



# 2007 Preliminary LEOFF 2 Actuarial Valuation Report

*Chris Jasperson, ASA  
Actuarial Assistant*



Office of the State Actuary

*"Securing tomorrow's pensions today."*

*June 18, 2008*

# *Today's Presentation Topics*

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- Future benefits paid by funding source
- Preliminary contribution rates
- Assets
- Liabilities
- Funded status
- Participant data
- Next steps



# *What's In The 2007 LEOFF 2 AVR*

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- Report of the Actuarial Valuation as of June 30, 2007
- Includes assumptions from Preliminary Experience Study
- Includes cost of 2008 Legislation
- Assumes plan is ongoing



# *Why We Perform The Actuarial Valuations*

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- Systematic actuarial funding
  - Funding methods set in statute
- Calculate contribution rates to adequately fund future benefits
  - Determine liabilities
  - Compare with assets





# *Sources Of Funding For LEOFF 2*

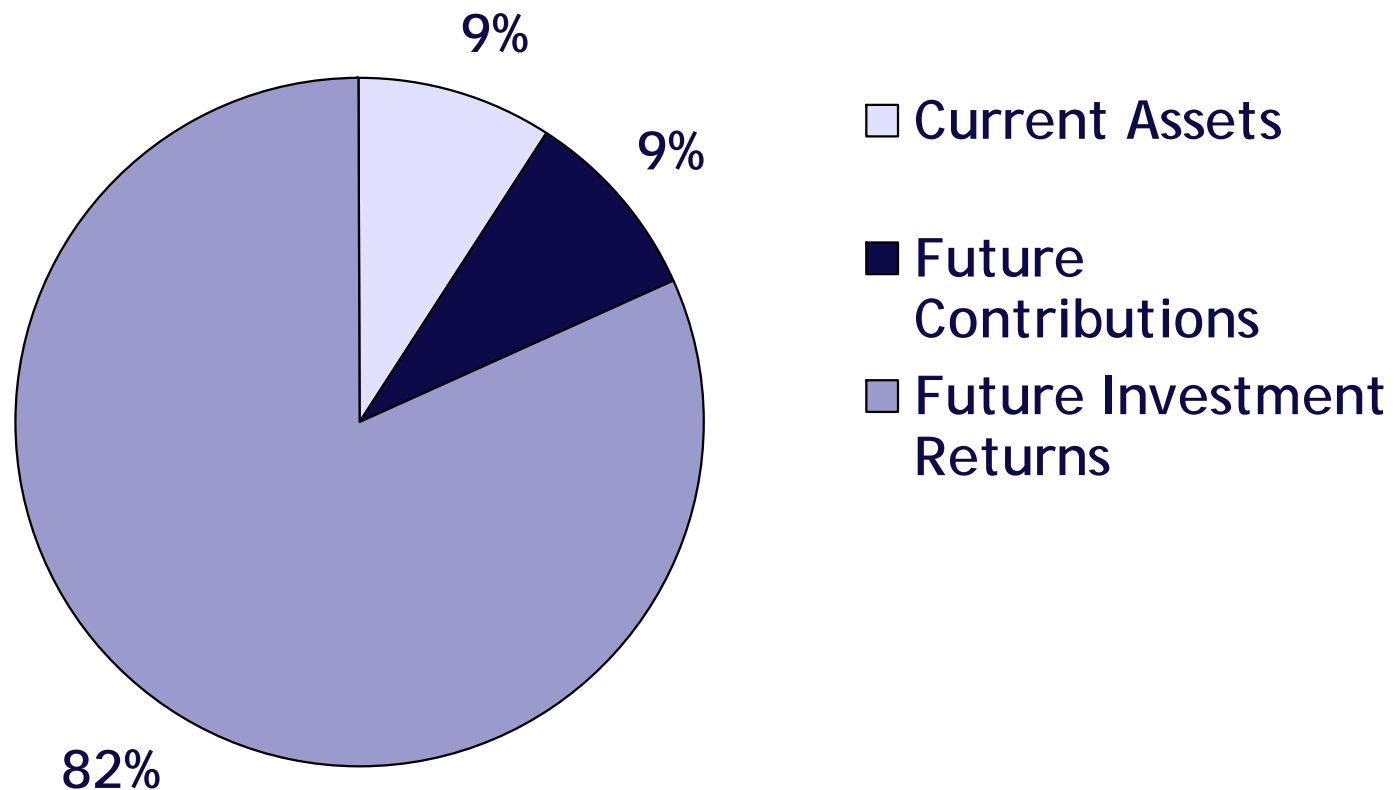
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- Current assets
  - Past contributions
  - Past investment returns
- Future contributions
- Future investment returns



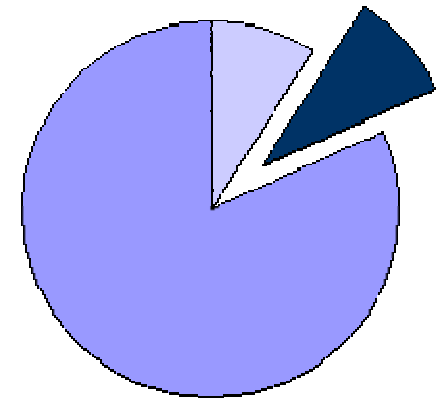
## *LEOFF 2 Future Benefits Under Current Plan Provisions*

### Total Future Benefits to be Paid by Funding Source



# *The Future Contributions Slice Of The Pie*

- Employer Contributions
- State Contributions
- Member Contributions



## *Preliminary Employer Contribution Rates Using 4.50% General Salary Increase Assumption*

Employer*	2009-2011 Projected	2009-2011 Updated
Rate Before Minimum	4.51%	3.72%
Long-Term Expected Rate (EANC)	5.58%	5.18%
Minimum Rate (90% of EANC)	5.02%	4.66%
Rate Under Current Funding Policy	5.02%	4.66%

*\*Excludes current administrative expense rate of 0.16%*

State	2009-2011 Projected	2009-2011 Updated
Rate Before Minimum	3.01%	2.48%
Long-Term Expected Rate (EANC)	3.71%	3.45%
Minimum Rate (90% of EANC)	3.34%	3.11%
Rate Under Current Funding Policy	3.34%	3.11%



## *Preliminary Budget Impacts Using 4.50% Salary Assumption*

- Difference between 2009-11 Projected and Updated

Net Change in Budget		
(\$ in Millions)	2009-2011	2011-2013
General Fund	\$-7.2	\$-8.3
Local Employer	\$-11.2	\$-12.9



## Preliminary Employer Contribution Rates Using 4.25% Salary Assumption

Employer*	2009-2011 Projected	2009-2011 Updated
Rate Before Minimum	4.51%	3.46%
Long-Term Expected Rate (EANC)	5.58%	5.03%
Minimum Rate (90% of EANC)	5.02%	4.52%
Rate Under Current Funding Policy	5.02%	4.52%

*\*Excludes current administrative expense rate of 0.16%*

State	2009-2011 Projected	2009-2011 Updated
Rate Before Minimum	3.01%	2.30%
Long-Term Expected Rate (EANC)	3.71%	3.35%
Minimum Rate (90% of EANC)	3.34%	3.02%
Rate Under Current Funding Policy	3.34%	3.02%



## *Preliminary Budget Impacts Using 4.25% Salary Assumption*

- Difference between 2009-11 Projected and Updated

Net Change in Budget		
(\$ in Millions)	2009-2011	2011-2013
General Fund	\$-9.9	\$-11.4
Local Employer	\$-15.5	\$-17.7



## *Preliminary Plan 2 Member Contribution Rates Using 4.50% Salary Assumption*

Member	2009-2011 Projected	2009-2011 Updated
Rate Before Minimum	7.52%	6.20%
Long-Term Expected Rate (EANC)	9.29%	8.63%
Minimum Rate (90% of EANC)	8.36%	7.77%
Rate Under Current Funding Policy	8.36%	7.77%





## *Preliminary Plan 2 Member Contribution Rates Using 4.25% Salary Assumption*

Member	2009-2011 Projected	2009-2011 Updated
Rate Before Minimum	7.52%	5.76%
Long-Term Expected Rate (EANC)	9.29%	8.38%
Minimum Rate (90% of EANC)	8.36%	7.54%
Rate Under Current Funding Policy	8.36%	7.54%



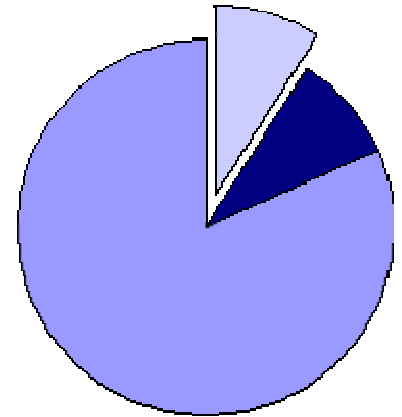
# *Why The Contribution Rates Are Preliminary*

- Valuation changes still expected from auditor
  - Changes are standard practice in an actuarial audit
- Experience study assumptions not quite finalized
- You haven't adopted them
- Legislature can make changes in 2009 Session



# *The Current Assets Slice Of The Pie*

- Market Value of Assets (MVA)
  - Past contributions
  - Past investment returns
- Actuarial Value of Assets (AVA)
  - Starts with MVA
  - Smooths investment gains and losses
  - Corridor limits smoothing to at most of 30% of the MVA
    - Ensures reasonable relationship between AVA and MVA



