than 50 fire investigators in PERS that could receive improved benefits. This represents 0.03 percent of the active PERS population. We expect the

Actuary's Fiscal Note For HB 1913/SB 5849

coverage extended to fire investigators under this bill will increase costs to PERS, but the costs will not impact contribution rates for the system.

- ❖ As of the [*June 30, 2017, Actuarial Valuation Report*](#) (AVR), LEOFF 1 has 40 active members and 82 inactive members within the presumptive window. Given the small number of members we anticipate becoming eligible for these enhanced benefits and the current level of funding in LEOFF 1, we expect no impact to contribution rates in LEOFF 1. Approximately 5,500 LEOFF 1 inactive members, outside the presumptive window, would be eligible for benefits under this bill; however, this additional cost is not expected to be material for this pricing.

Please see **Appendix A** for more details on how we arrived at these assumptions.

Otherwise, we developed these costs using the same assumptions as disclosed in the AVR, [Projections Disclosures](#), and [Risk Assessment](#) analysis available on our website.

How We Applied These Assumptions

In our current valuation data, EMTs are included as fire fighters although they are not covered for presumptive occupational diseases. In order to value the impact of adding EMTs under this bill, we updated our base valuation to reflect a lower percentage of the active membership assumed to be fire fighters from 45 percent to 43.5 percent. This assumption was correspondingly increased back to 45 percent for the pricing valuation. The difference in assumed fire fighter percentage between the pricing valuation and base valuation will measure the liability increase associated with the expanded coverage to EMTs.

In our pricing valuation, we also applied the revised assumptions to the duty-related lump sum and annuity death benefits as well as disability benefits for active members and qualifying inactive members. We also applied this assumption to the medical premium reimbursement benefits. Since we apply the duty-related death rate to both fire fighters and law enforcement officers in our valuation model, we developed a blended assumption that projects the total number of duty deaths we expect when applied to the entire population. For the increased number of duty disabilities, we simply removed the non-duty disability assumption and valued all disabilities as duty-related.

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 43.5 percent fire fighter assumption. 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

Actuary's Fiscal Note For HB 1913/SB 5849

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.

Special Data Needed

In selecting the best estimate assumptions for this pricing, we reviewed data from L&I on expected incidences and deaths for each new presumptive disease. L&I also provided us a "presumptive multiplier" that we applied to the rates. The multiplier indicates how much more likely fire fighters and law enforcement officers are to contract a given disease than the general population. For more details on the development of this assumption and the data we used, please see **Appendix A**.

We compared our current duty-related death and disability assumptions with death and disability estimates using L&I data to determine an increase in the assumptions for this pricing. To create our estimates, we used data from the 2017 AVR and multiplied member headcounts by the incidence or mortality rates for each disease.

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 to the members. The impact of the increasing present value of future benefits payable for current members is shown below.

Impact on Pension Liability			
(Dollars in Millions)	Current	Increase	Total
Actuarial Present Value of Projected Benefits			
<i>(The Value of the Total Commitment to All Current Members)</i>			
LEOFF 2	13,689	18.7	13,708
Unfunded Entry Age Accrued Liability			
<i>(The Value of the Total Commitment to All Current Members Attributable to Past Service that is Not Covered by Current Assets)</i>			
LEOFF 2	(878)	1.0	(877)

Note: Totals may not agree due to rounding.

How The Assets Changed

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

Actuary's Fiscal Note For HB 1913/SB 5849

How The Present Value Of Future Salaries (PVFS) Changed

This bill does not change the PVFS so there is no impact on the actuarial funding of the affected plans due to PVFS changes.

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 below to measure the budget changes in future biennia.

