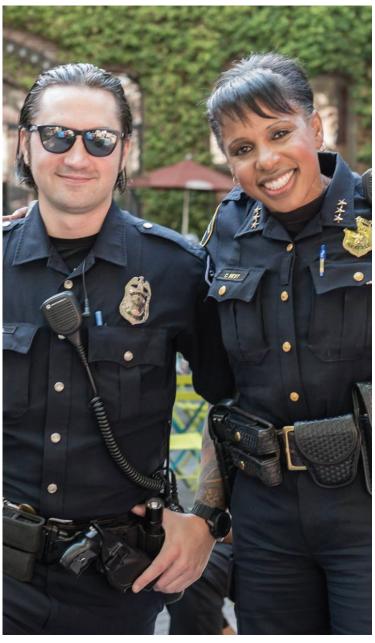
## **WASHINGTON STATE**

Law Enforcement Officers' and Fire Fighters' Plan 2 Retirement Board





2015 Actuarial Valuation Report



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# Letter of Introduction Law Enforcement Officers' and Fire Fighters' Retirement System Plan 2 Actuarial Valuation Report As of June 30, 2015

November 2016

As required under Chapter 41.45 RCW, this report documents the results of an actuarial valuation of the Law Enforcement Officers' and Fire Fighters' Retirement System Plan 2 (LEOFF 2).

The primary purpose of this valuation is to determine contribution requirements for LEOFF 2 for the 2017-2019 biennium based on a June 30, 2015, measurement date and under the funding policy established by the LEOFF 2 Retirement Board. This valuation also provides information on the funding progress and developments in the plan over the past year.

This report is organized into four sections.

- Summary of Key Results.
- ❖ Actuarial Exhibits.
- Participant Data.
- ❖ Appendices.

The **Summary of Key Results** section provides a high-level summary of the valuation results for LEOFF 2. The next two sections of the report provide detailed actuarial asset and liability information and participant data. The **Appendices** provide access to a summary of the principal actuarial assumptions and methods, a summary of the major plan provisions, and additional information used to prepare this valuation.

The LEOFF 2 Retirement Board has received the *2015 Recognition Award For Funding* from the <u>Public Pension Coordinating Council</u> (PPCC). The PPCC is a coalition of three national retirement associations which establish Public Pension Standards that reflect minimum expectations for public retirement system management, administration, and funding.

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#### Letter of Introduction Page 2 of 2

We encourage you to submit any questions you might have concerning this report to our regular address or our e-mail address at <a href="mailto:state.actuary@leg.wa.gov">state.actuary@leg.wa.gov</a>. We also invite you to visit our website (<a href="mailto:osa.leg.wa.gov">osa.leg.wa.gov</a>), for further information regarding the actuarial funding of the Washington State retirement systems.

Matthew M. Smith, FCA, EA, MAAA State Actuary

Mitch DeCamp Actuarial Analyst



## **I. Summary of Key Results**



















## **INTENDED USE**

The purpose of this report is to develop contribution rates required to fund the Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF) Plan 2 for the 2017-2019 biennium based on the June 30, 2015, measurement date and based on the funding policies described in this section. This report also discloses the data, assumptions, and methods we used to develop the contribution rates. This report is not intended to satisfy the accounting requirements under the Governmental Accounting Standards Board (GASB) rules.

#### **CONTRIBUTION RATES**

Contribution Rates				
	2015	2014		
Member	7.88%	7.91%		
Employer*	4.73%	4.74%		
State	3.15%	3.17%		

<sup>\*</sup>Excludes administrative expense rate.

The Office of the State Actuary (OSA) calculated the member, employer, and state contribution rates as a percentage of salary based on the long-term funding policy adopted by the LEOFF 2 Retirement Board (the Board). The summary table below shows contribution rates based on the 2015 valuation along with rates from the previous valuation. The **Actuarial Exhibits** section of this report shows how we developed these 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 rates adopted by the Board are based on their short-term funding policy. Please see the **Actuarial Certification Letter** for further details on this temporary funding policy. The table to the right shows the contribution rates adopted by the Board for 2017-21.

Adopted Contribution Rates*		
Member	8.75%	
Employer**	5.25%	
State	3.50%	

<sup>\*</sup>Adopted for period 2017-21.

### **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 Board-retained actuary based on an actuarial valuation performed on asset, participant, and plan information compiled in odd-numbered years. In calculating basic contribution rates, the Board-retained actuary applies the statutory funding policies described in this section. 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, subject to revision by the Legislature.

RCW 41.45.070 requires that a temporary and supplemental contribution rate increase be charged to fund the cost of benefit enhancements enacted following the adoption of the basic rates. Supplemental contribution rates are included in the basic rates at the beginning of the next contribution rate-setting cycle.

#### **FUNDING POLICY**

Washington State relies on systematic actuarial funding to finance the on-going cost of the state retirement systems. Under this financing approach, we reduce the cost of future pension payments by the expected long-term return on invested contributions.

The state's funding policy is found in RCW 41.45 — Actuarial Funding of State Retirement Systems. It includes the following goals:

 Provide a dependable and systematic process for funding the benefits to members and retirees of the Washington State Retirement Systems.

<sup>\*\*</sup>Excludes administrative expense rate.

#### I. SUMMARY OF KEY RESULTS

- Fully amortize the total cost of LEOFF Plan 1 not later than June 30, 2024.
- Continue to fully fund LEOFF 2 as provided by law.
- Establish long-term employer contribution rates that will remain a relatively predictable proportion of future state budgets.
- Fund, to the extent feasible, all benefits over the working lives of those members so that the taxpayers who receive the benefit of those members' service pay the cost of those benefits.

The Board adopted minimum contribution rates equal to 90 percent of the normal cost rate calculated under the EAN actuarial cost method.

If all actuarial assumptions are realized and all future contributions required under this funding policy are made, we expect the funding policy to accumulate sufficient assets to provide for all future benefits for current members when due.

The Washington State Investment Board (WSIB) directs the investment of retirement system contributions. RCW 43.33A.110 requires WSIB to maximize investment returns at a prudent level of risk.

### **COMMENTS ON 2015 RESULTS**

Many factors can influence how actuarial valuation results change from one measurement date to the next. Those factors include: changes in the covered population; changes in plan provisions, assumptions, and methods; and experience that varies from our expectations.

We observed no significant changes in the covered population. We also made no significant changes to our actuarial methods. Plan provisions changed for some survivors of LEOFF members; otherwise, plan provisions were unchanged. Legislation also passed that opens a temporary window for retirees to purchase an annuity from the LEOFF Plan 2 trust fund. We expect all annuity purchases to be actuarially equivalent and incur no expected cost or savings to the plan. Please see our actuarial fiscal note for Chapter 222, Laws of 2016 from the 2016 Legislative Session for additional considerations on the fiscal impact of this benefit change.

In terms of annual plan experience, the actual rate of investment return was 4.93 percent and below the assumed rate. The rate of investment return on the actuarial (or smoothed) value of assets was lower than expected for the plan year as well. We also observed greater than expected salary growth for the year when estimating plan liabilities and the present value of future salaries.

Detailed gain and loss information by system can be found in the **Actuarial Exhibits** section of this report. Please see the **Actuarial Certification Letter** for additional comments on the 2015 valuation results.

### **ACTUARIAL LIABILITIES**

The next table summarizes key measures of actuarial liability along with the liabilities from last year's valuation. The Future Value of Fully Projected Benefits represents the total expected value of all future benefit payments for all members as of the valuation date. The Present Value of Fully Projected Benefits represents today's value of the Future Value of Fully Projected Benefits when we discount future benefit payments with the valuation interest rate. In other words, if we invest the Present Value of Fully Projected Benefits as a lump sum amount at the valuation date and earn the valuation interest rate each year, there would be enough money to pay all future benefit payments for current members.

The Actuarial Accrued Liability identifies the portion of the present value of future benefits that has been accrued as of the valuation date based on the EAN actuarial cost method. The Unfunded Actuarial Accrued Liability (UAAL)

Actuarial Liabilities		
(Dollars in Millions)	2015	2014
Future Value of Fully Projected Benefits	\$95,769	\$89,832
Present Value of Fully Projected Benefits	\$12,152	\$11,205
Present Value of Accrued Benefits*	\$8,838	\$8,069
Unfunded Actuarial Accrued Liability	N/A	N/A
Valuation Interest Rate	7.50%	7.50%

\*Calculated using Entry Age Normal (EAN) cost method.

represents the excess, if any, of the Present Value of Accrued Benefits at the valuation date over the Actuarial Value of Assets. In other words, the UAAL equals the actuarial accrued liability at the valuation date not covered by current actuarial assets.