# Assets

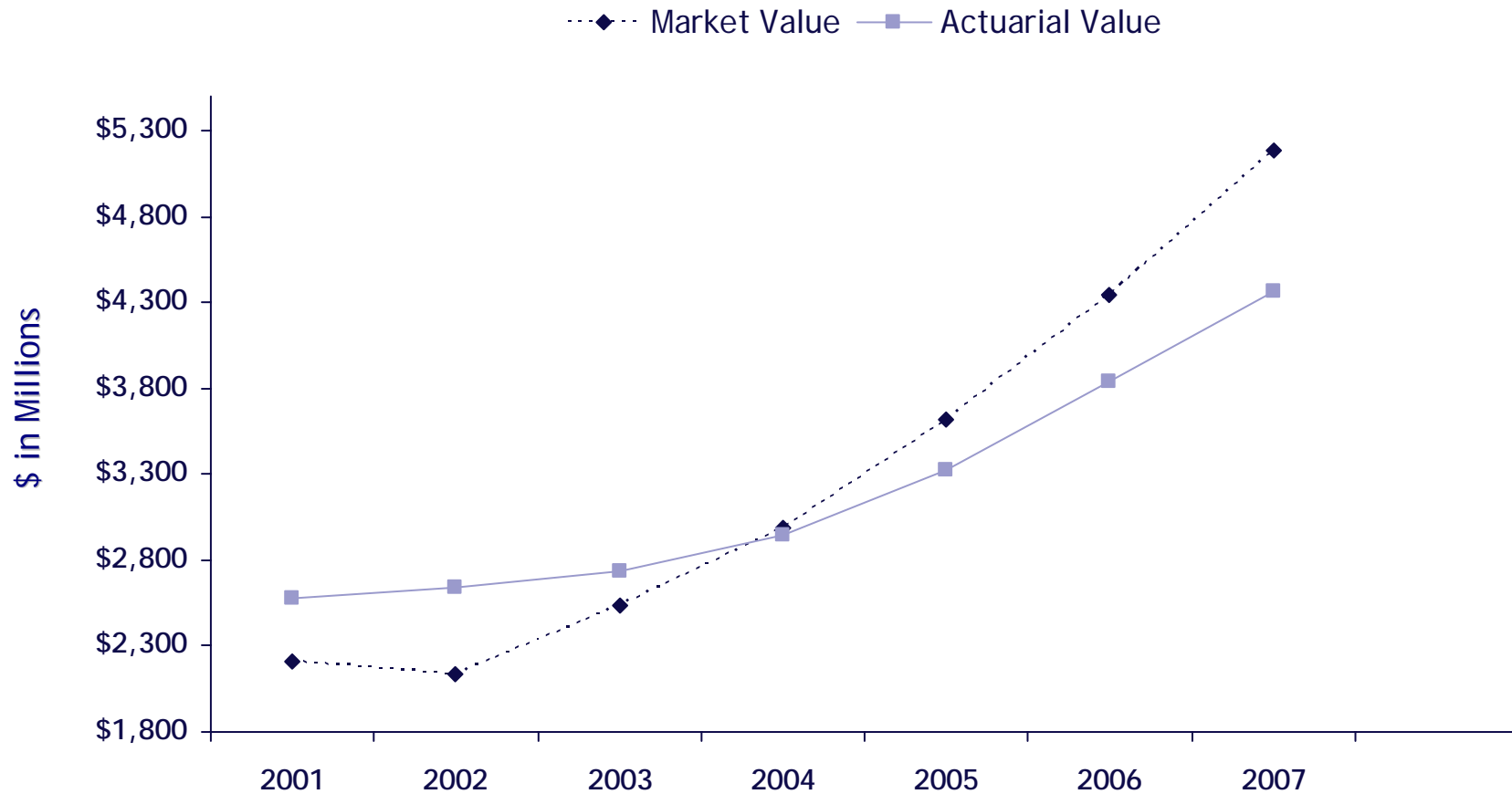
LEOFF 2	9/30/2006 (\$ in millions)	6/30/2007 (\$ in millions)
Actuarial value (AV)	\$3,844	\$4,360
Market value (MV)	\$4,339	\$5,185
Ratio (AV ÷ MV)	89%	84%
Contributions less Disbursements*	\$147	\$124
Investment return	\$577	\$723
Return on assets**	15.76%	16.53%

\* Includes transfers, restorations, payables

\*\* Time-weighted return on market value of assets



# Smoothing Reduces Volatility

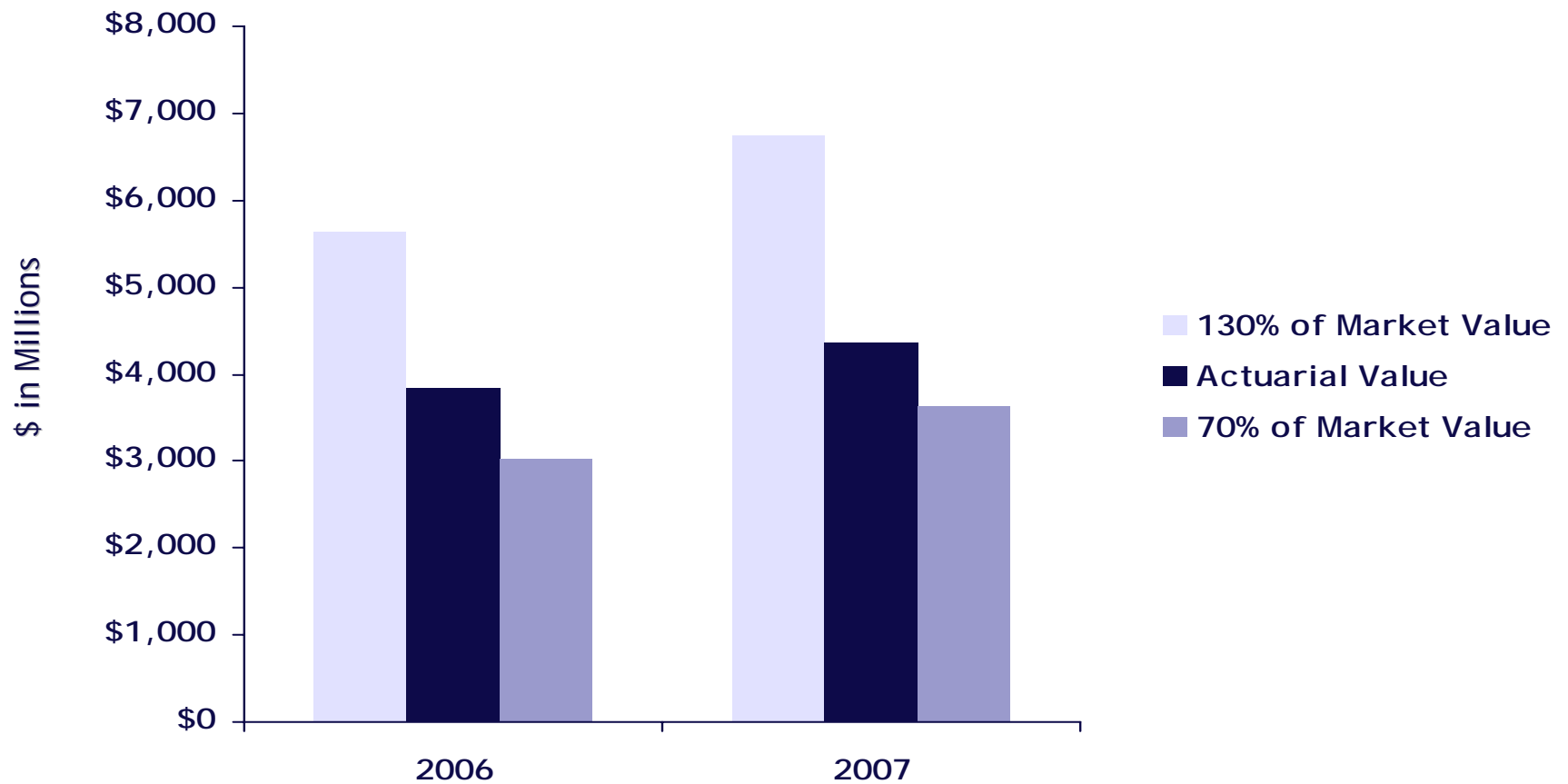


# Calculation Of Actuarial Value Of Assets

<b>A. Market Value at 6/30/07</b>		<b>\$5,185</b>
<b>Deferred Investment (Gains and Losses)</b>		
<b>Plan Year Ending</b>	<b>% Deferred</b>	
6/30/07	87.5%	\$406
9/30/06	75.0%	\$213
9/30/05	62.5%	\$180
9/30/04	33.3%	\$48
9/30/03	37.5%	\$58
9/30/02	25.0%	<u>(\$80)</u>
<b>B. Total Deferred</b>		<b>\$825</b>
<b>C. Market Value Less Deferral (A-B)</b>		<b>\$4,360</b>
70% of Market Value of Assets		\$3,630
130% of Market Value of Assets		\$6,741
<b>Actuarial Value of Assets</b>		<b>\$4,360</b>

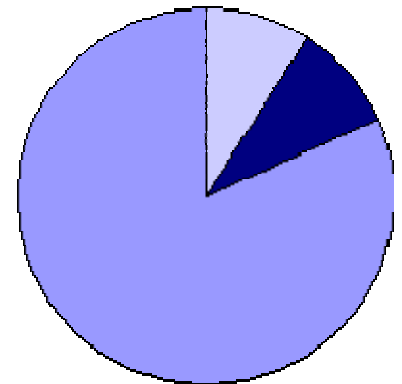


# Corridor Limits Smoothing



# *The Whole Pie Represents The Benefits To Be Paid*

- The Actuarial Liabilities are benefits in today's dollars
- Liability Measures
  - The current value of all future pensions
  - The current value of earned pensions not covered by current assets
  - The current value of all earned pensions
- Liability measures reported and used for different purposes





# Actuarial Liabilities

LEOFF 2	9/30/2006 (\$ in millions)	6/30/2007 (\$ in millions)
Current Value of all Future Pensions	\$6,004	\$6,264
Earned Pensions Not Covered by Current Assets*	NA	NA
Current Value of all Earned Pensions	\$3,323	\$3,445
Valuation interest rate	8.00%	8.00%



# *Funded Status Brings Liabilities And Assets Together*

- Funded Status
  - \$ in Assets for every \$ in earned liabilities



## *Funded Status*

LEOFF 2	9/30/2006 (\$ in millions)	6/30/2007 (\$ in millions)
Actuarial value of assets	\$3,844	\$4,360
Current Value of all Earned Pensions	\$3,323	\$3,445
Unfunded Value of all Earned Pensions	(\$521)	(\$915)
Funded ratio*	116%	127%



## *Historical Funded Status (Actuarial Basis)*



## *Participant Data*

LEOFF 2	9/30/2006	6/30/2007
Number of actives	15,718	16,099
Average annual salary	\$74,562	\$76,632
Average attained age	40.8	41.0
Average service	11.9	12.1
Number of annuitants	779	924



## *Key Economic Assumptions*

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Valuation interest rate	8.00%
Salary increase (general)	4.50%
Inflation	3.50%
Growth in membership	1.25%



## *Next Steps*

- Receive audit report for July
- Adopt final experience study assumptions and contribution rates by July 31
  - Rates effective 7/1/2009
- Updated projections will be available later this Fall



# Questions?

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STATE OF WASHINGTON

**LAW ENFORCEMENT OFFICERS' AND FIRE FIGHTERS'  
PLAN 2 RETIREMENT BOARD**

*P.O. Box 40918 • Olympia, Washington 98504-0918 • (360) 586-2320 • FAX (360) 586-2329*

May 29, 2008

The Honorable Christine Gregoire  
Washington State Governor  
Mail Stop 40002  
Olympia, WA 98504 - 0002

Dear Governor Gregoire:

Initiative 790 created the Law Enforcement Officers' and Fire Fighters' (LEOFF) Plan 2 Retirement Board, and requires the Board to submit an annual actuarial funding status report to the Governor and the Legislature.