Impact on Contribution Rates (Effective 09/01/2019)	
System/Plan	LEOFF
Current Members	
Employee (Plan 2)	0.045%
Employer	0.027%
State	0.018%
New Entrants*	
Employee (Plan 2)	0.043%
Employer	0.026%
State	0.017%

**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
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
2021-2023		
General Fund	\$0.8	\$0.8
Non-General Fund	0.0	0.0
Total State	\$0.8	\$0.8
Local Government	1.3	1.3
Total Employer	\$2.1	\$2.1
Total Employee	\$2.1	\$2.1
2019-2044		
General Fund	\$15.9	\$15.9
Non-General Fund	0.0	0.0
Total State	\$15.9	\$15.9
Local Government	23.8	23.8
Total Employer	\$39.6	\$39.6
Total Employee	\$39.6	\$39.6

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.

Actuary's Fiscal Note For HB 1913/SB 5849

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

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.

The table below displays our latest risk measurements as of June 30, 2017. The figures in this table were not reproduced for this bill. For more information, please see our [Risk Assessment](#) webpage and the **Glossary**.

Select Measures of Pension Risk as of June 30, 2017 ¹		
	FY 2018-37	FY 2038-67
Affordability Measures		
Chance of Pensions Double their Current Share of GF-S ²	1%	3%
Chance of Pensions Half their Current Share of GF-S ²	47%	46%
Solvency Measures		
Chance of PERS 1 or TRS 1 in Pay-Go ³	15%	18%
Chance of Any Open Plan in Pay-Go ³	1%	8%
Chance of PERS 1, TRS 1 Total Funded Status Below 60%	29%	27%
Chance of Open Plans Total Funded Status Below 60%	24%	36%

¹FY 2018 returns used for purposes of this analysis are 10.04%. Due to a restatement in October 2018, this differs from the 10.20% reported by the Washington State Investment Board. We expect this difference to have limited impacts to the risk measures.

²Pensions approximately 5.5% of current General Fund-State (GF-S) budget; does not include higher education.

³When today's value of annual pay-go cost exceeds \$50 million.

In terms of risk, we expect this bill would slightly 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 may also decrease as a result of the plan becoming more costly. Given the current funding level of LEOFF 2 and the size of the plan relative to the combined retirement plans, we do not expect this bill to materially change the results of the combined risk assessment shown above.

HOW THE RESULTS CHANGE WHEN THE ASSUMPTIONS CHANGE

We relied on data provided by L&I and our professional judgment to set our best estimate assumption; however, the best estimate results presented in this fiscal note can vary under a different set of assumptions. The assumptions related to additional duty-related deaths are approximately 80 percent of the cost of the bill

Actuary's Fiscal Note For HB 1913/SB 5849

so we varied the duty-related death assumptions for sensitivity. More specifically, we considered the range of costs if we assume a 10 percent (Low Sensitivity) and 40 percent (High Sensitivity) of incidences resulting in mortality from heart and infectious diseases.

To demonstrate the range of potential outcomes surrounding our best estimate, we considered the following:

- ❖ **Low Sensitivity** – We assume 1.3 additional duty-related deaths per year (1.0 active and 0.3 inactive member) above current law.
- ❖ **High Sensitivity** – We assume 3.4 additional duty-related deaths per year (2.8 active and 0.6 inactive members) above current law.

Expected Annual Deaths				
Actives	Current Law	Low Sensitivity	Best Estimate	High Sensitivity
Duty	6.1	7.1	7.7	8.9
Non-Duty	21.7	20.7	20.1	18.9
Total Deaths	27.8	27.8	27.8	27.8
Eligible Inactives	Current Law	Low Sensitivity	Best Estimate	High Sensitivity
Duty	4.5	4.8	4.9	5.1
Non-Duty	11.9	11.6	11.5	11.3
Total Deaths	16.4	16.4	16.4	16.4

The table below compares the 25-year budget impact of our best estimate to the sensitivity analysis. This analysis only includes changes to the assumption for the number of new duty-related deaths that may arise out of this bill.