See the Actuarial Exhibits

section of this report for a summary of actuarial liabilities and our website for Projected Benefit Payments by year. Also, see the **Glossary** for brief explanations of the actuarial terms.

### **ASSETS**

The table below shows the Market Value of Assets (MVA) and Actuarial (or smoothed) Value of Assets (AVA) along with approximate rates of investment return.

To limit the volatility in contribution rates and funded status due to short-term market fluctuations, we smooth

Assets				
(Dollars in Millions)	2015	2014		
Market Value of Assets	\$9,833	\$9,251		
Actuarial Value of Assets	9,320	8,638		
Contributions*	294	282		
Disbursements	162	135		
Investment Return	430	1,456		
Other**	\$19	\$10		
Rate of Return on Assets***	4.93%	18.89%		

<sup>\*</sup>Employee and Employer.

(or defer recognition of) the difference between actual and expected annual investment returns over a period not to exceed eight years. The AVA equals the MVA less the Total Deferred Investment Gains and (Losses) at the valuation date. The AVA can never be less than 70 percent or greater than 130 percent of the MVA.

See the **Actuarial Exhibits** section of this report for additional information on the plan's assets as well as the development of the AVA.

### **FUNDED STATUS**

The funded status helps readers evaluate the health of a pension plan. A history of funded status measured consistently over a defined period helps readers evaluate a plan's funding progress over time. The funded status represents the portion of the actuarial accrued liability covered by today's actuarial assets. A plan with a 100 percent funded status has one dollar in actuarial assets for each dollar of accrued liability at the valuation date. A plan with a funded status of at least 100 percent is generally considered to be on target with its financing plan. However, a plan more/less than 100 percent funded is not automatically considered over-funded/at-risk.

The next table displays the funded status for LEOFF Plan 2. In this report, we present funded status based on the EAN cost method only. Prior reports included funded status results based on the Projected Unit Credit (PUC) cost method.

<sup>\*\*</sup>Includes transfers, restorations, payables, etc.

<sup>\*\*\*</sup>This is the time-weighted rate of return on the Market Value of Assets, net of expenses. The Actuarial Value of Assets is used in determining contribution rates.

## **PARTICIPANT DATA**

The following table summarizes the participant data used in the actuarial valuation for the plan year ending June 30, 2015, along with information from last year's valuation. See the **Participant Data** section of this report for additional information.

## **KEY ASSUMPTIONS**

The next table displays key economic assumptions used in the actuarial valuation. These assumptions are unchanged from our last valuation.

Funded Status			
(Dollars in Millions)	2015	2014	
a. Entry Age Normal Accrued Liability	\$8,838	\$8,069	
b. Market Value of Assets	9,818	9,251	
c. Deferred Gains/(Losses)	498	613	
d. Actuarial Value of Assets (b-c)	9,320	8,638	
Unfunded Liability - Entry Age Normal (a-d)	(\$482)	(\$569)	
Entry Age Normal Funded Ratio (d/a)	105%	107%	

Participant Data				
	2015	2014		
Active Members				
Number	17,019	16,773		
Total Salaries (in millions)	\$1,743	\$1,661		
Average Annual Salary	\$102,411	\$99,048		
Average Attained Age	43.6	43.6		
Average Service	14.7	14.7		
Retirees and Beneficiaries				
Number	3,710	3,235		
Average Annual Benefit	\$42,344	\$40,318		
Terminated Members				
Number Vested	785	749		
Number "Non-Vested"	1,693	1,618		

Key Assumptions		
Valuation Interest Rate	7.50%	
Salary Increase	3.75%	
Inflation	3.00%	
Growth in Membership*	1.25%	

<sup>\*</sup>Applies to the LEOFF 1 funding method only.



## II. Actuarial **Exhibits**





















## Office of the State Actuary

"Supporting financial security for generations."

#### **Actuarial Certification Letter** Law Enforcement Officers' and Fire Fighters' Retirement System Plan 2 **Actuarial Valuation Report** As of June 30, 2015

November 2016

This report documents the results of an actuarial valuation of the Law Enforcement Officers' and Fire Fighters' Retirement System Plan 2 (LEOFF 2) as defined under Chapter 41.26 of the Revised Code of Washington. The primary purpose of this valuation is to determine contribution requirements for the retirement plan as of the June 30, 2015, measurement date, consistent with the prescribed funding policy established by the LEOFF 2 Retirement Board (the Board). This valuation also provides information on the funding progress and developments in the plan over the past year. This valuation report should not be used for other purposes. Please replace this report with a more recent report when available.

Future actuarial measurements may differ significantly from the current measurements presented in this report if plan experience differs from that anticipated by the assumptions or changes occur in the methods, assumptions, plan provisions or applicable law. We have not performed analysis of the potential range of such future measurements for the purposes of this valuation. Please see the risk assessment on our website for stochastic analysis of possible future outcomes.

The valuation results summarized in this report involve calculations that require assumptions about future economic and demographic events. We believe that the assumptions and methods used in the underlying valuation are reasonable and appropriate for the primary purpose stated above. The use of another set of assumptions and methods, however, could also be reasonable and could produce materially different results. Actual results may vary from our expectations.

The assumptions used in this valuation for investment return, inflation, and salary growth were adopted by the Board in the 2011 Interim. The membership growth assumption was prescribed by the Legislature. Please see our latest Economic Experience Study report for further information on the economic assumptions. The Board adopted updates to the demographic assumptions as

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Actuarial Certification Letter Page 2 of 2

part of their review of the <u>2007-2012 Demographic Experience Study</u> results and adoption of the associated contribution rates. The Legislature was responsible for the selection of the actuarial cost and asset valuation methods. In our opinion, all methods, assumptions, and calculations are reasonable and are in conformity with generally accepted actuarial principles and standards of practice as of the date of this publication.

The Department of Retirement Systems (DRS) provided us with member and beneficiary data. We checked the data for reasonableness as appropriate based on the purpose of the valuation. The Washington State Investment Board (WSIB) and DRS provided financial and asset information. An audit of the financial and participant data was not performed. We relied on all the information provided as complete and accurate. In our opinion, this information is adequate and substantially complete for purposes of this valuation.

The asset smoothing method adopted during the 2003 Legislative session (Chapter 11, Laws of 2003, E1) was intended to address the volatility of contribution rates under the aggregate funding method when used in combination with the existing asset allocation policy of WSIB. The combination of the current asset smoothing method with any other funding method or asset allocation policy may not be appropriate.

During the 2016 Interim, the Board adopted contribution rates based on 100 percent of the normal cost under the Entry Age Normal funding method for the 2017-19 and 2019-21 Biennia. This is a continuation of their temporary stable contribution rate funding policy which produces contribution rates at June 30, 2015, that exceed the requirements under the plan's actuarial cost method and long-term funding policy. In our opinion, this temporary funding policy is reasonable and consistent with the Board's risk management and stable contribution rate goals. The adoption of contribution rates below the rates for 2017-21 could also be reasonable, but potentially inconsistent with the Board's goals.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this report is intended to be complete, we are available to offer extra advice and explanations as needed.

Matthew M. Smith, FCA, EA, MAAA State Actuary

Lisa A. Won, ASA, FCA, MAAA Deputy State Actuary

Office of the State Actuary

November 2016

## **CONTRIBUTION RATES**

Member and Employer Rate Summary			
	2015	2014	
Member	7.88%	7.91%	
Employer*	4.73%	4.74%	
State (Normal Cost)	3.15%	3.17%	
State (Plan 1 UAAL)	0.00%	0.00%	
Total State	3.15%	3.17%	

<sup>\*</sup>Excludes administrative expense rate.

The following tables show the development of the normal cost rates. Consistent with the Law Enforcement Officers' and Fire Fighters' (LEOFF) Plan 2 Retirement Board's (the Board) funding policy, the normal cost rates include minimum contribution rates to provide stable and adequate contribution rates over time. The minimum rates are 90 percent of the normal cost calculated under the Entry Age Normal (EAN) funding method. Please see the Glossary for a more detailed explanation of EAN.