The Department of Retirement Systems (DRS) produces a *Comprehensive Annual Financial Report* that includes the funding status of each retirement fund, including LEOFF Plan 2. The current DRS report uses the final audited market value of LEOFF Plan 2 assets as of the end of the 2007 fiscal year. The solvency test for LEOFF Plan 2 that was published in the current DRS report indicates that LEOFF Plan 2 is fully funded. A copy of the solvency test is copied below.

<b>Solvency Test: LEOFF Plan 2</b>								
(dollars in millions)								
<b>Accrued Liabilities (Aggregate Cost Method)</b>					<b>Portion of Accrued Liabilities Covered by Assets</b>			
<b>Valuation Date</b>	<b>(1) Active Member Contributions</b>	<b>(2) Inactive Members Liabilities</b>	<b>(3) Excess Accrued Liability</b>	<b>(1+2+3) Total Accrued Liability</b>	<b>Valuation Assets</b>	<b>(1) Active Members Contributions</b>	<b>(2) Inactive Members Liability</b>	<b>(3) Excess Accrued Liability</b>
9/30/06	\$1,087.8	\$355.6	\$2,400.3	\$3,843.8	\$3,843.8	100%	100%	100%
9/30/05	980.4	264.7	2,084.0	3,329.1	3,329.1	100%	100%	100%
9/30/04	896.4	192.7	1,858.2	2,947.3	2,947.3	100%	100%	100%
9/30/03	820.0	137.2	1,783.2	2,740.4	2,740.4	100%	100%	100%
12/31/02	750.8	99.9	1,795.3	2,646.0	2,646.0	100%	100%	100%
12/31/01	686.8	72.1	1,816.7	2,575.6	2,575.6	100%	100%	100%

Source: Washington State Office of the State Actuary

I have enclosed a copy of the *2006 LEOFF Plan 2 Actuarial Valuation Report* prepared by the Office of the State Actuary (OSA), which also analyzed the funding ratio of LEOFF Plan 2. The OSA valuation uses the Credited Projected Liability actuarial reporting method as required by the Government Accounting Standards Board. The OSA report found that LEOFF Plan 2 had a credited projected liability of \$3,323 million and assets of \$3,844 million for a funding ratio of 116%. This ratio compares favorably to similar funds in the United States.

I hope that you find this report useful. Please feel free to contact me at (360) 586-2320 or at [steve.nelsen@leoff.wa.gov](mailto:steve.nelsen@leoff.wa.gov), if you have any questions or would like additional information.

Sincerely,

Steve Nelsen  
Executive Director

Enclosure

cc: The Honorable Helen Sommers  
House Appropriations Committee Chair  
Mail Stop 40600

The Honorable Margarita Prentice  
Senate Ways and Means Committee Chair  
Mail Stop 40418

Victor Moore, Director  
Office of Financial Management  
Mail Stop 43113

WASHINGTON STATE

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



## 2007 Actuarial Valuation Report



Report prepared by:

**Office of the State Actuary**

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State Actuary

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**LEOFF Plan 2 Retirement Board**

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Jeralyn Faulhaber  
Shawn Merchant  
Tim Valencia

A special thank you to Charles Middleton for the use of his "Fire Fighter Saving Girl" photo.

**Additional assistance provided by**

Department of Retirement Systems  
Office of the State Treasurer  
Washington State Investment Board

To obtain a copy of this report in alternative format call 360.786.6140 or for TDD 800.635.9993





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## Office of the State Actuary

*"Securing tomorrow's pensions today."*

**Letter of Introduction  
Law Enforcement Officers' and Fire Fighters'  
Retirement System Plan 2  
Actuarial Valuation Report  
As of June 30, 2007  
September 2008**

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 plan year ending June 30, 2007. The report is organized in the following 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 remaining sections of the report provide detailed actuarial asset and liability information and participant data. The Appendices provide a summary of the principal actuarial assumptions and methods, summary of the major plan provisions, age-service distributions, and additional information to support the analysis of this valuation.

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

Sincerely,

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

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# Summary of Key Results

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# Summary of Key Results

## Intended Use

The purpose of this report is to develop the contribution rates required to fund the Law Enforcement Officers' and Fire Fighters' Plan 2 (LEOFF 2) retirement system based on the funding policy 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

We determined the member and employer contribution rates as a percentage of salary. The summary table below shows contribution rates along with comparable rates from the previous valuation. See the Actuarial Exhibits section of this report to see how we developed these rates.

Contribution Rates		
	2007	2006
Member	7.60%	7.77%
Employer*	4.56%	4.66%
Total State	3.04%	3.11%

*\*Excludes administrative expense rate.*

The minimum contribution rates adopted by the LEOFF 2 Board (the Board) in 2006 take effect in the 2009-11 biennium. The minimum contribution rate equals 90 percent of the normal cost calculated under the Entry Age Normal actuarial cost method.

## Contribution Rate-Setting Cycle

Under current Washington State law, in July of even-numbered years, the Board reviews the basic contribution rates recommended by the Board-retained actuary. These recommendations are based on an actuarial valuation performed on asset, participant, and plan information from odd-numbered years. The Board adopts contribution rates for LEOFF Plan 2 as provided under RCW 41.26.720(1)(a). The 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 by the Board. 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 Chapter 41.45 RCW - Actuarial Funding of State Retirement Systems. It includes the following goals - to:

- Provide a dependable and systematic process for funding the benefits to members and retirees of the Washington State Retirement Systems.
- Continue to fully fund the LEOFF Plan 2 as provided by law.
- Establish long-term employer contribution rates that will remain a relatively predictable proportion of the 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 Washington State Investment Board (WSIB) directs the investment of retirement system contributions. RCW 43.33A.110 requires the investment board to maximize the expected investment return on invested contributions while taking a prudent level of risk.

## **Comments on 2007 Results**

Short-term actuarial gains or losses occur when actual economic and demographic experience differs from our long-term assumptions. Actuarial gains will reduce contribution rates; actuarial losses will increase contribution rates. Under a reasonable set of actuarial assumptions and methods, actuarial gains and losses will offset over long-term experience periods.

Significant changes in plan provisions or actuarial assumptions and methods will impact contribution rates. Significant factors that impacted the results of this valuation include the following:

- The actual rate of investment return for the plan year exceeded the assumed rate of 8 percent. The actual, annualized investment return on the market value of assets was 22.71 percent (time-weighted). The actual rate of investment return on the actuarial value of assets for the plan year also exceeded the assumed rate of 8 percent for LEOFF 2.
- OSA performed the 2001-2006 Experience Study (as required under RCW 41.45.090). The demographic assumptions used in this valuation reflect the results of that experience study.
- OSA recognized future improvements in mortality at 50 percent of Scale AA (published by the Society of Actuaries) beginning with this valuation.
- Actual salary growth was below assumed growth for the period.

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**Summary of Key Results**


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See the Actuarial Gains/Losses table in the Actuarial Exhibits section of this report for detailed gain and loss information.

## Actuarial Liabilities

The table below summarizes key measures of actuarial liability along with the liabilities from last year's valuation. See the Actuarial Exhibits section of this report for additional information on the plan's actuarial liabilities. See the Glossary for a brief explanation of the actuarial terms.

<b>Actuarial Liabilities</b>		
<i>(Dollars in millions)</i>	<b>2007</b>	<b>2006</b>
Present Value of Fully Projected Benefits	\$6,149	\$6,004
Unfunded Actuarial Accrued Liability	N/A	N/A
Projected Unit Credit Liability	3,386	3,323
Valuation Interest Rate	8.00%	8.00%

## Assets

The following table shows the market value of assets and actuarial (or smoothed) value of assets along with approximate rates of investment return. See the Actuarial Exhibits section of this report for additional information on the plan's assets as well as the development of the actuarial value of assets.

<b>Assets</b>		
<i>(Dollars in millions)</i>	<b>2007</b>	<b>2006</b>
Market Value of Assets	\$5,185	\$4,339
Actuarial Value of Assets	4,360	3,844
Contributions*	145	168
Disbursements	23	23
Investment Return	723	577
Other**	2	2
Rate of Return on Assets***	16.53%	15.76%

\*Employee and Employer.

\*\*Includes transfers, restorations, payables, etc.

\*\*\*This is the time-weighted rate of return on the Market Value of Assets. WSIB restated returns for 1993-2005. We use the Actuarial Value of Assets to determine contribution rates.

## Summary of Key Results

### Funded Status

The next table displays the plan's funded status. We used the Projected Unit Credit (PUC) actuarial cost method to report the plan's funded status. This is consistent with governmental accounting standards. The PUC cost method projects future benefits under the plan, using salary growth and other assumptions, and applies the service that has been earned as of the valuation date to determine accrued (earned) liabilities. Comparing the PUC liabilities to the actuarial value of assets provides an appropriate measure of a plan's funded status.

We did not use the PUC cost method to determine contribution requirements for LEOFF Plan 2. See the Glossary for a further explanation of PUC.

Funded Status		
<i>(Dollars in millions)</i>	2007	2006
a. Projected Unit Credit Liability	\$3,386	\$3,323
b. Actuarial Value of Assets	4,360	3,844
c. Unfunded Liability (a-b)	(974)	(521)
d. Projected Unit Credit Funded Ratio (b/a)	129%	116%
<i>Totals may not agree due to rounding.</i>		

### Participant Data

The table below shows a summary of the participant data used in the actuarial valuation for the plan year ending June 30, 2007, along with comparable information from last year's valuation. See the Participant Data section of this report for additional information.

Participant Data		
	2007	2006
<b>Active Members</b>		
Number	16,099	15,718
Total Salaries (in millions)	\$1,234	\$1,172
Average Annual Salary	\$76,632	\$74,562
Average Attained Age	41.0	40.8
Average Service	12.1	11.9
<b>Retirees and Beneficiaries</b>		
Number	924	779
Average Annual Benefit	\$23,389	\$22,321
<b>Terminated Members</b>		
Number Vested	629	597
Number "Non-Vested"	1,433	1,362



## Key Assumptions

The following table displays key economic assumptions used in the actuarial valuation. These assumptions remain unchanged from the previous year's valuation. The LEOFF 2 Board adopted changes to the demographic assumptions effective with this valuation. The Experience Study Report, available on OSA's website, discloses all the assumption changes from the last valuation. See the Actuarial Assumptions and Methods in the Appendix for a detailed listing of assumptions used in this valuation.