Example Range of 25-Year Budget Impacts			
(Dollars in Millions)	Low Sensitivity	Best Estimate	High Sensitivity
General Fund-State	\$11	\$16	\$25
Total Employer	\$28	\$40	\$62

Under current law, we expect six active member duty related deaths per year for LEOFF 2. The Low Sensitivity shows the expected impact to the retirement system if LEOFF 2 experiences one additional active member duty death per year. One additional duty death per year, above current law, results in a contribution rate increase that rounds to 0.01 percent, the threshold for a supplemental rate impact.

Actuary's Fiscal Note For HB 1913/SB 5849

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 2019 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 2019 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.



Luke Masselink, ASA, EA, MAAA
Senior Actuary

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APPENDIX A – ASSUMPTIONS WE MADE

We relied on L&I assumptions to determine the expected number of annual duty disabilities and duty-related deaths under this bill. We used data from the 2017 AVR to determine headcounts for each age group to match the data below. We then applied those headcounts to the probability of incidence or mortality for each disease. The expected number of additional duty deaths, by disease, can be found in the **Number of New Duty-Related Deaths by Presumption** table. The expected number of additional duty disabilities, by disease, can be found in the **Number of New Duty-Related Disabilities by Presumption (LEO Only)** table.

Incidence Rates

We relied on the incidence rates and presumptive multipliers provided by L&I in the following two tables to determine the expected number of annual duty-related disabilities. The tables are split between Fire Fighters (FF) and Law Enforcement Officers (LEO). The incidence rates represent assumptions for the Washington average population for cancers and national population for all other diseases. In the case of heart problem incidence rate for LEO, we relied on the observed FF incidence rate from current law presumptive coverage. A presumptive multiplier is applied to each incidence rate to represent a higher degree of risk for FF and LEO than the average population. The multiplier essentially “adjusts” the data to account for the fact that the LEOFF 2 population experiences these diseases at a higher rate.

Incidence Rate for Cancer (FF only)					
Age	Stomach*	Breast	Mesothelioma*	Cervical	Non-Melanoma Skin
30-34	0.0010%	0.0322%	0.0000%	0.0090%	0.0000%
35-39	0.0018%	0.0691%	0.0000%	0.0144%	1.5000%
40-44	0.0031%	0.1720%	0.0000%	0.0146%	1.5000%
45-49	0.0050%	0.2589%	0.0006%	0.0119%	1.5000%
50-54	0.0082%	0.3191%	0.0006%	0.0115%	1.5000%
55-59	0.0119%	0.3556%	0.0025%	0.0103%	1.5000%
60-64	0.0190%	0.4529%	0.0025%	0.0083%	1.5000%
65-69	0.0273%	0.6084%	0.0078%	0.0083%	4.5000%
70-74	0.0383%	0.6545%	0.0078%	0.0076%	7.5000%
Multiplier	1.58	1.26	2.29	5.24	1.52

*For display purposes we blended based on assumed male/female splits.

Incidence Rate for Infectious Diseases and Heart Problems (LEO only)					
	HIV/AIDS	Meningitis	Tuberculosis	Hepatitis	Heart
All Ages	0.0331%	0.0004%	0.0030%	0.0020%	0.0050%
Multiplier	1.50	1.50	1.50	1.50	1.50

APPENDIX A – ASSUMPTIONS WE MADE

We relied on L&I assumptions to determine the expected number of annual duty disabilities and duty-related deaths under this bill. We used data from the 2017 AVR to determine headcounts for each age group to match the data below. We then applied those headcounts to the probability of incidence or mortality for each disease. The expected number of additional duty deaths, by disease, can be found in the **Number of New Duty-Related Deaths by Presumption** table. The expected number of additional duty disabilities, by disease, can be found in the **Number of New Duty-Related Disabilities by Presumption (LEO Only)** table.