We include information for LEOFF Plan 1 because the prior funding policy required the state to amortize any LEOFF 1 Unfunded Actuarial Accrued Liability (UAAL) not later than June 30, 2024, using projected salaries of both LEOFF 1 and LEOFF 2 members.

Development of Employer/State Rates		
		LEOFF 2
a.	Total Normal Cost	15.76%
b.	Employee Normal Cost (a x 50%)	7.88%
C.	Total Employer/State Normal Cost (a - b)	7.88%
d.	State Normal Cost (a x 20%)	3.15%
e.	Employer Normal Cost (c - d)*	4.73%
f.	Cost to Amortize UAAL	0.00%
g.	Total Employer Contribution Rate (e + f)**	4.73%

<sup>\*</sup>Excludes administrative expense rate.

Amortization of the Plan 1 Unfunded Actuarial Accrued Liability (UAAL)					
(Do	(Dollars in Millions) LEOFF 1				
a.	Future Value of Fully Projected Benefits	\$10,633			
b.	Present Value of Fully Projected Benefits (PVFB)	4,313			
С	Valuation Assets	5,404			
d.	Actuarial Present Value of Future Normal Costs	0			
e.	UAAL (b - c - d)	(1,090)			
f.	Expected UAAL Contributions to 2017	0			
g.	Remaining UAAL (e - f)	(\$1,090)			
h.	Amortization Date	6/30/2024			
i.	Present Value of Projected Salaries beyond 2013	\$11,025			
j.	Preliminary Contribution Rate (g/ i)*	(9.89%)			
k.	Change In Plan Provisions (Laws of 2014)	0.00%			
l.	Contribution Rate to Amortize the UAAL (j + k)*	(9.89%)			

<sup>\*\*</sup>The state pays 20% of the total normal cost for LEOFF 2. This reduces the total employer contribution rate from 7.88% to 4.73%.

<sup>\*</sup>No LEOFF 1 UAAL contributions are required when the plan is fully funded under current funding methods and assumptions.

#### II. ACTUARIAL EXHIBITS

Development of Normal Cost Rates		
(Do	LEOFF 2	
1. (	Calculation of Member Normal Cost Rate	
a.	Future Value of Fully Projected Benefits	\$95,769
b.	Present Value of Fully Projected Benefits	12,152
C.	Valuation Assets	9,320
d.	Unfunded Fully Projected Benefits (b - c)	2,832
e.	Plan 1 Present Value of Future Salaries (PVS)	N/A
f.	Plan 2 PVS	18,977
g.	Weighted PVS (2e + 2f)	\$37,954
h.	Employee Normal Cost (d / g)	7.46%
i.	Employee Minimum Contribution Rate	7.88%
j.	Employee Contribution Rate with Minimum	7.88%
k.	Change In Plan Provisions (Laws of 2016)	0.00%
1.	Employee Contribution Rate (j + k)	7.88%
2.	Calculation of Employer/State Normal Cost Rate	
a.	Present Value of Fully Projected Benefits	\$12,152
b.	Valuation Assets	9,320
b.	Valuation Assets Unfunded Fully Projected Benefits (a - b)	9,320 2,832
b. c. d.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions	9,320 2,832 1,416
b. c. d. e.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d)	9,320 2,832 1,416 \$1,416
b. c. d. e. f.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS	9,320 2,832 1,416 \$1,416 \$18,977
b. c. d. e. f. g.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f)	9,320 2,832 1,416 \$1,416 \$18,977 7.46%
<ul><li>b.</li><li>c.</li><li>d.</li><li>e.</li><li>f.</li><li>g.</li><li>h.</li></ul>	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88%
<ul><li>b.</li><li>c.</li><li>d.</li><li>e.</li><li>f.</li><li>g.</li><li>h.</li><li>i.</li></ul>	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate Employer/State Contribution Rate with Minimum	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88%
<ul><li>b.</li><li>c.</li><li>d.</li><li>e.</li><li>f.</li><li>g.</li><li>h.</li><li>i.</li><li>j.</li></ul>	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate Employer/State Contribution Rate with Minimum Change In Plan Provisions (Laws of 2016)	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88% 7.88% 0.00%
b. c. d. e. f. g. h. i. j. k.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate Employer/State Contribution Rate with Minimum Change In Plan Provisions (Laws of 2016) Total Employer/State Contribution Rate (i + j)	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88%
b. c. d. e. f. g. h. i. j. k. 3.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate Employer/State Contribution Rate with Minimum Change In Plan Provisions (Laws of 2016) Total Employer/State Contribution Rate (i + j) Contribution Rates Adopted for 2017-21	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88% 0.00% 7.88%
b. c. d. e. f. g. h. i. j. k. 3. (a.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate Employer/State Contribution Rate with Minimum Change In Plan Provisions (Laws of 2016) Total Employer/State Contribution Rate (i + j) Contribution Rates Adopted for 2017-21 Employee Contribution Rate*	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88% 0.00% 7.88%
b. c. d. e. f. g. h. i. j. k. 3.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate Employer/State Contribution Rate with Minimum Change In Plan Provisions (Laws of 2016) Total Employer/State Contribution Rate (i + j) Contribution Rates Adopted for 2017-21	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88% 0.00% 7.88%
b. c. d. e. f. g. h. i. j. k. 3. (a. b.	Valuation Assets Unfunded Fully Projected Benefits (a - b) Present Value of Employee Contributions Employer/State Responsibility (c - d) Plan 2 PVS Employer/State Normal Cost (e / f) Employer/State Minimum Contribution Rate Employer/State Contribution Rate with Minimum Change In Plan Provisions (Laws of 2016) Total Employer/State Contribution Rate (i + j) Contribution Rates Adopted for 2017-21 Employee Contribution Rate* Employer Contribution Rate (a - c)*	9,320 2,832 1,416 \$1,416 \$18,977 7.46% 7.88% 0.00% 7.88% 8.75% 5.25%

<sup>\*</sup>LEOFF 2 rate: 50% Employee, 30% Employer, 20% State.

Present Value of Fully Projected Benefits		
(Dollars in Millions)	LEOFF 2	
Active Members		
Retirement	\$8,500	
Termination	151	
Death	125	
Disability	391	
ROC* on Termination	95	
ROC* on Death	143	
Total Active	\$9,405	
Inactive Members		
Terminated	\$189	
Service Retired	2,289	
Disability Retired	160	
Survivors	108	
Total Inactive	\$2,747	
Laws of 2016	0	
2015 Total	\$12,152	
2014 Total	\$11,205	

Note: Totals may not agree due to rounding.

Entry Age Normal Accrued Liability*	
(Dollars in Millions)	LEOFF 2
Active Members	
Retirement	\$5,737
Termination	32
Death	46
Disability	217
ROC** on Termination	(28)
ROC** on Death	87
Total Active	\$6,092
Inactive Members	
Terminated	\$189
Service Retired	2,289
Disability Retired	160
Survivors	108
Total Inactive	\$2,747
Laws of 2016	0
2015 Total	\$8,838
2014 Total	\$8,069

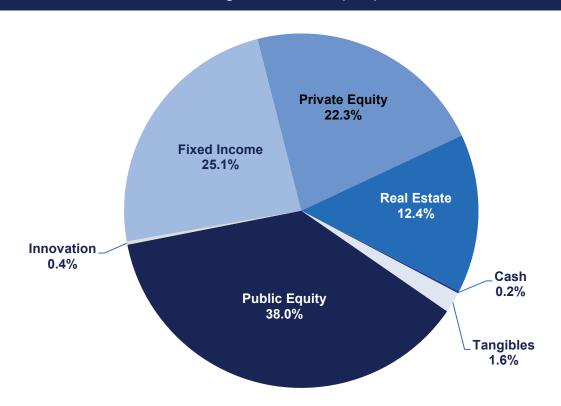
<sup>\*</sup>Return of Contributions

<sup>\*</sup>Calculated using the Entry Age Normal (EAN) cost method. This method was not used to determine contribution requirements.

<sup>\*\*</sup>Return of Contributions

### **PLAN ASSETS**





**Cash:** Highly liquid, very safe investments that can be easily converted into cash, such as Treasury Bills and moneymarket funds.