Key Assumptions	
Valuation Interest Rate	8.00%
Salary Increase	4.50%
Inflation	3.50%
Growth in Membership	1.25%



# Actuarial Exhibits

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## Office of the State Actuary

*"Securing tomorrow's pensions today."*

**Actuarial Certification Letter  
Law Enforcement Officers' and Fire Fighters'  
Retirement System Plan 2  
Actuarial Valuation Report  
As of June 30, 2007  
September 2008**

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 valuation date June 30, 2007. This report should not be used for other purposes.

The valuation results summarized in this report involve calculations that require assumptions about future economic and demographic events. I 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.

The assumptions used in the valuation for investment return, inflation, salary growth, and membership growth were prescribed by the Legislature. The LEOFF 2 Board adopted updates to the demographic assumptions as part of their review of the 2001 – 2006 Experience Study results. The changes to the demographic assumptions include recognition of future improvements in assumed mortality, based on 50 percent of Scale AA. The Legislature was responsible for the selection of the actuarial cost and asset valuation methods. In my 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 provided member and beneficiary data to us. We checked the data for reasonableness as appropriate based on the purpose of the valuation. The Washington State Investment Board (WSIB), Department of Retirement Systems, and the State Treasurer provided financial and asset information. An audit of the financial and participant data was not performed. I relied on all the information provided as complete and accurate. In my 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

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policy of WSIB. The combination of the current asset smoothing method with any other funding method or asset allocation policy may not be appropriate.

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

Sincerely,

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

## Contribution Rates

### Member and Employer Rate Summary

	2007	2006
Member	7.60%	7.77%
Employer*	4.56%	4.66%
State (Normal Cost)	3.04%	3.11%
State (Plan 1 UAAL)	0.00%	0.00%
Total State	3.04%	3.11%

\*Excludes administrative expense rate.

### Development of Employer/State Rates

a.	Total Normal Cost	15.20%
b.	Employee Normal Cost	7.60%
c.	Total Employer/State Normal Cost (a-b)	7.60%
d.	State Normal Cost (20% of a)	3.04%
e.	Employer Normal Cost (b-d)	4.56%
f.	Cost to Amortize UAAL	0.00%
g.	Total Employer Contribution Rate (e+f)	4.56%

The state pays 20% of the total normal cost for  
LEOFF 2.

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**Development of Normal Cost Rates**


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*(Dollars in millions)***1. Calculation of Member Rate**

a.	Present Value of Fully Projected Benefits	\$6,149
b.	Valuation Assets	4,360
c.	Unfunded Fully Projected Benefits (a - b)	1,789

Present Value of Projected Salaries to Current Members (PVS)

d.	Plan 1 PVS	N/A
e.	Plan 2 PVS	15,405
f.	Weighted PVS (d + 2e)	\$30,811

g.	Member Normal Cost (c/f)	5.81%
h.	Member Minimum Contribution Rate	7.60%
i.	Member Contribution Rate with Minimum	7.60%
j.	Change In Plan Provisions (Laws of 2008)	0.00%
k.	Member Contribution Rate (i + j)	7.60%

**2. Calculation of Employer Rate**

a.	Present Value of Fully Projected Benefits	\$6,149
b.	Valuation Assets	4,360
c.	Unfunded Benefits (a - b)	1,789
d.	Present Value of Member Contributions	895
e.	Employer Responsibility (c - d)	\$895

f.	Plan 2 PVS	\$15,405
g.	Employer Normal Cost (e/f)	5.81%
h.	Employer Minimum Contribution Rate	7.60%
i.	Employer Contribution Rate with Minimum	7.60%
j.	Change In Plan Provisions (Laws of 2008)	0.00%
k.	Total Employer Contribution Rate (i + j)	7.60%

l.	Employee Contribution Rate*	7.60%
m.	Employer Contribution Rate (l - n)*	4.56%
n.	State Contribution Rate (k * 40%)*	3.04%
o.	Total Contribution Rate (l + m + n)	15.20%

*Note: Totals may not agree due to rounding. Minimum Contribution Rates went into effect for the 2007 Actuarial Valuation.*

*\*LEOFF 2 total rate: 50% Employee, 30% Employer, 20% State.*



<b>Amortization of the Plan 1 Unfunded Actuarial Accrued Liability (UAAL)</b>	
<i>(Dollars in millions)</i>	<b>LEOFF 1</b>
a. Present Value of Fully Projected Benefits	\$4,358
b. Valuation Assets	5,298
c. Present Value of Future Normal Costs	0
d. UAAL (a - b - c)	(939)
e. Expected UAAL Contributions to 2009	0
f. Remaining UAAL (d - e)	(\$939)
g. Amortization Date	6/30/2024
h. Present Value of Projected Salaries beyond 2009	\$16,131
i. Preliminary Rate (f/h)*	(5.82%)
j. Change In Plan Provisions (Laws of 2008)	0.00%
k. Contribution Rate to Amortize the UAAL (i+j)*	(5.82%)

*Note: Totals may not agree due to rounding. Minimum Contribution Rates went into effect for the 2007 Actuarial Valuation.*

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

**Actuarial Exhibits****Actuarial Liabilities**

<b>Present Value of Fully Projected Benefits</b>	
<i>(Dollars in millions)</i>	
<b>Active Members</b>	
Retirement	\$5,331
Termination	52
Death	44
Disability	140
Return of Contributions on Termination	66
Return of Contributions on Death	64
<b>Total Active</b>	<b>\$5,697</b>
<b>Inactive Members</b>	
Terminated	\$123
Service Retired	283
Disability Retired	28
Survivors	17
<b>Total Inactive</b>	<b>\$452</b>
<b>Laws of 2008</b>	<b>0</b>
<b>2007 Total</b>	<b>\$6,149</b>
<b>2006 Total</b>	<b>\$6,004</b>

*Note: Totals may not agree due to rounding.*

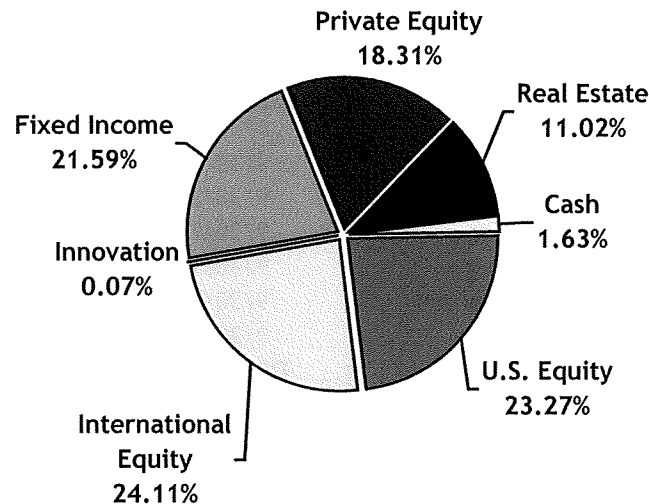
<b>Present Value of Projected Unit Credit (PUC) Benefits*</b>	
<i>(Dollars in millions)</i>	
<b>Active Members</b>	
Retirement	\$2,734
Termination	29
Death	29
Disability	76
Return of Contributions on Termination	34
Return of Contributions on Death	32
<b>Total Active</b>	<b>\$2,934</b>
<b>Inactive Members</b>	
Terminated	\$123
Service Retired	283
Disability Retired	28
Survivors	17
<b>Total Inactive</b>	<b>\$452</b>
<b>Laws of 2008</b>	<b>0</b>
<b>2007 Total</b>	<b>\$3,386</b>
<b>2006 Total</b>	<b>\$3,323</b>

*Note: Totals may not agree due to rounding.*

*\* Calculated using the PUC cost method. We did not use this method to determine contribution requirements.*

## Plan Assets

### Retirement Commingled Trust Fund (CTF) Asset Allocation



**Cash:** Highly liquid, very safe investments that can be easily converted into cash, such as Treasury Bills and money-market 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, such as infrastructure, commodities, and global equity.

**International Equity:** Shares of 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 which 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.

**U.S. Equity:** Shares of 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.

## Actuarial Exhibits

Change in Market Value of Assets		Calculation of Actuarial Value of Assets		
<i>(Dollars in millions)</i>		<i>(Dollars in millions)</i>		
<b>2006 Market Value</b>	<b>\$4,339</b>	a. Market Value at 6/30/2007		<b>\$5,185</b>
<b>Revenue</b>		<b>Deferred Investment Gains and (Losses)</b>		
Contributions		<b>Plan Year Ending</b>	<b>Percent Deferred</b>	
Employee	73	6/30/2007	87.50%	406
Employer/State	73	9/30/2006	75.00%	214
Total Contributions	145	9/30/2005	62.50%	180
Investment Return	723	9/30/2004	33.33%	48
Restorations	2	9/30/2003	37.50%	58
Transfers In	0	9/30/2002	25.00%	(80)
Miscellaneous	0	9/30/2001	N/A	0
<b>Total Revenue</b>	<b>\$869</b>	b. Total Deferral		<b>\$826</b>
<b>Disbursements</b>		c. Market Value less Deferral (a-b)		<b>\$4,360</b>
Withdrawn Annuities		d. 70% of Market Value of Assets		<b>\$3,630</b>
Monthly Benefits	16	e. 130% of Market Value of Assets		<b>\$6,741</b>
Refunds	6	f. <b>Actuarial Value of Assets*</b>		<b>\$4,360</b>
Total Benefits	23	<i>Note: Totals may not agree due to rounding.</i>		
Transfers Out	0	<i>*Actuarial Value of Assets can never be less than 70% or greater than 130% of the market value of assets.</i>		
Expenses	0			
<b>Total Disbursements</b>	<b>\$23</b>			
<b>Payables</b>	<b>\$0</b>			
<b>2007 Market Value</b>	<b>\$5,185</b>			
<b>2007 Actuarial Value</b>	<b>\$4,360</b>			
<b>Ratio (AV/MV)</b>	<b>84%</b>			

*Note: Totals may not agree due to rounding.*

### Investment Gains and (Losses) for Prior Year

*(Dollars in Millions)*

a. 2006 Market Value (at WSIB)	\$4,328
b. Total Cash Flow	123
c. 2007 Market Value (at WSIB)	5,173
d. Actual return (c-b-a)	\$722
e. Weighted asset amount	\$4,352
f. Expected return (8% x e)	259
g. Investment Gain/(Loss)	464
for Prior Year (d-f)	
h. Dollar-weighted rate of return*	16.61%

*Note: Totals may not agree due to rounding.*

*\*For the 2007 valuation the interest rates were not annualized. They reflect the actual valuation period of 9 months.*

## **Funded Status**

We report a plan's funded status by comparing the plan's current assets to the present value of earned pensions of its members. A plan's funded status can vary significantly, depending on the assumptions and methods used to determine the value of the plan's assets and liabilities. For this valuation report, we present two funded status measures.