Incidence Rates

We relied on the incidence rates and presumptive multipliers provided by L&I in the following two tables to determine the expected number of annual duty-related disabilities. The tables are split between Fire Fighters (FF) and Law Enforcement Officers (LEO). The incidence rates represent assumptions for the Washington average population for cancers and national population for all other diseases. In the case of heart problem incidence rate for LEO, we relied on the observed FF incidence rate from current law presumptive coverage. A presumptive multiplier is applied to each incidence rate to represent a higher degree of risk for FF and LEO than the average population. The multiplier essentially “adjusts” the data to account for the fact that the LEOFF 2 population experiences these diseases at a higher rate.

Incidence Rate for Cancer (FF only)					
Age	Stomach*	Breast	Mesothelioma*	Cervical	Non-Melanoma Skin
30-34	0.0010%	0.0322%	0.0000%	0.0090%	0.0000%
35-39	0.0018%	0.0691%	0.0000%	0.0144%	1.5000%
40-44	0.0031%	0.1720%	0.0000%	0.0146%	1.5000%
45-49	0.0050%	0.2589%	0.0006%	0.0119%	1.5000%
50-54	0.0082%	0.3191%	0.0006%	0.0115%	1.5000%
55-59	0.0119%	0.3556%	0.0025%	0.0103%	1.5000%
60-64	0.0190%	0.4529%	0.0025%	0.0083%	1.5000%
65-69	0.0273%	0.6084%	0.0078%	0.0083%	4.5000%
70-74	0.0383%	0.6545%	0.0078%	0.0076%	7.5000%
Multiplier	1.58	1.26	2.29	5.24	1.52

*For display purposes we blended based on assumed male/female splits.

Incidence Rate for Infectious Diseases and Heart Problems (LEO only)					
	HIV/AIDS	Meningitis	Tuberculosis	Hepatitis	Heart
All Ages	0.0331%	0.0004%	0.0030%	0.0020%	0.0050%
Multiplier	1.50	1.50	1.50	1.50	1.50

Actuary's Fiscal Note For HB 1913/SB 5849

Under current law, we assume all disabilities for FF will be duty-related. For this bill, we estimate the additional duty-related disabilities will apply to LEO. The difference between expected number of incidences and mortality counts reflects the increase in duty-related disabilities for LEO. The results can be found in the table below.

Number of New Duty Disabilities by Presumption (LEO Only)			
	Infectious Diseases*	Heart Problems*	Total
Active Members	4.3	0.6	4.9

Note: Disabilities calculated as number of expected incidences minus expected deaths.

**FF already have this coverage under current law.*

The number of additional duty-related disabilities (4.9) exceeds the number of non-duty disabilities we expect under current law (2.0), so we assumed all future disabilities are duty-related.

Mortality Rates

We relied on the mortality rates found in the following table to determine the expected number of annual duty-related deaths. The mortality rates assume the same presumptive multipliers as incidence rates.

Mortality Rate for Cancer (FF only)					
Age	Stomach*	Breast	Mesothelioma*	Cervical	Non Melanoma Skin
30-34	0.0001%	0.0018%	0.0000%	0.0000%	0.0000%
35-39	0.0008%	0.0046%	0.0000%	0.0011%	0.0000%
40-44	0.0015%	0.0098%	0.0000%	0.0016%	0.0000%
45-49	0.0012%	0.0164%	0.0005%	0.0042%	0.0000%
50-54	0.0027%	0.0248%	0.0005%	0.0029%	0.0000%
55-59	0.0050%	0.0363%	0.0020%	0.0039%	0.0000%
60-64	0.0070%	0.0434%	0.0020%	0.0035%	0.0000%
65-69	0.0108%	0.0610%	0.0062%	0.0038%	0.0000%
70-74	0.0163%	0.0825%	0.0062%	0.0031%	0.0000%
Multiplier	1.58	1.26	2.29	5.24	1.52

**For display purposes we blended based on assumed male/female splits.*

We relied on data from Centers for Disease Control and Prevention to determine an assumption on mortality rate related to heart disease and infectious diseases. We reviewed incident rates and mortality rates for these diseases. Based on the data, we believe that 20 percent of incidences resulting in mortality within five years of leaving service is a reasonable assumption. However, given that this assumption is outside our expertise and magnitude of the assumption, we performed sensitivity around this assumption. Please see **How The Results Change When Assumptions Change** section for additional details.