**Fixed Income:** Securities representing debt obligations and usually having fixed payments and maturities. Different types of fixed income securities include government and corporate bonds, mortgage-backed securities, asset-backed securities, convertible issues, and may also include money-market instruments.

**Innovation:** Fund that provides the ability to invest in a broad range of assets that fall outside the traditional asset classes or management style of existing asset classes.

**Public Equity:** Shares of U.S. and non-U.S. corporations that trade on public exchanges or "over-the-counter." The ownership of a corporation is represented by shares that are claimed on the corporation's earnings and assets.

**Private Equity:** The infusion of equity capital into a private company (one that is not available on the public markets). Private equity investments include securities that are not listed on a public exchange and are not easily accessible to most individuals. These investments range from initial capital in start-up enterprises to leveraged buyouts of mature corporations.

**Real Estate:** An externally-managed selection of partnership investments with the majority of the partnerships invested in high-quality real estate leased to third parties.

**Tangibles:** The tangible asset portfolio invests in sectors such as infrastructure, timber, agriculture, natural resources, commodities, or other sectors consistent with the goals of the asset class.

## **FUNDED STATUS**

In our actuarial valuation report, we calculate a plan's funded status by comparing (a) the plan's current assets, determined under an asset valuation method, to (b) the actuarial accrued liability of its members calculated under an actuarial cost method. Funded status can vary significantly depending on the purpose of the measurement and the assumptions and methods used to determine the funded status.

Based on the purpose of the measurement, actuaries can select from several acceptable actuarial cost methods when measuring a plan's funded status. The cost methods vary in the manner they allocate benefits to past and future time periods. Generally speaking, benefits allocated to past service are considered accrued (or earned). Please see the Glossary for an explanation of the actuarial cost methods we use in this actuarial valuation.

For actuarial valuation reports prior to 2014, we relied on the Projected Unit Credit (PUC) actuarial cost method when reporting funded status. Due to changes in financial reporting from the Governmental Accounting Standards Board (GASB), we now report funded status using the Entry Age Normal

Change in Market Value of Assets	
(Dollars in Millions)	LEOFF 2
2014 Market Value	\$9,251
Revenue	
Contributions	
Employee	147
Employer/State	147
Total Contributions	294
Investment Return	430
Restorations	19
Transfers In	0
Miscellaneous	0
Total Revenue	\$744
Disbursements	
Monthly Benefits	151
Refunds	9
Total Benefits	160
Transfers Out	0
Expenses	2
Total Disbursements	\$162
Payables	\$0
2015 Market Value	\$9,833
2015 Actuarial Value	\$9,320
Ratio (AV/MV)	95%

Note: Totals may not agree due to rounding.

(EAN) actuarial cost method and discontinued use of the PUC method. We believe this change will lessen the confusion that can result from the reporting of multiple funded status measurements in various reports. However, the funded status measures we share in this report may still vary from those presented in the Department of Retirement

Systems (DRS) **Comprehensive Annual** Financial Report (CAFR). These differences occur because the assumptions and methods that apply for determining contribution requirements (under a funding valuation) may not apply for financial reporting under GASB accounting standards (an accounting valuation). Put another way, these measurements still represent distinct measurements for distinct purposes and the results may vary between the two reports.

(Do	llars in Millions)			LEOFF 2*	
a.	Market Value at 6/30/2015			\$9,818	
b.	Deferred Gains and (Losses)				
	Plan Year Ending	<b>Years Deferred</b>	<b>Years Remaining</b>		
	6/30/2015	3	3	(177)	
	6/30/2014	8	6	658	
	6/30/2013	5	2	129	
	6/30/2012	7	3	(167)	
	6/30/2011	8	3	262	
	6/30/2010	5	0	0	
	6/30/2009	8	1	(207)	
	Total Deferral			\$498	
C.	Market Value less Deferral (a -	b)		\$9,320	
d.	70% of Market Value of Assets			\$6,873	
e.	130% of Market Value of Asset	S		\$12,763	
f.	Actuarial Value of Assets**			\$9,320	
Note	Note: Totals may not agree due to rounding.				

**Calculation of Actuarial Value of Assets** 

\*LEOFF Plan 2 Market Value of Assets reduced by a \$15.799 million payable to the LEOFF 2 Benefit Improvement Account due by 6/30/2016, discounted to 6/30/2015 at 7.5%.

<sup>\*\*</sup>Actuarial Value of Assets can never be less than 70% or greater than 130% of the market value of assets.

#### II. ACTUARIAL EXHIBITS

	Investment Gains and (Losses) for Prior Year		
(Do	llars in Millions)	LEOFF 2	
a.	2014 Market Value (at WSIB)	\$9,226	
b.	Total Cash Flow	146	
C.	2015 Market Value (at WSIB)	9,804	
d.	Actual Return (c - b - a)	\$431	
8	Weighted Asset Amount	\$9,299	
f.	Expected Return (7.5% x e)	697	
g.	Investment Gain/(Loss) for Prior Year (d - f)	(266)	
h.	Dollar-Weighted Rate of Return	4.64%	

Note: Totals may not agree due to rounding.

To determine the present value (today's value) of accrued benefits we discount future benefits to the valuation date using the valuation interest rate. The valuation interest rate is adopted by the LEOFF Plan 2 Retirement Board and is consistent with the long-term expected return under the plan's funding policy. (Note: This discount rate may vary from the rate used for financial reporting under GASB accounting standards).

In addition to the valuation interest

rate, we use the same long-term assumptions to develop the funded status measure in this report as we use for determining the contribution requirements of the plan. We don't expect the assumptions to match actual experience over short-term periods. However, we do expect these assumptions to reasonably approximate average annual experience over long-term periods. This measure of funded status is consistent with the state's current funding policy and financing plan for future retirement benefits.

For reporting funded status and calculating contribution requirements, we also use an asset valuation method to determine the Actuarial Value of Assets (AVA). This asset valuation method smooths the inherent volatility in the Market Value of Assets (MVA) by deferring a portion of annual investment gains or losses for a certain number of years. Investment gains and losses occur when the annual return on investments varies from the long-term assumed rate. To determine the 2015 investment gains or losses, we used an investment return assumption of 7.5 percent. The AVA provides a more stable measure of the plan's assets on an ongoing basis.

With this background in mind, we display the funded status on an "actuarial value" basis. For the actuarial basis, we use the assumed long-term rate of return and actuarial value of assets consistent with the plan's funding policy.

It's also reasonable and acceptable to report funded status using other assumptions and methods. The resulting funded status will change with the use of assumptions and methods that vary from what we present in this report. Please visit the <a href="Interactive Reports">Interactive Reports</a> page of our website for funded status measures that vary by interest rate assumptions and asset valuation methods.

We include information for LEOFF Plan 1 because the prior funding policy required the state to amortize any LEOFF 1 Unfunded Actuarial Accrued Liability (UAAL) not later than June 30, 2024, using projected salaries of both LEOFF 1 and LEOFF 2 members.

Generally speaking, under current funding policy, when a plan is less/more than 100 percent funded, we expect higher/lower contribution requirements in the near term to return to a 100 percent funded status over time. A plan with a funded status above 100 percent

Funded Status on an Actuarial Value Basis*			
(Dollars in Millions)	LEOFF 2	LEOFF 1	
EAN Accrued Liability	\$8,838	\$4,307	
Valuation Assets	\$9,320	\$5,404	
Unfunded Liability	(\$482)	(\$1,097)	
Funded Ratio			
2015	105%	125%	
2014	107%	127%	

\*Liabilities valued using the EAN cost method at an interest rate of 7.5% (7.7% for LEOFF 1). All assets have been valued under the actuarial asset method.

will require future contributions if the plan has not yet accumulated sufficient assets to pay both the expected cost of benefits that have been earned today and the expected cost of benefits that will be earned by current members in the future. As of the valuation date, and under the data, assumptions and methods used for this actuarial valuation, only LEOFF Plan 1 has sufficient assets to cease ongoing contributions.

The funded status measures presented in this report are not sufficient to determine whether a plan has enough assets to terminate or settle the plan obligations.

## **ACTUARIAL GAINS/LOSSES**

The next three tables display actuarial gains and losses, expressed as contribution rate changes. Actuaries use gain/loss analysis to compare actual changes to assumed changes in assets, liabilities, and salaries from various sources. We also use this analysis to determine:

- The accuracy of our valuation model and annual processing.
- Why contribution rates changed.
- The reasonableness of the actuarial assumptions.