The first measure compares the Actuarial Value of Assets (AVA) to the PUC liabilities calculated using a long-term interest assumption. The second measure compares the Market Value of Assets (MVA) to the PUC liabilities calculated using a short-term interest assumption. The next sections describe these measures in more detail and display the resulting funded status for the plan.

### ***Funded Status on an Actuarial Value Basis***

The funded status on an actuarial value basis is the ratio of the AVA to the PUC liability calculated using the 8 percent valuation interest rate assumption. We assume the plan is on-going and, therefore, we use the same long-term assumptions to develop the assets and liabilities as we used 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.

We use an asset valuation method to determine the AVA. This method smoothes the inherent volatility in the 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 of 8 percent. The AVA provides a more stable measure of the plan's assets on an on-going basis.

We use the PUC actuarial cost method to determine the present value of earned pensions. The PUC liabilities are actuarial liabilities based on members' earned service credit as of the valuation date. They include future assumed salary increases and reflect future service credits for determining benefit eligibility. The PUC liabilities are discounted to the valuation date using the valuation interest rate to determine the present value (today's value). The valuation interest rate is consistent with the long-term expected return on invested contributions.

The following table displays the funded status on an actuarial value basis for LEOFF 2.

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**Funded Status on an Actuarial Value Basis\***


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*(Dollars in millions)*

Projected Unit Credit Liability	\$3,386
Actuarial Value of Assets	\$4,360
Unfunded Liability	(\$974)

**Funded Ratio:**

<b>2007 **</b>	<b>129%</b>
2006 **	116%
2005 **	114%
2004	117%
2003	125%
2002	137%
2001 **	154%
2000 **	161%
1999	154%
1998	160%
1997 **	155%
1996	130%
1995	126%
1994 **	124%
1993	127%
1992	128%
1991	154%
1990	153%
1989 **	158%
1988	153%
1987	157%
1986	142%

*Note: Totals may not agree due to rounding.**\*Liabilities have been valued using an interest rate of 8%.**\*\*Assumptions changed.*

The present value of actuarial liabilities is sensitive to the interest rate assumption. The following tables show the sensitivity of the funded status to the interest rate assumption. We calculated liabilities using a 7 percent and 9 percent interest rate.

<b>Funded Status Using a 7% Interest Rate Assumption</b>	
<i>(Dollars in millions)</i>	
Projected Unit Credit Liability	\$4,077
Actuarial Value of Assets	\$4,360
Unfunded Liability	(\$283)
Funded Ratio:	
	<b>2007                      107%</b>
<i>Note: Totals may not agree due to rounding.</i>	

<b>Funded Status Using a 9% Interest Rate Assumption</b>	
<i>(Dollars in millions)</i>	
Projected Unit Credit Liability	\$2,824
Actuarial Value of Assets	\$4,360
Unfunded Liability	(\$1,535)
Funded Ratio:	
	<b>2007                      154%</b>
<i>Note: Totals may not agree due to rounding.</i>	

***Funded Status on a Market Value Basis***

The funded status on a market value basis is the ratio of the MVA to the PUC liability calculated using a 5.5 percent interest rate assumption. The funded status on a market value basis provides a measure of the plan's health if the plan is "settled" or "immunized" on the valuation date. Immunizing a pension plan means attaching assets to liabilities so the assets maturing each year match the expected pension payments due from the plan each year. A plan can be settled by purchasing annuities on the open market for each member, or immunized by investing the assets in bonds with payment streams that match the expected benefit payments.

Because LEOFF 2 is open and on-going, we only present the market value funded status for the closed LEOFF Plan 1. Although LEOFF 1 is closed to new members, it is not settled and has not been immunized. However, there is an opportunity to immunize the plan in the future. LEOFF 1 is considered an on-going plan because current annuitants continue to receive their benefits from the retirement trust fund, and current active members continue to accrue benefits under the plan. However, because the plan is closed to new members, the future benefit payments are more predictable, have a shorter duration, and would be easier to immunize. The decision to settle or immunize LEOFF 1 is complex and would require additional actuarial analysis and information that is outside the scope of this report.

The following table displays the market value funded status for LEOFF 1 as described above.

<b>Funded Status on a Market Value Basis* - LEOFF 1 Only</b>		
<i>(Dollars in millions)</i>		
Projected Unit Credit Liability		\$5,634
Market Value of Assets		\$6,416
Unfunded Liability		(\$783)
Funded Ratio:		
	<b>2007</b>	<b>114%</b>
	2006	102%
	2005	94%
	2004	82%

*Note: Totals may not agree due to rounding.*

*\*Liabilities have been valued using an interest rate of 5.5%.*

*The 5.5% interest rate approximates the "risk-free" rate of return on assets. We did not use this method to determine contribution requirements.*

Both funded status measures vary based on the measurement (valuation) date and the market conditions on that date. The market value measure, however, is more volatile because the asset value has no smoothing and the ability to immunize the plan depends on current bond and annuity purchase rates.



## Actuarial Gains/Losses

Change in State Contribution Rate by Source	
<b>2006 Contribution Rate</b>	<b>(1.40%)</b>
Economic Gains/Losses	(1.60%)
Demographic Gains/Losses	(0.06%)
Present Value Future Salaries Gains/Losses	(0.11%)
Experience Study Gains/Losses	0.04%
PEBB Premiums for Survivors	0.01%
Other Gains/Losses	(0.38%)
<b>Total Change</b>	<b>(2.10%)</b>
<b>2007 Preliminary Contribution Rate</b>	<b>(3.50%)</b>
Laws of 2008	0.00%
Increase from Applied Rate Floor	0.72%
<b>2007 Adjusted Contribution Rate</b>	<b>(2.78%)</b>
<i>The Contribution Rate is the State's portion for Plan 2 (20% of the Normal Cost) plus the UAAL rate for Plan 1.</i>	

Change in State Normal Cost Rate by Source	
<b>2006 Normal Cost</b>	<b>3.11%</b>
Economic Gains/Losses	(0.30%)
Assets	(0.22%)
Salaries	(0.08%)
Growth	0.00%
Demographic Gains/Losses	(0.03%)
Termination/Return to Work	(0.01%)
Retirement	(0.02%)
Present Value Future Salaries Gains/Losses	(0.12%)
Experience Study Change Gains/Losses	(0.13%)
PEBB Premiums for Survivors	0.01%
Total Other Gains/Losses	(0.22%)
Plan Change Gains/Losses	0.01%
Method Change Gains/Losses	(0.19%)
Assumption Change Gains/Losses	0.00%
Miscellaneous Change Gains/Losses	(0.04%)
<b>Total Change</b>	<b>(0.79%)</b>
<b>2007 Preliminary Normal Cost</b>	<b>2.32%</b>
Laws of 2008	0.00%
Increase from Applied Rate Floor	0.72%
<b>2007 Adjusted Normal Cost</b>	<b>3.04%</b>
<i>The Normal Cost Rate is the State's portion only (20% of the Plan 2 Normal Cost).</i>	

Change in State UAAL Rate by Source	
<b>2006 UAAL Rate</b>	<b>(4.51%)</b>
Economic Gains/Losses	(1.30%)
Assets	<b>(1.32%)</b>
Salaries	(0.03%)
Inflation (CPI)	0.05%
Demographic Gains/Losses	(0.03%)
Termination/Return to Work	0.00%
Retirement	(0.03%)
Present Value Future Salaries Gains/Losses	0.01%
Experience Study Change Gains/Losses	0.17%
Total Other Gains/Losses	(0.16%)
Plan Change Gains/Losses	0.00%
Method Change Gains/Losses	(0.00%)
Assumption Change Gains/Losses	0.00%
Miscellaneous Change Gains/Losses	(0.16%)
Total Change	(1.31%)
<b>2007 Preliminary UAAL Rate</b>	<b>(5.82%)</b>
Laws of 2008	0.00%
Increase from Applied Rate Floor	N/A
<b>2007 Adjusted UAAL Rate</b>	<b>(5.82%)</b>

*LEOFF 1 has a surplus of assets over liabilities, so no UAAL rate is currently payable.*

## Effect of Plan, Assumption, and Method Changes

In addition to experience gains or losses, significant changes in plan provisions or actuarial assumptions or methods will also impact contribution rates.

### **Plan Changes:**

- LEOFF 2 Alternate Revenue (Chapter 99, Laws of 2008).

### **Assumption Changes:**

- Projected improvements in mortality.
- Updated demographic assumptions as a result of the 2001-2006 Experience Study. For details of the analysis behind the changes see the experience study report.

### **Method Changes:**

- We removed competing decrements in our valuation software.
- We changed the method for calculating final average salaries.

### **Effect of Changes on the Current Valuation:**

The following table shows the effect of the above changes on the current actuarial valuation results.

Effect of Plan, Assumption, and Method Changes	
<b>Before Changes</b>	
Present Value Fully Projected Benefits	\$6,407
Present Value Projected Unit Credit Benefits	3,616
Actuarial Value of Assets	4,360
Unfunded Liability	(744)
<b>Employer Contribution Rate</b>	<b>4.26%</b>
<b>After Changes</b>	
Present Value Fully Projected Benefits	\$6,149
Present Value Projected Unit Credit Benefits	3,386
Actuarial Value of Assets	4,360
Unfunded Liability	(974)
<b>Employer Contribution Rate</b>	<b>4.56%</b>
<b>Increase/(Decrease) in Rate</b>	<b>0.30%</b>
<i>Before and after changes include actuarial gains and losses for the year ending 6/30/2007.</i>	
<i>After changes includes Minimum Contribution Rates that went into effect for the 2007 Actuarial Valuation.</i>	
<i>The LEOFF contribution rate is the Employer's portion only (30% of the Plan 2 Normal Cost).</i>	



# Participant Data

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# Participant Data

## Overview of System Membership

LEOFF 2 - Law Enforcement Officers' and Fire Fighters' Retirement System Plan 2 (Chapter 41.26 RCW).