Actuary's Fiscal Note For HB 1913/SB 5849

The expected number of annual duty-related deaths is approximately 1.6 active and 0.4 inactive members. The table below summarizes the number of duty-related deaths we expect based on the mortality rates used for this pricing.

Number of New Duty-Related Deaths by Presumption				
	Cancer	Infectious Diseases*	Heart Problems*	Total
Active Members	0.4	1.1	0.1	1.6
Retirees	0.2	0.2	N/A	0.4

**Figures for expanded coverage for LEO only. FF already have this coverage under current law.*

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 Risk: 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.

Funded Status: The ratio of a plan's current assets to the present value of earned pensions. There are several acceptable methods of measuring a plan's assets and liabilities. In financial reporting of public pension plans, funded status is reported using consistent measures by all governmental entities. According to the Government Accounting Standards Board (GASB), the funded ratio equals the actuarial value of assets divided by the actuarial accrued liability calculated under the allowable actuarial methods.

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

Solvency 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.

APPENDIX B: OSA LETTER – 2019 SUPPLEMENTAL RATES



Office of the State Actuary

"Supporting financial security for generations."

June 13, 2019

Mr. Steve Nelsen
Executive Director
LEOFF Plan 2 Retirement Board
P.O. Box 40918
Olympia, Washington 98504-0918

SUBJECT: 2019 SUPPLEMENTAL RATES

Dear Steve:

As required under [RCW 41.45.070\(2\)](#), we are forwarding the increase to supplemental rates for the following bill that passed during the 2019 Legislative Session for the LEOFF 2 Board's consideration:

LEOFF 2	Members	Employer Normal Cost	State Normal Cost
HB 1913 (C 133, L 19)	0.05%	0.03%	0.02%

If the Board adopts a supplemental rate increase in light of [HB 1913 \(C 133, L 19\)](#), please notify the Department of Retirement Systems (DRS) directly. Beginning September 1, 2019, DRS will add any adopted supplemental contribution rates to the basic member, employer, and state contribution rates otherwise effective September 1, 2019.

We have not identified any additional legislation that requires a supplemental rate increase at this time. Please feel free to contact me directly should you have any questions.

Sincerely,

Luke Masselink, ASA, EA, MAAA
Senior Actuary

cc: Tracy Guerin, Director
Department of Retirement Systems
Lisa Won, ASA, FCA, MAAA, Deputy State Actuary
Office of the State Actuary
Matt Smith, FCA, EA, MAAA, State Actuary
Office of the State Actuary

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PO Box 40914 | Olympia, Washington 98504-0914 | state.actuary@leg.wa.gov | leg.wa.gov/osa
Phone: 360.786.6140 | Fax: 360.586.8135 | TDD: 711

APPENDIX C: BARTEL & ASSOCIATES LETTER – FISCAL NOTE AUDIT



July 18, 2019

Dennis Lawson, Chair
Law Enforcement Officers' & Firefighters' Plan 2 Retirement Board
P.O. Box 40918
Olympia, Washington 98504-0918

Re: Actuarial Review of HB 1913 Fiscal Note

Chair Lawson and Members of the Board:

There follow the results of our actuarial review of the above fiscal note.

Background

Major provisions of HB 1913 include:

- Extension of cancer-related statutory occupational disease presumption provisions for firefighters to include mesothelioma, stomach cancer, non-melanoma skin cancer, breast cancer in women, and cervical cancer
- Extension of presumptions for specified cancers, respiratory diseases, heart problems, and infectious diseases to EMTs
- Presumptions for heart related and infectious diseases to Law Enforcement Officers.