Actuarial gains will reduce contribution rates; actuarial losses will increase contribution rates. Under a reasonable set of actuarial assumptions, actuarial gains and losses will offset over long-term experience periods.

Change in State Contribution Rate by Source*		
Change in Employer Rate	LEOFF	
2014 Contribution Rate Before Laws of 2015	(8.31%)	
Remove Rate Floor / Ceiling	(0.33%)	
LEOFF 1 Funding Method Changes	0.29%	
2014 Adjusted Contribution Rate	(8.35%)	
Liability Gains/Losses	0.09%	
Asset Gains/Losses	1.44%	
Present Value of Future Salaries Gains/Losses	(0.23%)	
Incremental Changes	0.43%	
Other Gains/Losses	(0.29%)	
Total Change	1.44%	
2015 Preliminary Contribution Rate	(6.91%)	
Increase from Applied Rate Floor	0.17%	
Laws of 2016	0.00%	
2015 Adjusted Contribution Rate	(6.74%)	

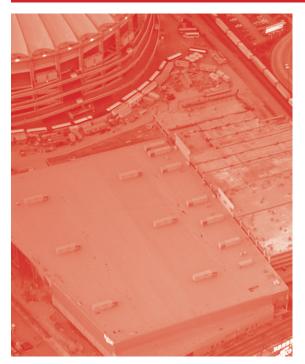
<sup>\*</sup>The LEOFF contribution rate is the State's portion for Plan 2 (20% of the Normal Cost) plus the UAAL rate for Plan 1.

Change in Normal Cost by Source*	
Change in Normal Costs	LEOFF 2
2014 Normal Cost Before Laws of 2015	3.13%
Remove Rate Floor / Ceiling	(0.33%)
2014 Adjusted Normal Cost Rate	2.80%
Liabilities	
Salaries	0.00%
Termination	(0.01%)
Retirement	0.00%
Disability	0.00%
Mortality	0.01%
Growth / Return to Work	0.27%
Other Liabilities	0.03%
Total Liability Gains/Losses	0.30%
Asset Gains/Losses	0.05%
Present Value of Future Salaries Gains/Losses	(0.20%)
Incremental Changes	
Plan Change	0.05%
Method Change	0.00%
Assumption Change	0.00%
Correction Change	0.00%
Experience Study Change	0.00%
Total Incremental Changes Gains/Losses	0.05%
Other Gains/Losses	(0.02%)
Total Change	0.18%
2015 Preliminary Normal Cost	2.98%
Increase from Applied Rate Floor	0.17%
Laws of 2016	0.00%
2015 Adjusted Normal Cost	3.15%
*The LEOFE 2 contribution rate is the State's portion for Pla	n 2 (20%

<sup>\*</sup>The LEOFF 2 contribution rate is the State's portion for Plan 2 (20% of the Normal Cost).

Change in State UAAL Rate by Source*		
Change in UAAL Rate	LEOFF 1	
2014 UAAL Rate Before Laws of 2015	(11.44%)	
Remove Rate Floor / Ceiling	0.00%	
LEOFF 1 Roll Forward Funding Method	0.29%	
2014 Adjusted UAAL Rate	(11.15%)	
Liabilities		
Salaries	(0.01%)	
Termination	0.00%	
Retirement	0.02%	
Disability	0.00%	
Mortality	0.02%	
Return to Work	0.00%	
Inflation (CPI)	(0.40%)	
Other Liabilities	0.16%	
Total Liability Gains/Losses	(0.21%)	
Asset Gains/Losses	1.39%	
Present Value of Future Salaries Gains/Losses	(0.03%)	
Incremental Changes	0.000/	
Plan Change Method Change	0.00% 0.00%	
Assumption Change	0.00%	
	0.36%	
Correction Change	0.00%	
Experience Study Change  Total Incremental Changes Gains/Losses	0.00%	
Other Gains/Losses		
Total Change	(0.27%) 1.26%	
2015 Preliminary UAAL Rate	(9.89%)	
Laws of 2016	0.00%	
2015 Adjusted UAAL Rate	(9.89%)	
2010 Aujusteu UAAL Nate	(3.03%)	

<sup>\*</sup>The contribution rate is the UAAL rate for plan 1. No contributions are required under current law when the plan remains fully funded.

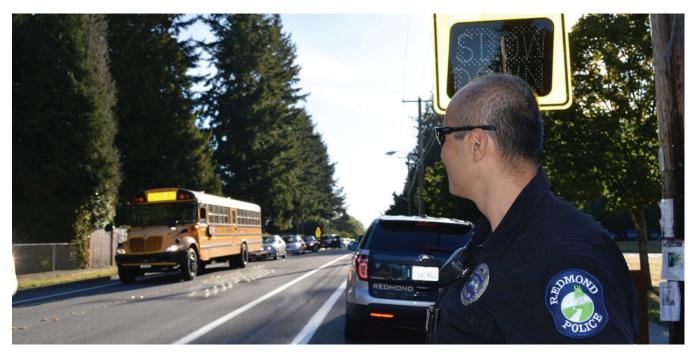


## III. Participant Data



















## **OVERVIEW OF PLAN MEMBERSHIP**

Membership includes fire fighters; emergency medical technicians; law enforcement officers including sheriffs; university, port, and city police officers; and Department of Fish and Wildlife enforcement officers.

Active Membership By Em	ployer
State Agencies	130
Higher Education	114
Community Colleges	0
K-12	0
Counties	2,795
County Sub Divisions	262
First Class Cities	5,006
Other Cities	4,950
Ports	182
Education Service District	0
Fire Districts	3,580
Public Utility District	0
Water Districts	0
Energy Northwest	0
Unions	0
TOTAL	17,019

The following table summarizes participant data changes from last year's valuation to this year's valuation. We divide the participant data into two main categories:

- Actives members accruing benefits in the plan.
- Annuitants members and beneficiaries receiving benefits from the plan.

Reconciliation of Participa	nt Data
2014 Actives	16,773
Transfers	0
Hires/Rehires	986
New Retirees	(418)
Deaths	(10)
Terminations	(312)
2015 Actives	17,019
2014 Annuitants	3,235
New Retirees*	478
Annuitant Deaths	(18)
New Survivors	19
Other	(4)
2015 Annuitants	3,710
Ratio of Actives to Annuitants	4.59

<sup>\*</sup>Includes service and disability retirees.

## **SUMMARY OF PLAN PARTICIPANTS**

Summary of Plan Particip	ants	
	2015	2014
Active Members		
Number	17,019	16,773
Total Salaries (Millions)	\$1,743	\$1,661
Average Age	43.6	43.6
Average Service	14.7	14.7
Average Salary	\$102,411	\$99,048
Terminated Members		
Number Vested	785	749
Number "Non-Vested"	1,693	1,618
Retirees		
Number of Retirees (All)	3,710	3,235
Average Monthly Benefit, All Retirees	\$3,529	\$3,360
Number of New "Service Retirees"	452	431
Average Monthly Benefit, New "Service Retirees"	\$4,430	\$4,209



## IV. Appendices





















## **ACTUARIAL METHODS AND ASSUMPTIONS**

To calculate the contribution rates necessary to pre-fund the plan's benefits, an actuary uses an actuarial cost method, asset valuation method, economic assumptions, and demographic assumptions. This section, together with the web pages linked below, list the actuarial methods and assumptions used for this valuation.

#### **ACTUARIAL METHODS**

Please see the Actuarial Methods web page for descriptions of the actuarial cost methods and asset valuation method we use for this valuation.

#### **ACTUARIAL ASSUMPTIONS**

Assumptions that change regularly, along with new assumption and method changes since the last actuarial valuation report, are listed within this section. Otherwise, please see the Actuarial Assumptions web page for descriptions of all remaining assumptions.

#### **Demographic Assumptions**

	Employee Contribution Rates for Savings Fund Accrual	
LEOFF 2		8.68%

This assumption helps us estimate the value of accumulated employee contributions with interest if a member elects a refund of contributions instead of a deferred retirement allowance upon termination.