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

Active Membership By Employer	
State Agencies	104
Higher Education	104
Community Colleges	0
K-12	0
Counties	2,845
County Sub Divisions	45
First Class Cities	4,818
Other Cities	4,990
Ports	179
Education Service District	0
Fire Districts	3,014
Public Utility District	0
Water Districts	0
Energy Northwest	0
Unions	0
<b>TOTAL</b>	<b>16,099</b>

The following table summarizes participant data changes from last year's valuation to the current year's valuation. The participant data is divided into two main categories:

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

## Participant Data

Reconciliation of Participant Data	
<b>2006 Actives</b>	<b>15,718</b>
Transfers	0
Hires/Rehires	815
New Retirees	(101)
Deaths	(7)
Terminations	(326)
<b>2007 Actives</b>	<b>16,099</b>
 <b>2006 Annuitants</b>	 <b>779</b>
New Retirees	142
Annuitant Deaths	(6)
New Survivors	11
Other	(2)
<b>2007 Annuitants</b>	<b>924</b>
 <b>Ratio of Actives to Annuitants</b>	 <b>17.42</b>

## Summary of Plan Participants

Summary of Plan Participants		
	2007	2006
<b>Active Members</b>		
Number	16,099	15,718
Total Salaries (millions)	\$1,234	\$1,172
Average Age	41.0	40.8
Average Service	12.1	11.9
Average Salary	\$76,632	\$74,562
<b>Terminated Members</b>		
Number Vested	629	597
Number "Non-Vested"	1,433	1,362
<b>Retirees</b>		
Number of Retirees (All)	924	779
Average Monthly Benefit, All Retirees	\$1,949	\$1,860
Number of New "Service Retirees"	124	165
Average Monthly Benefit, New "Service Retirees"	\$2,516	\$2,344



# Appendices

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# Appendices

## Actuarial Methods and Assumptions

### *Actuarial Cost Methods*

The Aggregate Cost Method is used to determine the normal cost for retirement, termination, and ancillary benefits. Under this method, the unfunded actuarial present value of fully projected benefits is amortized over the future payroll of the active group. The entire contribution is considered normal cost and no Unfunded Actuarial Accrued Liability (UAAL) exists.

The Projected Unit Credit (PUC) cost method is used to report the plan's funded status and is consistent with governmental accounting standards. The PUC cost method projects future benefits under the plan, using salary growth and other assumptions, and applies the service earned as of the valuation date to determine accrued liabilities. Comparing the PUC liabilities to the assets currently held in the trust provides an appropriate measure of a plan's funded status. See the Glossary for a further explanation of the PUC cost method.

### *Asset Valuation Method*

We calculate the actuarial value of assets using an adjusted market value method by starting with the market value of assets. For subsequent years the actuarial value of assets is determined by adjusting the market value of assets to reflect the difference between the actual investment return and the expected investment return during each of the last eight years or, if fewer, the completed years since adoption, at the following rates per year:

Annual Gain/Loss		
Rate of Return	Smoothing Period	Annual Recognition
15% and up	8 years	12.50%
14-15%	7 years	14.29%
13-14%	6 years	16.67%
12-13%	5 years	20.00%
11-12%	4 years	25.00%
10-11%	3 years	33.33%
9-10%	2 years	50.00%
7-9%	1 year	100.00%
6-7%	2 years	50.00%
5-6%	3 years	33.33%
4-5%	4 years	25.00%
3-4%	5 years	20.00%
2-3%	6 years	16.67%
1-2%	7 years	14.29%
1% and lower	8 years	12.50%

Additionally, the actuarial value of assets may not exceed 130 percent nor drop below 70 percent of the market value of assets.

### *Changes in Methods and Assumptions Since the Last Valuation*

We implemented two method changes since the last valuation. We removed competing decrements from our valuation software and changed how we calculate final average salaries.

We performed an experience study of the plan for the period 2001-2006. As a result of this study, we updated the demographic assumptions, including recognition of future improvements in mortality. For a full description of the assumption changes see the Experience Study Report.

### *Economic Assumptions*

Economic Assumptions	
Annual Growth in Membership	1.25%
Interest on Member Contributions <sup>1</sup>	5.50%
Return on Invested Assets <sup>2</sup>	8.00%
Inflation <sup>3</sup>	3.50%
General Salary Increases (includes inflation) <sup>4</sup>	4.50%
Annual COLA <sup>5</sup>	3.00%

<sup>1</sup>Annual rate, compounded quarterly.

<sup>2</sup>Annual rate, compounded annually.

<sup>3</sup>Based on the CPI: Urban Wage Earners & Clerical Workers, Seattle-Tacoma-Bremerton, WA - All Items.

<sup>4</sup>Excludes longevity, merit or step increases that usually apply to members in the early part of their careers.

<sup>5</sup>Based on the CPI (3% maximum).

**Demographic Assumptions**

RP-2000 Mortality Rates Combined Healthy Table			50% Scale AA		
Age	Male	Female	Age	Male	Female
20	0.000345	0.000191	20	0.009500	0.008000
21	0.000357	0.000192	21	0.009000	0.008500
22	0.000366	0.000194	22	0.008500	0.008500
23	0.000373	0.000197	23	0.007500	0.008000
24	0.000376	0.000201	24	0.006500	0.007500
25	0.000376	0.000207	25	0.005000	0.007000
26	0.000378	0.000214	26	0.003000	0.006000
27	0.000382	0.000223	27	0.002500	0.006000
28	0.000393	0.000235	28	0.002500	0.006000
29	0.000412	0.000248	29	0.002500	0.006000
30	0.000444	0.000264	30	0.002500	0.005000
31	0.000499	0.000307	31	0.002500	0.004000
32	0.000562	0.000350	32	0.002500	0.004000
33	0.000631	0.000394	33	0.002500	0.004500
34	0.000702	0.000435	34	0.002500	0.005000
35	0.000773	0.000475	35	0.002500	0.005500
36	0.000841	0.000514	36	0.002500	0.006000
37	0.000904	0.000554	37	0.002500	0.006500
38	0.000964	0.000598	38	0.003000	0.007000
39	0.001021	0.000648	39	0.003500	0.007500
40	0.001079	0.000706	40	0.004000	0.007500
41	0.001142	0.000774	41	0.004500	0.007500
42	0.001215	0.000852	42	0.005000	0.007500
43	0.001299	0.000937	43	0.005500	0.007500
44	0.001397	0.001029	44	0.006000	0.007500
45	0.001508	0.001124	45	0.006500	0.008000
46	0.001616	0.001223	46	0.007000	0.008500
47	0.001734	0.001326	47	0.007500	0.009000
48	0.001860	0.001434	48	0.008000	0.009000
49	0.001995	0.001550	49	0.008500	0.009000
50	0.002138	0.001676	50	0.009000	0.008500
51	0.002449	0.001852	51	0.009500	0.008000
52	0.002667	0.002018	52	0.010000	0.007000
53	0.002916	0.002207	53	0.010000	0.006000
54	0.003196	0.002424	54	0.010000	0.005000
55	0.003624	0.002717	55	0.009500	0.004000
56	0.004200	0.003090	56	0.009000	0.003000
57	0.004693	0.003478	57	0.008500	0.002500
58	0.005273	0.003923	58	0.008000	0.002500
59	0.005945	0.004441	59	0.008000	0.002500
60	0.006747	0.005055	60	0.008000	0.002500
61	0.007676	0.005814	61	0.007500	0.002500
62	0.008757	0.006657	62	0.007500	0.002500
63	0.010012	0.007648	63	0.007000	0.002500
64	0.011280	0.008619	64	0.007000	0.002500
65	0.012737	0.009706	65	0.007000	0.002500
66	0.014409	0.010954	66	0.006500	0.002500
67	0.016075	0.012163	67	0.006500	0.002500
68	0.017871	0.013445	68	0.007000	0.002500
69	0.019802	0.014860	69	0.007000	0.002500

RP-2000 Mortality Rates			50% Scale AA		
Combined Healthy Table					
Age	Male	Female	Age	Male	Female
70	0.022206	0.016742	70	0.007500	0.002500
71	0.024570	0.018579	71	0.007500	0.003000
72	0.027281	0.020665	72	0.007500	0.003000
73	0.030387	0.022970	73	0.007500	0.003500
74	0.033900	0.025458	74	0.007500	0.003500
75	0.037834	0.028106	75	0.007000	0.004000
76	0.042169	0.030966	76	0.007000	0.004000
77	0.046906	0.034105	77	0.006500	0.003500
78	0.052123	0.037595	78	0.006000	0.003500
79	0.057927	0.041506	79	0.005500	0.003500
80	0.064368	0.045879	80	0.005000	0.003500
81	0.072041	0.050780	81	0.004500	0.003500
82	0.080486	0.056294	82	0.004000	0.003500
83	0.089718	0.062506	83	0.004000	0.003500
84	0.099779	0.069517	84	0.003500	0.003500
85	0.110757	0.077446	85	0.003500	0.003000
86	0.122797	0.086376	86	0.003500	0.002500
87	0.136043	0.096337	87	0.003000	0.002000
88	0.150590	0.107303	88	0.002500	0.002000
89	0.166420	0.119154	89	0.002500	0.001500
90	0.183408	0.131682	90	0.002000	0.001500
91	0.199769	0.144604	91	0.002000	0.001500
92	0.216605	0.157618	92	0.001500	0.001500
93	0.233662	0.170433	93	0.001500	0.001000
94	0.250693	0.182799	94	0.001500	0.001000
95	0.267491	0.194509	95	0.001000	0.001000
96	0.283905	0.205379	96	0.001000	0.001000
97	0.299852	0.215240	97	0.001000	0.000500
98	0.315296	0.223947	98	0.000500	0.000500
99	0.330207	0.231387	99	0.000500	0.000500
100	0.344556	0.237467	100	0.000500	0.000500
101	0.358628	0.244834	101	0.000000	0.000000
102	0.371685	0.254498	102	0.000000	0.000000
103	0.383040	0.266044	103	0.000000	0.000000
104	0.392003	0.279055	104	0.000000	0.000000
105	0.397886	0.293116	105	0.000000	0.000000
106	0.400000	0.307811	106	0.000000	0.000000
107	0.400000	0.322725	107	0.000000	0.000000
108	0.400000	0.337441	108	0.000000	0.000000
109	0.400000	0.351544	109	0.000000	0.000000
110	0.400000	0.364617	110	0.000000	0.000000

Scale AA represents annual improvements in mortality rates.