Our understanding is that HB 1913 does not apply retroactively.

The increases in contribution rates calculated by OSA for contribution rates are shown below.

Employee	0.05%
Employer	0.03%
<u>State</u>	<u>0.02%</u>
Total	0.10%

Results of Review

Assumptions

OSA assumed no increase in the total incidence of deaths and disabilities (duty plus non-duty). Assumptions regarding increases in classification of deaths and disabilities as duty-related were based on information provided by L&I. OSA assumed no change in the proportion of duty disablements assumed to be catastrophic (12%).

LEOFF 2 Retirement Board
July 18, 2019
Page 2



Summary

We reviewed the supplemental contribution rate increases shown in the Office of the State Actuary February 22, 2019 Fiscal Note for HB 1913.

Prediction of the impact of occupational presumptive provisions for firefighters, EMTs, and law enforcement officers is difficult. However, we agree that these supplemental rates represent reasonable estimates of the costs based on the assumptions provided by L&I and that the additional assumptions used by OSA are reasonable keeping in mind that historical data is unavailable. Rates in the future may be significantly higher or lower as actual experience emerges and is recognized as gains and losses and incorporated in actuarial assumptions.

The undersigned is a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Sincerely,

Marilyn M. Oliver, F.S.A., M.A.A.A.
Vice President
Bartel Associates, LLC

Cc. Steve Nelsen, Executive Director; Tim Valencia, Deputy Director; Matthew M. Smith, State Actuary

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{emphasis added}



Supplemental Rate Adoption

July 24, 2019

Issue

- A supplemental rate may be necessary due to the passage of House Bill 1913 which:
 - adds medical conditions to the occupational disease presumption,
 - extends the presumption to certain publicly employed firefighters and investigators and law enforcement,
 - addresses the qualifying medical examination, and
 - creates an advisory committee.

About Supplemental Rates

- Temporary rate increases to prefund the cost of benefit improvements not included in basic rates
- Supplemental rates determined for each bill independently (fiscal note)
- Rates are usually effective September 1
 - Can vary depending on effective date of legislation
 - 30 day notice to employers
- Roll into basic rates next rate-setting cycle
 - Benefit improvements included in actuarial valuation

Fiscal Note Audit

- Board practice to audit fiscal notes for legislation passed with a cost
- Bartel & Associates/Marilyn Oliver retained by Board
 - Completed previous audits for Board
- Audit Results
 - Supplemental rates represent reasonable estimate of the costs based on assumptions and available data
 - Rates higher or lower as actual experience emerges

Option 1: Continue Current Rates

- Do not adopt a supplemental rate; continue current contribution rates
 - 8.59% member
 - 5.15% employer
 - 3.44% state
- Funding status 106%
- Sufficient assets to pay for earned benefits; current rates exceed statutory funding method rate
- New benefit improvement included in next rate-setting cycle (2020 Interim)

Option 2: Entry Age Normal Cost Supplemental Rate

- Adopt Entry Age Normal Cost based supplemental rate increase
 - 0.04% member
 - 0.02% employer
 - 0.02% state
- Effective September 1, 2019
- Allows timely notice to employers of rate change
- Consistent with current LEOFF 2 funding policy

Option 3: Aggregate Supplemental Rate

- Adopt Aggregate based supplemental rate increase:
 - 0.05% member
 - 0.03% employer
 - 0.02% state
- Effective September 1, 2019.
- Allows timely notice to employers of rate change
- Inconsistent with current LEOFF 2 funding policy

Option Comparison: Contribution Rates

	Option 1 <i>No Supplemental Continue Current Rates</i>	Option 2 <i>EANC Based Supplemental</i>	Option 3 <i>Aggregate Based Supplemental</i>
MEMBER	8.59%	8.63%	8.64%
EMPLOYER	5.15%	5.17%	5.18%
STATE	3.44%	3.46%	3.46%



Thank You

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