#### **New Miscellaneous Assumptions**

Remarriage Assumptions for Death Survivors in LEOFF 2 Percent of Survivors Assumed to	and WSPRS
Remarry	40%
Assumed Time Period Until Rema	arriage
	Years
Current Survivors	2
Future Survivors	4
Benefit COLA Assumption*	3.75%

Survivors of duty-related deaths may qualify for a death benefit paid by Labor and Industries (L&I). Upon remarriage the death benefit is paid from the respective system's pension trust fund.

Note: We assume all duty-related death survivors could qualify for the remarriage benefit.

\*The benefit COLA changes with the state average wage.

#### CHANGES IN METHODS AND ASSUMPTIONS SINCE THE LAST VALUATION

We changed the methods we use to value liabilities in the following ways.

- We updated assumed administrative factors.
- We corrected how our valuation software calculates non-duty disability benefits for LEOFF 2 active members.
- We added new LEOFF 2 and WSPRS benefit definitions within our valuation software to model legislation

#### IV. APPENDICES

signed into law during the 2015 Legislative Session. The law now pays the Labor and Industries (L&I) duty-related death survivor benefit from each system's respective trust fund upon remarriage of the survivor. Prior to the legislation, the L&I survivor benefit ended when the survivor of the duty-related death remarried.

### **SUMMARY OF PLAN PROVISIONS**

The summary of key plan provisions used in the actuarial valuation are provided in two sets of tables. The table below contain plan provisions that can change frequently while the provisions that change less frequently can be found on our website: <u>Summary of General Plan Provisions</u>.

These tables present high-level summaries and are not meant to be exhaustive lists. For complete details of plan provisions, please refer to the statutes governing the systems or contact the plan administrator, Department of Retirement Systems (DRS). In the unlikely event that information contained in these summary tables conflicts with state law, the law takes precedence.

Summary of Free	quently Changing Plan Prov	isions - LEOFF
	Plan 1	Plan 2
COLA	Full CPI*	Lesser of CPI* or 3%
Changes in Plan Provisions Since Last Valuation	Retiree Beneficiary Designation, (C 120 L 16)	Emergency Services Benefits, (C 115 L 16); Retiree Annuity Purchase, (C 222 L 16)

<sup>\*</sup>CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bremerton, WA - All Items.

## **AGE/SERVICE DISTRIBUTION**

		Total	96	\$64.782	597,100	\$73,102	1,116	\$87,360	1,286	\$92,879	1,674	\$97,914	1,796	\$104,278	1,397	\$110,594	746	\$112,179	315	\$112,926	49	\$109,129	7	\$84,946	9,074	\$98,883	616 1,563
		An & Over		9	9 0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	Early Retirement Eligible: Normal Retirement Eligible:
		35-30 /		O 6	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	61	\$129,129	9/	\$127,831	12	\$128,783	0	\$0	149	\$128,439	arly Retirem nal Retirem
v		30-34	C	9	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	84	\$129,234	183	\$122,854	89	\$120,845	2	\$116,646	0	\$0	340	\$123,937	Norr
nt Officer y)		25.29	C	9 6	0	\$0	0	\$0	0	\$0	0	\$0	171	\$115,191	515	\$117,708	212	\$114,707	64	\$111,945	13	\$109,986	0	\$0	975	\$116,133	8,197
nforceme ıual Salar		9 20-24		€.		<del>6)</del>	0	\$0	0	\$0	142	\$109,319	581	\$109,749	353	\$110,393	132	\$106,411	48	\$102,512	3	\$109,755	0	\$0	1,259	\$109,255	Males Females
ve Law Ei erage Ann	n 2	Attained Years of Service		€.		\$0	0	\$0	100	\$103,250	296	\$104,015	558	\$104,960	257	\$102,902	77	\$103,024	39	\$93,597	9	\$90,990	_	*	1,634	\$103,777	
Age and Service Distribution of Active Law Enforcement Officers (Number of Actives and Average Annual Salary)	LEOFF Plan 2	Ined Years		<del>0.</del>		*	100	\$98,306	3 478	\$96,978	487	\$97,694	, 264	\$97,626	103	\$ \$96,128	36	\$87,956	10	\$84,189	9	\$104,975		*	1,486	\$90,76\$	7,489
oistributic of Active				₩.		\$92,3	009 (	\$ \$95,155	2 493	\$94,387	302	\$ \$92,130	157	\$ \$90,946	3 59	\$90,568	5 28	\$94,506	∞	* \$105,359		\$61,818	0	0\$ (	1,723	\$93,743	: Vested Not Vested
Service D Number		V		₩.		\$79,8	9	\$80,483	32	\$87,914	22	\$83,233		\$94,563	ee .	\$86,255	5	\$86,354	_	_	0	\$0	0	\$0	159	\$83,592	articipants
Age and \$ )		6	7	- *	62	\$77,502		\$78,781		\$84,783	33	\$78,037		\$79,728	4	\$99,769	က	\$70,003	0	\$0	_		0	\$0	211	\$79,750	Number of Participants: N
`			7-7	\$73 722	136	\$75,661		\$78,840	44	\$79,736	31	\$78,512		\$84,252	4	\$98,560	2	\$72,977	_	*	0	\$0	0	\$0	356	\$78,045	
			41	8656	181	\$61,651 \$66,928	117	\$64,304 \$69,076	1 72	\$65,163 \$67,972	2 39	\$62,395 \$71,238	3 16	\$64,577 \$75,123	8	\$96,545 \$79,696	5 2	\$55,996 \$74,747	0	\$0	1	*	0	0\$ 0	5 477	\$63,390 \$68,417	43.4
			43	\$60.32	106	\$61,65	80	\$64,30	37	\$65,163	22	\$62,395	ω	\$64,577		\$96,54	4,	\$55,996		\$0	0	\$0	0	\$0	305	\$63,390	Service
		Attained Age	IInder 25	2 1 1 2 1 2 2	25-29		30-34		35-39		40-44		45-49		50-54		55-59		60-64		69-29		70 & Over		Total		Average:

Numbers of participants eligible for early and normal retirement are estimates only. \*Annual Salary omitted for privacy reasons.

					(Continued)	<u>ვ</u>	(Continued)							
Attained Age						LEC	LEOFF Plan 2	Service						
	0		2	က	4	5-9	10-14	15-19	20-24	25-29	30-34		35-39 40 & Over	Total
Under 25	16	36	14	9	_	0	0	0	0				0	73
	\$59,947	\$60,662	\$67,525	\$74,922	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,313
25-29	46	116	75	48	4	119	0	0	0	0	0	0	0	445
	\$64,690	\$63,341	\$71,732	\$82,182	\$86,982	\$90,785	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$76,444
30-34	42	100	72	99	89	200	66	0	0	0	0	0	0	947
	\$59,166	\$65,501	\$76,520	\$83,969	\$87,992	\$96,870	\$105,354	\$0	\$0	\$0	\$0	\$0	\$0	\$89,688
35-39	18	42	39	38	46	439	466	120	0	0	0	0	0	1,208
	\$63,460	\$68,625	\$75,304	\$82,445	\$89,308	\$96,915	\$104,392	\$107,084	\$0	\$0	\$0	\$0	\$0	\$97,885
40-44	∞	18	19	10	15	219	437	516	121	0	0	0	0	1,363
	\$60,144	\$65,868	\$75,202	\$80,175	\$86,710	\$97,581	\$106,413	\$112,865	\$116,484	\$0	\$0	\$0	\$0	\$106,679
45-49	9	12	6	00	12	105	276	478	503	146	_	0	0	1,556
	\$57,448	\$73,876	\$77,740	\$73,178	\$86,017	\$95,044	\$104,058	\$113,987	\$120,422	\$125,504	*	\$0	\$0	\$112,983
50-54	2	9		4	9	38	96	217	363	386	132	9	0	1,260
	\$151,866	\$90,691	\$120,642	\$84,142	\$112,808	\$92,949	\$103,597	\$110,397	\$119,062	\$124,810	\$130,432	\$155,401	\$0	\$118,510
55-59	_	2	0	4	2	15	38	77	181	211	177	85	0	793
	*	* \$111,589	\$0	\$0 \$107,850 \$144,705	\$144,705	\$98,141	\$105,770	\$102,591	\$114,851	\$123,840	\$133,948	\$140,095	\$0	\$122,319
60-64	0	0	_	_	_	9	15	22	44	89	62	41	0	261
	\$0	\$0	*	*	*	\$119,708	\$98,230	\$102,240	\$113,934	\$120,564	\$133,024	\$134,367	\$0	\$120,964
69-29	0	0	0	0	0	_	7	2	2	10	10	က	0	35
	\$0	\$0	\$0	\$0	\$0	*	\$136,233	\$118,240	\$122,068	\$130,932	\$117,763	\$116,401	\$0	\$123,940
70 & Over	0	0	0	0	0	0	0	_	_	0	2	0	0	4
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*	*	\$0	\$118,202	\$0	\$0	\$105,394
Total	139	332	233	185	192	1,442	1,434	1,433	1,215	821	384	135	0	7,945
	\$63,458	\$65,672	\$74,846	\$82,573	\$89,038	\$96,341	\$105,084	\$111,654	\$118,544	\$124,407	\$132,185	\$138,509	\$0	\$106,441
Average:	Age	43.9	Nur	Number of Participants:	rticipants: N	: Vested Not Vested	6,807		Males Females	7,471		Early Retirement Eligible: Normal Retirement Eligible:	ent Eligible: ent Eligible:	527 1,567