Age Offsets	Projected Mortality						Projected Disabled Mortality					
	LEOFF			WSPRS			LEOFF			WSPRS		
	Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028		Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
20	-1	1	-1	1	-1	1	2	2	0	0	0	0
21	0.000288	0.000165	0.000249	0.000146	0.000264	0.000153	0.000306	0.000166	0.016316	0.005670	0.017277	0.005950
22	0.000290	0.000165	0.000253	0.000145	0.000267	0.000153	0.000316	0.000168	0.016598	0.005573	0.017523	0.005866
23	0.000303	0.000168	0.000267	0.000148	0.000281	0.000155	0.000322	0.000171	0.016885	0.005573	0.017772	0.005866
24	0.000316	0.000173	0.000282	0.000153	0.000296	0.000161	0.000328	0.000178	0.017474	0.005670	0.018281	0.005950
25	0.000329	0.000180	0.000298	0.000160	0.000310	0.000168	0.000337	0.000186	0.018082	0.005768	0.018804	0.006034
26	0.000340	0.000188	0.000316	0.000169	0.000325	0.000176	0.000350	0.000196	0.019034	0.005867	0.019615	0.006120
27	0.000353	0.000199	0.000337	0.000182	0.000344	0.000188	0.000372	0.000210	0.020379	0.006071	0.020750	0.006295
28	0.000360	0.000210	0.000347	0.000192	0.000352	0.000199	0.000393	0.000221	0.020730	0.006071	0.021043	0.006295
29	0.000364	0.000221	0.000351	0.000202	0.000356	0.000210	0.000423	0.000236	0.020730	0.006071	0.021043	0.006295
30	0.000375	0.000236	0.000361	0.000216	0.000366	0.000224	0.000476	0.000275	0.020730	0.006071	0.021043	0.006295
31	0.000393	0.000280	0.000378	0.000260	0.000384	0.000268	0.000536	0.000319	0.020730	0.006283	0.021043	0.006474
32	0.000423	0.000324	0.000408	0.000305	0.000414	0.000313	0.000602	0.000365	0.020730	0.006501	0.021043	0.006659
33	0.000476	0.000365	0.000458	0.000343	0.000465	0.000352	0.000669	0.000402	0.020730	0.006501	0.021043	0.006659
34	0.000536	0.000399	0.000516	0.000373	0.000524	0.000383	0.000737	0.000435	0.020730	0.006391	0.021043	0.006566
35	0.000602	0.000431	0.000580	0.000400	0.000588	0.000412	0.000802	0.000466	0.020730	0.006283	0.021043	0.006474
36	0.000669	0.000462	0.000645	0.000425	0.000654	0.000440	0.000862	0.000497	0.020730	0.006176	0.021043	0.006384
37	0.000737	0.000493	0.000710	0.000451	0.000721	0.000467	0.000918	0.000532	0.020730	0.006071	0.021043	0.006295
38	0.000802	0.000528	0.000772	0.000478	0.000784	0.000497	0.000971	0.000571	0.020730	0.005968	0.021043	0.006207
39	0.000855	0.000566	0.000817	0.000510	0.000832	0.000531	0.01016	0.000617	0.020379	0.005867	0.020750	0.006120
40	0.000903	0.000612	0.000857	0.000547	0.000875	0.000572	0.01065	0.000671	0.020035	0.005768	0.020460	0.006034
41	0.000948	0.000671	0.000892	0.000599	0.000914	0.000627	0.01123	0.000738	0.019696	0.005768	0.020175	0.006034
42	0.000992	0.000738	0.000927	0.000660	0.000952	0.000690	0.01189	0.000812	0.019362	0.005768	0.019893	0.006034
43	0.001040	0.000812	0.000965	0.000725	0.000994	0.000759	0.01266	0.000892	0.019034	0.005768	0.019615	0.006034
44	0.001096	0.000892	0.001009	0.000797	0.001043	0.000833	0.01354	0.000973	0.018712	0.005768	0.019341	0.006034
45	0.001160	0.000973	0.001060	0.000869	0.001099	0.000909	0.01437	0.001057	0.018394	0.005768	0.019071	0.006034

# Appendices

		Projected Mortality (Continued)						Projected Disabled Mortality (Continued)					
		LEOFF			WSPRS			LEOFF			WSPRS		
		Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028		Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028	
Age	Offsets	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
45	45	-1	1	-1	1	-1	1	2	2	0	0	0	0
45	45	0.001236	0.001048	0.001121	0.000929	0.001166	0.000975	0.001527	0.001135	0.018082	0.005670	0.018804	0.005950
46	46	0.001322	0.001126	0.001189	0.000990	0.001241	0.001043	0.001623	0.001217	0.018781	0.006122	0.019589	0.006444
47	47	0.001403	0.001208	0.001253	0.001055	0.001311	0.001113	0.001724	0.001305	0.019450	0.006588	0.020349	0.006955
48	48	0.001491	0.001305	0.001322	0.001140	0.001387	0.001203	0.001830	0.001414	0.020094	0.007188	0.021086	0.007589
49	49	0.001584	0.001414	0.001394	0.001234	0.001467	0.001303	0.002076	0.001564	0.020712	0.007820	0.021801	0.008256
50	50	0.001683	0.001577	0.001469	0.001388	0.001551	0.001460	0.002239	0.001724	0.021307	0.008629	0.022495	0.009083
51	51	0.001786	0.001738	0.001548	0.001540	0.001639	0.001616	0.002429	0.001906	0.021879	0.009495	0.023169	0.009964
52	52	0.002026	0.001937	0.001743	0.001743	0.001851	0.001818	0.002640	0.002134	0.022427	0.010597	0.023821	0.011053
53	53	0.002203	0.002169	0.001895	0.001981	0.002013	0.002054	0.002999	0.002438	0.023348	0.011788	0.024799	0.012222
54	54	0.002409	0.002478	0.002072	0.002298	0.002201	0.002368	0.003480	0.002826	0.024267	0.013069	0.025775	0.013468
55	55	0.002662	0.002872	0.002307	0.002704	0.002443	0.002770	0.003926	0.003238	0.025619	0.014436	0.027130	0.014788
56	56	0.003047	0.003290	0.002661	0.003145	0.002809	0.003202	0.004454	0.003711	0.027012	0.015889	0.028517	0.016178
57	57	0.003566	0.003741	0.003137	0.003603	0.003302	0.003657	0.005063	0.004235	0.028447	0.017132	0.029942	0.017391
58	58	0.004023	0.004235	0.003566	0.004079	0.003742	0.004140	0.005792	0.004820	0.029934	0.018102	0.031412	0.018376
59	59	0.004527	0.004820	0.004013	0.004643	0.004211	0.004713	0.006600	0.005544	0.030949	0.019074	0.032477	0.019362
60	60	0.005104	0.005544	0.004524	0.005340	0.004748	0.005420	0.007529	0.006348	0.031995	0.020057	0.033575	0.020361
61	61	0.005839	0.006348	0.005215	0.006114	0.005456	0.006206	0.008691	0.007293	0.033656	0.021065	0.035211	0.021384
62	62	0.006653	0.007293	0.005943	0.007024	0.006217	0.007130	0.009791	0.008219	0.034823	0.022115	0.036432	0.022450
63	63	0.007651	0.008219	0.006886	0.007916	0.007183	0.008036	0.011146	0.009255	0.036687	0.023229	0.038266	0.023581
64	64	0.008761	0.009255	0.007885	0.008914	0.008224	0.009049	0.012628	0.010445	0.038044	0.024430	0.039682	0.024800
65	65	0.009871	0.010445	0.008883	0.010060	0.009266	0.010213	0.014088	0.011598	0.039514	0.025739	0.041215	0.026129
66	66	0.011236	0.011598	0.010189	0.011171	0.010595	0.011340	0.015765	0.012821	0.041830	0.027180	0.043499	0.027591
67	67	0.012730	0.012821	0.011544	0.012348	0.012004	0.012535	0.017468	0.014170	0.043622	0.028769	0.045363	0.029205
68	68	0.014088	0.014170	0.012679	0.013648	0.013225	0.013854	0.019402	0.015964	0.044818	0.030523	0.046748	0.030984
69	69	0.015638	0.015964	0.014074	0.015376	0.014680	0.015609	0.021468	0.017689	0.046948	0.032452	0.048969	0.032943



Age Offsets	Projected Mortality (Continued)						Projected Disabled Mortality (Continued)						Age
	LEOFF				WSPRS		LEOFF				WSPRS		
	Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028		Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
70	-1	1	-1	1	-1	1	2	2	0	0	0	0	70
71	0.017189	0.017689	0.015353	0.017038	0.016063	0.017295	0.023645	0.019676	0.048450	0.034565	0.050689	0.035088	71
72	0.019246	0.019518	0.017191	0.018658	0.017986	0.018998	0.026337	0.021663	0.050972	0.036242	0.053327	0.036901	72
73	0.021295	0.021663	0.019021	0.020708	0.019900	0.021085	0.029382	0.024009	0.053731	0.038690	0.056214	0.039394	73
74	0.023645	0.023817	0.021120	0.022597	0.022096	0.023078	0.032841	0.026255	0.056741	0.040626	0.059362	0.041489	74
75	0.026337	0.026255	0.023525	0.024910	0.024612	0.025440	0.036604	0.028927	0.060008	0.043400	0.062780	0.044323	75
76	0.029620	0.028695	0.026657	0.027021	0.027805	0.027679	0.041107	0.031652	0.064631	0.045576	0.067414	0.046685	76
77	0.033107	0.031652	0.029796	0.029805	0.031079	0.030530	0.045748	0.034891	0.068478	0.048671	0.071426	0.049856	77
78	0.037199	0.035172	0.033732	0.033370	0.035078	0.034080	0.051331	0.038831	0.073824	0.052853	0.076770	0.053977	78
79	0.041775	0.038831	0.038169	0.036842	0.039572	0.037625	0.057587	0.042922	0.079573	0.056404	0.082499	0.057603	79
80	0.046867	0.042922	0.043146	0.040723	0.044597	0.041589	0.065070	0.047507	0.085714	0.060175	0.088597	0.061454	80
81	0.052585	0.047507	0.048777	0.045073	0.050266	0.046032	0.073395	0.052666	0.092234	0.064186	0.095050	0.065550	81
82	0.058993	0.052666	0.055134	0.049968	0.056646	0.051030	0.082474	0.058478	0.099118	0.068467	0.101836	0.069922	82
83	0.066658	0.058478	0.062769	0.055482	0.064296	0.056661	0.092602	0.065037	0.106350	0.073050	0.108939	0.074603	83
84	0.074584	0.065037	0.070232	0.061705	0.071942	0.063017	0.102790	0.072564	0.111993	0.077967	0.114719	0.079625	84
85	0.083810	0.072564	0.079516	0.068846	0.081206	0.070310	0.114883	0.081053	0.119761	0.083254	0.122307	0.085024	85
86	0.093349	0.081706	0.088566	0.078106	0.090449	0.079526	0.127467	0.091266	0.125690	0.090472	0.128362	0.092118	86
87	0.103619	0.092001	0.098310	0.088610	0.100400	0.089951	0.141310	0.102473	0.131700	0.098361	0.134500	0.099850	87
88	0.115809	0.103298	0.110706	0.100242	0.112719	0.101453	0.157422	0.114879	0.140160	0.106977	0.142710	0.108270	88
89	0.129529	0.114879	0.124756	0.111481	0.126644	0.112828	0.175153	0.126958	0.148954	0.114405	0.151208	0.115788	89
90	0.143596	0.127979	0.138304	0.125130	0.140397	0.126262	0.190777	0.140538	0.155426	0.124455	0.157778	0.125581	90
91	0.159968	0.140538	0.155235	0.137409	0.157111	0.138652	0.208834	0.153186	0.171339	0.133080	0.173410	0.134285	91
92	0.176563	0.153186	0.171339	0.149775	0.173410	0.151130	0.225279	0.165890	0.186624	0.142249	0.188879	0.143536	92
93	0.193860	0.165890	0.189544	0.162196	0.191259	0.163664	0.243644	0.177926	0.205827	0.151967	0.207689	0.153341	93
94	0.210514	0.179357	0.205827	0.176685	0.207689	0.177749	0.260360	0.190846	0.222036	0.164733	0.224044	0.165725	94
	0.227092	0.190846	0.222036	0.188004	0.224044	0.189136	0.276337	0.201512	0.238219	0.176685	0.240374	0.177749	