\*Annual Salary omitted for privacy reasons. Numbers of participants eligible for early and normal retirement are estimates only.

## AGE/YEARS RETIRED DISTRIBUTION

Males Females

61.8

Age Years Retired

Average:

\*Monthly benefit omitted for privacy reasons.

						<u>ვ</u>	(Continued)							
						LEO	LEOFF Plan 2							
Attained Age						Attaine	Attained Years Retired	tired						
	0	_	2	က	4	2-9	10-14	15-19	20-24	25-29	30-34	35-39 40 & Over	& Over	Total
Under 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
50-54	24	29	2	0	0	0	0	0	0	0	0	0	0	55
	\$4,528	\$3,812	\$4,797	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,160
55-59	22	06	75	69	45	29	0	0	0	0	0	0	0	403
	\$5,242	\$5,163	\$4,715	\$4,801	\$4,515	\$3,483	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,677
60-64	25	63	92	44	22	153	38	0	0	0	0	0	0	454
	\$5,163	\$4,855	\$4,934	\$5,079	\$4,976	\$3,727	\$2,476	\$0	\$0	\$0	\$0	\$0	\$0	\$4,342
62-69	2	17	12	22	20	79	51	9	0	0	0	0	0	212
	\$4,629	\$4,158	\$4,348	\$4,255	\$4,857	\$3,791	\$2,767	\$2,030	\$0	\$0	\$0	\$0	\$0	\$3,724
70-74	0	2	7	4	2	25	24	4	0	0	0	0	0	99
	\$0	\$2,040	\$5,472	\$2,514	\$3,454	\$2,438	\$2,447	\$2,236	\$0	\$0	\$0	\$0	\$0	\$2,590
75-79	0	0	0	0	0	က	80	7	5	0	0	0	0	23
	\$0	\$0	\$0	\$0	\$0	\$2,430	\$2,402	\$1,557	\$1,082	\$0	\$0	\$0	\$0	\$1,862
80-84	0	0	0	0	0	0	0	9	5	0	0	0	0	11
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,950	\$984	\$0	\$0	\$0	\$0	\$1,511
85-89	0	0	0	0	0	0	0	_	0	_	0	0	0	2
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	*	\$0	\$0	\$0	\$1,985
90-94	0	0	0	0	0	0	0	0	_	0	0	0	0	_
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	*
95 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	7	204	167	130	105	227	124	VC	-	-	c	c	c	4 227
	\$5 042	\$4.755	44 798	¢4 737	64 720	42 582	62 E00	64 054	#0e	- +	9 6	9 6	•	1,42,1
	45,04	2001											5	

Males 1,15 Females 7

61.8

Age Years Retired \*\*Monthly benefit omitted for privacy reasons.

		Total	37	\$1,682	29	\$2,817	41	\$2,546	44	\$3,163	37	\$2,592	7	\$1,992	0	\$0	_	*	0	\$0	0	\$0	0	\$0	196	-
		& Over	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	•
		35-39 40 &	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	
		30-34	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	_	*	0	\$0	0	\$0	0	\$0	_	
		25-29	0	\$0	0	\$0	0	\$0	0	\$0	_	*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	~	
		20-24	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	C	
	etired	15-19	0	\$0	0	\$0	က	\$760	<del>-</del>	*	က	\$2,062	2	\$877	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	σ	1
<b>LEOFF Plan 2</b>	<b>Attained Years Retired</b>	10-14	7	\$983	~	*	7	\$1,647	1	\$2,758	17	\$2,542	က	\$1,334	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	46	
E E	Attaine	2-9	12	\$1,666	6	\$2,097	21	\$2,651	20	\$3,011	14	\$2,990	_	*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	77	
		4	2	\$2,816	3	\$3,279	_	*	7	\$2,146	2	\$2,235	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	7	
		က	∞	\$1,753	2	\$2,910	4	\$3,825	4	\$4,895	0	\$0	_	*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	10	2
		7	2	\$1,534	4	\$1,946	က	\$3,204	2	\$3,927	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	14	
		_	က	\$2,682	6	\$4,014	2	\$3,479	4	\$4,124	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	2	
		0	0	\$0	_	*	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	80	-	
	Attained Age		Under 50		50-54		55-59		60-64		69-29		70-74		75-79		80-84		85-89		90-94		95 & Over		Total	

Average: Age Years Retired \*Monthly benefit omitted for privacy reasons.

57.7 7.3

160 36

Males Females

			lmuN)	(Number of All	Members	With	Disabilities (Continued)	and Average	Mont	ly Benefit)	: ⊋			
						LEC	LEOFF Plan 2							
Attained Age						Attain	<b>Attained Years Retired</b>	setired						
	0	_	7	က	4	2-9	10-14	15-19	20-24	25-29	30-34	35-39 40 & (	Over	Total
Under 50	2	_	2	0	0	3	4	0	0	0	0	0	0	12
	\$3,868	*	\$2,802	\$0	\$0	\$1,193	\$959	\$0	\$0	\$0	\$0	\$0	\$0	\$2,084
50-54	0	2	0	0	0	4	0	0	0	0	0	0	0	6
	\$0	\$3,451	\$0	\$0	\$0	\$1,242	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,469
55-59	0	<b>∞</b>	80	9	_	15	9	0	0	0	0	0	0	44
	\$0	\$5,115	\$4,636	\$4,451	*	\$3,464	\$1,666	\$0	\$0	\$0	\$0	\$0	\$0	\$3,882
60-64	0	2	9	2	7	19	9	_	0	0	0	0	0	46
	\$0	\$5,077	\$3,836	\$4,295	\$5,375	\$3,627	\$2,197	*	\$0	\$0	\$0	\$0	\$0	\$3,846
62-69	0	0	~	4	2	6	1	~	0	0	0	0	0	28
	\$0	\$0	*	\$3,649	\$4,149	\$3,448	\$2,931	*	\$0	\$0	\$0	\$0	\$0	\$3,207
70-74	0	0	0	0	0	2	2	_	2	0	0	0	0	7
	\$0	\$0	\$0	\$0	\$0	\$1,287	\$1,810	*	\$707	\$0	\$0	\$0	\$0	\$1,352
75-79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
80-84	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
85-89	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
90-94	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
95 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	2	16	17	15	10	52	29	က	2	0	0	0	0	146
	\$3,868	\$4,536	\$4,064	\$4,185	\$5,006	\$3,135	\$2,168	\$1,562	\$707	\$0	\$0	\$0	\$0	\$3,385

Average: Age 5 Years Retired \*Monthly benefit omitted for privacy reasons.

59.9 6.2

130

Males Females

Attained Years Retired           1         2         3         4         5-9         10-14         16-19         20-24         25-29           3         0         1         3         21         2         0         0         0           971         \$0         1         3         21         2         0	LEOFF Plan 2           Attained Years Retired           2         3         4         5-9         10-14         15-19         20-24           5         4         5-9         10-14         15-19         20-24           5         5         1         2         0         0           5         4         5-9         10-14         15-19         20-24           5         4         5-9         10-14         15-19         20-24           5         4         5-1,681         \$1,776         \$0         0           5         5         7         9         0         0           6         7         1         9         0         0           7         4         \$5,385         \$1,681         \$1,658         \$0         \$0           80         5         \$1,681         \$1,658         \$0         \$0         0           80         \$0         \$1,223         \$1,838         \$1         \$0         0           \$0         \$0         \$1,765         \$0         \$0         \$0         \$0           \$0         \$0         \$0         \$1,765         \$1,64
Attained Years Retired  2 3 4 5-9 10-14 15-  50 1 1 3 21 2  50 8 \$1,063 \$954 \$2,763 \$1  1 1 2 8 2  2 3 2 19 2  2 3 2 19 2  8 22 3 2 19 9  8 23,343 \$1,813 \$2,845 \$1,681 \$1,658  0 0 1 1 6 5  \$0 \$0 \$0 \$1,223 \$1,838  \$0 \$0 \$0 \$1 22 \$1,838  \$0 \$0 \$0 \$1 22 \$1,649 \$1,670  \$0 \$0 \$0 \$1 \$1 \$1,658  \$0 \$0 \$0 \$1 \$1 \$1,658  \$0 \$0 \$0 \$1 \$1,776  \$0 \$0 \$0 \$1,223 \$1,838  \$0 \$0 \$0 \$1,765  \$0 \$0 \$1,765  \$0 \$0 \$0 \$1,765  \$0 \$0 \$0 \$1,765  \$0 \$0 \$0 \$1,765  \$0 \$0 \$0 \$1,765  \$0 \$0 \$0 \$1,765  \$0 \$0 \$1,765  \$0 \$0 \$0 \$1,765  \$0 \$1,765  \$0 \$1,	Attained Years Retired  3
\$0	\$971 \$0 1 3 6 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
\$0	\$971 \$0 1 3 \$971 \$0 4 \$2,300
\$3,343 \$1,8 \$3,343 \$1,8 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0	\$971 \$971 \$2,300 \$1 \$2,300 \$1 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0
€. €.	\$2,300 \$2,300 \$1 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0

56.2 7.3

Average: Age Years Retired \*\*Monthly benefit omitted for privacy reasons.

						රි	(Continued)							
Attained Age						LE(	LEOFF Plan 2 Attained Years Retired	etired						
	0	_	2	3	4	2-9	10-14	15-19	20-24	25-29	30-34	35-39 40 & Over	Over	Total
Under 50	0	_	2	_	က	4	0	0	0	0	0	0	0	7
	\$0	*	\$2,983	*	\$1,610	\$2,254	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,166
50-54	_	_	2	0	2	2	7	0	0	0	0	0	0	13
	*	*	\$1,795	\$0	\$2,948	\$2,432	\$2,115	\$0	\$0	\$0	\$0	\$0	\$0	\$2,133
55-59	_	_	0	~	2	∞	2	0	0	0	0	0	0	15
	*	*	\$0	*	\$3,832	\$3,800	\$1,613	\$0	\$0	\$0	\$0	\$0	\$0	\$3,569
60-64	_	<u></u>	2	_	0	9	4	_	_	0	0	0	0	17
	*	*	\$4,180	*	\$0	\$2,456	\$2,728	*	*	\$0	\$0	\$0	\$0	\$2,902
62-69	0	_	0	0	2	က	2	0	0	0	0	0	0	œ
	\$0	*	\$0	\$0	\$6,032	\$3,983	\$3,052	\$0	\$0	\$0	\$0	\$0	\$0	\$4,008
70-74	0	0	0	0	_	_	0	0	_	0	0	0	0	က
	\$0	\$0	\$0	\$0	*	*	\$0	\$0	*	\$0	\$0	\$0	\$0	\$1,503
75-79	0	0	_	0	0	0	0	0	7	_	0	0	0	4
	\$0	\$0	*	\$0	\$0	\$0	\$0	\$0	\$841	*	\$0	\$0	\$0	\$1,368
80-84	0	0	0	0	0	0	0	0	_	0	0	0	0	_
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	*
85-89	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
90-94	0	0	0	0	0	0	0	0	_	0	0	0	0	_
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	*
95 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	က	3	7	က	10	27	10	_	9	_	0	0	0	73
	\$3,286	\$2,998	\$2,979	\$2,771	\$3,140	\$3,015	\$2,447	*	\$824	*	\$0	\$0	\$0	\$2,722

12

Males Females

58.3

Average: Age Years Retired \*Monthly benefit omitted for privacy reasons.

## **HISTORICAL DATA**

			Histori	Historical Data						
(Dollars in Millions)	2015	2014	2013	2012	2011	2010	2009	2008	2007*	2006
Contribution Information**										
Employer Rate	4.73%	4.74%	4.78%	4.64%	4.54%	4.54%	4.44%	4.34%	4.56%	4.66%
State Rate	3.15%	3.17%	3.19%	3.10%	3.03%	3.03%	2.96%	2.89%	3.04%	3.11%
Employee Rate	7.88%	7.91%	7.97%	7.74%	7.57%	7.57%	7.40%	7.23%	%09.2	7.77%
Funded Status										
Entry Age Normal Liability	\$8,838	\$8,069	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Market Value of Assets	\$9,833	\$9,251	\$7,637	\$6,640	\$6,366	\$5,081	\$4,309	\$5,315	\$5,185	\$4,339
Actuarial Value of Assets	\$9,320	\$8,638	\$7,862	\$7,222	\$6,621	\$6,043	\$5,564	\$5,053	\$4,360	\$3,844
Unfunded Liability	(\$482)	(\$269)	A/N	A/N	N/A	N/A	N/A	N/A	N/A	A/N
Funded Ratio	105.5%	107.1%	A/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Participant Data										
Number of Actives	17,019	16,773	16,687	16,720	16,805	16,775	16,951	16,626	16,099	15,718
Total Annual Salaries	\$1,743	\$1,661	\$1,597	\$1,560	\$1,535	\$1,490	\$1,443	\$1,345	\$1,234	\$1,172
Number of Terminated Vested	785	749	869	689	655	781	672	649	629	265
Number of Terminated, Not Vested	1,693	1,618	1,565	1,558	1,617	1,707	1,663	1,531	1,433	1,362
Number of Retirees and Beneficiaries	3,710	3,235	2,782	2,344	2,015	1,639	1,367	1,134	924	779
Total Annual Benefits	\$157	\$130	\$105	\$82	\$65	\$49	\$38	\$29	\$22	\$17
Assumptions										
Valuation Interest Rate	7.50%	7.50%	7.50%	7.50%	7.50%	8.00%	8.00%	8.00%	5.94%	8.00%
Salary Increase	5.28%	5.24%	2.30%	5.43%	5.61%	6.55%	6.61%	6.61%	5.49%	7.40%
Inflation***	3.00%	3.00%	3.00%	3.00%	3.00%	3.50%	3.50%	3.50%	3.50%	3.50%
Growth in Membership	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	0.94%	1.25%
Actuarial Experience										
Return on Market Value	4.64%	18.93%	12.31%	1.45%	21.08%	12.99%	(22.64%)	(1.33%)	16.61%	15.77%
Return on Actuarial Value	6.26%	7.79%	6.41%	6.25%	6.15%	4.84%	5.72%	11.04%	10.03%	10.80%
Salary Increase	5.48%	5.28%	3.91%	3.22%	3.48%	2.35%	%69.9	7.65%	4.31%	2.50%
Inflation	1.93%	1.22%	2.54%	3.17%	0.78%	0.44%	4.48%	3.79%	3.73%	3.02%
Growth in Membership	1.23%	0.37%	(0.45%)	(0.87%)	(0.12%)	0.17%	1.53%	2.62%	1.83%	2.66%
COLA	1.93%-3%	1.22%-3%	2.54%-3%	3.00%	0.78%-3%	0.44%-3%	3.00%	3.00%	3.00%	3.00%

\*For the 2007 valuation, the salary, interest, and growth rates were not annualized. They reflect the actual valuation period of nine months.

<sup>\*\*</sup>Historical contribution rates shown are the actuarially calculated rates and may not match those adopted by the LEOFF 2 Board.

<sup>\*\*\*</sup>Based on the assumption for prior year's CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bremerton, WA - All Items.

## **GLOSSARY**

See the <u>Glossary</u> on our website.

## WASHINGTON STATE

Law Enforcement Officers' and Fire Fighters' Plan 2 Retirement Board