Age Offsets	Projected Mortality (Continued)						Projected Disabled Mortality (Continued)						
	LEOFF				WSPRS		LEOFF				WSPRS		
	Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028		Plan 1 - 2019		Plan 2 - 2034		Plan 1/2 - 2028		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
95	-1	1	-1	1	-1	1	2	2	0	0	0	0	95
96	0.245603	0.201512	0.241945	0.198510	0.243402	0.199705	0.294206	0.211504	0.258545	0.188004	0.260101	0.189136	96
97	0.262454	0.211504	0.258545	0.208354	0.260101	0.209608	0.309824	0.220060	0.274410	0.198510	0.276062	0.199705	97
98	0.278559	0.221829	0.274410	0.220171	0.276062	0.220833	0.324476	0.229199	0.289823	0.211611	0.291569	0.212247	98
99	0.296571	0.229199	0.294354	0.227486	0.295239	0.228169	0.341810	0.235574	0.309980	0.220171	0.310912	0.220833	99
100	0.312314	0.235574	0.309980	0.233814	0.310912	0.234516	0.355770	0.242883	0.324640	0.227486	0.325615	0.228169	100
101	0.329712	0.244834	0.329712	0.244834	0.329712	0.244834	0.371685	0.254498	0.344556	0.237467	0.344556	0.237467	101
102	0.344556	0.254498	0.344556	0.254498	0.344556	0.254498	0.383040	0.266044	0.358628	0.244834	0.358628	0.244834	102
103	0.358628	0.266044	0.358628	0.266044	0.358628	0.266044	0.392003	0.279055	0.371685	0.254498	0.371685	0.254498	103
104	0.371685	0.279055	0.371685	0.279055	0.371685	0.279055	0.397886	0.293116	0.383040	0.266044	0.383040	0.266044	104
105	0.383040	0.293116	0.383040	0.293116	0.383040	0.293116	0.400000	0.307811	0.392003	0.279055	0.392003	0.279055	105
106	0.392003	0.307811	0.392003	0.307811	0.392003	0.307811	0.400000	0.322725	0.397886	0.293116	0.397886	0.293116	106
107	0.397886	0.322725	0.397886	0.322725	0.397886	0.322725	0.400000	0.337441	0.400000	0.307811	0.400000	0.307811	107
108	0.400000	0.337441	0.400000	0.337441	0.400000	0.337441	0.400000	0.351544	0.400000	0.322725	0.400000	0.322725	108
109	0.400000	0.351544	0.400000	0.351544	0.400000	0.351544	0.400000	0.351544	0.400000	0.337441	0.400000	0.337441	109
110	0.400000	0.351544	0.400000	0.351544	0.400000	0.351544	0.400000	0.351544	0.400000	0.351544	0.400000	0.351544	110
	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	110

Improvements in mortality are projected to the year specified for each plan based on 50% of scale AA.

Service Retirement										Disablement				Ratio of Survivors Selecting Annuities*							
Age	LEOFF 1		LEOFF 2		WSPRS		LEOFF 1		LEOFF 2		WSPRS		LEOFF 1		LEOFF 2		WSPRS 1		WSPRS 2		
	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.0010	0.0010	0.0010	0.0003	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.0010	0.0010	0.0010	0.0003	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.0010	0.0010	0.0010	0.0003	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22	
23	0.00	0.00	0.00	0.00	0.00	0.00	0.0010	0.0010	0.0010	0.0003	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.0010	0.0010	0.0011	0.0003	0.0003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24	
25	0.00	0.00	0.00	0.00	0.00	0.00	0.0010	0.0010	0.0011	0.0004	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25	
26	0.00	0.00	0.00	0.00	0.00	0.00	0.0024	0.0011	0.0011	0.0004	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26	
27	0.00	0.00	0.00	0.00	0.00	0.00	0.0038	0.0011	0.0011	0.0004	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27	
28	0.00	0.00	0.00	0.00	0.00	0.00	0.0052	0.0012	0.0012	0.0004	0.0004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28	
29	0.00	0.00	0.00	0.00	0.00	0.00	0.0066	0.0012	0.0012	0.0005	0.0005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29	
30	0.00	0.00	0.00	0.00	0.00	0.00	0.0080	0.0012	0.0012	0.0005	0.0005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30	
31	0.00	0.00	0.00	0.00	0.00	0.00	0.0094	0.0013	0.0013	0.0005	0.0005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31	
32	0.00	0.00	0.00	0.00	0.00	0.00	0.0107	0.0014	0.0014	0.0006	0.0006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32	
33	0.00	0.00	0.00	0.00	0.00	0.00	0.0121	0.0015	0.0015	0.0006	0.0006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33	
34	0.00	0.00	0.00	0.00	0.00	0.00	0.0135	0.0016	0.0016	0.0006	0.0006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34	
35	0.00	0.00	0.00	0.00	0.00	0.00	0.0149	0.0017	0.0017	0.0007	0.0007	0.00	0.07	0.07	0.00	0.00	0.00	0.07	0.07	35	
36	0.00	0.00	0.00	0.00	0.00	0.00	0.0163	0.0018	0.0018	0.0007	0.0007	0.00	0.07	0.07	0.00	0.00	0.00	0.07	0.07	36	
37	0.00	0.00	0.00	0.00	0.00	0.00	0.0190	0.0019	0.0019	0.0008	0.0008	0.00	0.07	0.07	0.00	0.00	0.00	0.07	0.07	37	
38	0.00	0.00	0.00	0.00	0.00	0.00	0.0205	0.0020	0.0020	0.0008	0.0008	0.00	0.07	0.07	0.00	0.00	0.00	0.07	0.07	38	
39	0.00	0.00	0.00	0.00	0.00	0.00	0.0220	0.0021	0.0021	0.0009	0.0009	0.00	0.07	0.07	0.00	0.00	0.00	0.07	0.07	39	
40	0.00	0.00	0.00	0.00	0.00	0.00	0.0235	0.0023	0.0023	0.0009	0.0009	0.56	0.16	0.16	0.56	0.56	0.16	0.16	0.16	40	
41	0.00	0.00	0.00	0.00	0.00	0.00	0.0249	0.0024	0.0024	0.0010	0.0010	0.56	0.16	0.16	0.56	0.56	0.16	0.16	0.16	41	
42	0.00	0.00	0.00	0.00	0.00	0.00	0.0264	0.0025	0.0025	0.0011	0.0011	0.56	0.16	0.16	0.56	0.56	0.16	0.16	0.16	42	
43	0.00	0.00	0.00	0.00	0.00	0.00	0.0279	0.0027	0.0027	0.0011	0.0011	0.56	0.16	0.16	0.56	0.56	0.16	0.16	0.16	43	
44	0.00	0.00	0.00	0.00	0.00	0.00	0.0360	0.0028	0.0028	0.0012	0.0012	0.56	0.16	0.16	0.56	0.56	0.16	0.16	0.16	44	
45	0.00	0.00	0.00	0.00	0.45	0.45	0.0400	0.0030	0.0030	0.0013	0.0013	0.56	0.26	0.26	0.56	0.56	0.26	0.26	0.26	45	
46	0.00	0.00	0.00	0.00	0.31	0.31	0.0468	0.0038	0.0038	0.0014	0.0014	0.56	0.26	0.26	0.56	0.56	0.26	0.26	0.26	46	
47	0.00	0.00	0.00	0.00	0.31	0.31	0.0532	0.0049	0.0049	0.0015	0.0015	0.56	0.26	0.26	0.56	0.56	0.26	0.26	0.26	47	
48	0.00	0.00	0.00	0.00	0.31	0.31	0.0592	0.0062	0.0062	0.0016	0.0016	0.56	0.26	0.26	0.56	0.56	0.26	0.26	0.26	48	
49	0.00	0.00	0.00	0.00	0.28	0.28	0.0648	0.0079	0.0079	0.0017	0.0017	0.56	0.26	0.26	0.56	0.56	0.26	0.26	0.26	49	

Rates have been rounded for display purposes.

\*Refers to survivor who selects annuity payments (rather than a lump sum payment) upon active or terminated vested member's death. The LEOFF 2 ratio is 0.60 for duty-related deaths.

# Appendices

Service Retirement (Continued)						Disablement (Continued)						Ratio of Survivors Selecting Annuities* (Continued)					
Age	LEOFF 1		LEOFF 2		WSPRS	LEOFF 1	LEOFF 2		WSPRS	LEOFF 1	LEOFF 2		WSPRS	LEOFF 1	LEOFF 2		WSPRS
	Male &	Female	Male &	Female	Male &		Male &	Female	Male &		Male &	Female	Male &		Male &	Female	Male &
50	0.07	0.07	0.05	0.05	0.28	0.0700	0.0101	0.0018	0.0018	0.56	0.30	0.56	0.30	0.56	0.30	0.56	0.30
51	0.07	0.07	0.05	0.05	0.23	0.0748	0.0120	0.0019	0.0019	0.56	0.30	0.56	0.30	0.56	0.30	0.56	0.30
52	0.07	0.07	0.05	0.05	0.23	0.0792	0.0143	0.0020	0.0020	0.56	0.30	0.56	0.30	0.56	0.30	0.56	0.30
53	0.07	0.07	0.10	0.10	0.23	0.0832	0.0170	0.0022	0.0022	0.56	0.30	0.56	0.30	0.56	0.30	0.56	0.30
54	0.11	0.11	0.12	0.12	0.23	0.0868	0.0202	0.0023	0.0023	0.56	0.30	0.56	0.30	0.56	0.30	0.56	0.30
55	0.12	0.12	0.15	0.15	0.23	0.0900	0.0240	0.0025	0.0025	0.56	0.39	0.56	0.39	0.56	0.39	0.56	0.39
56	0.12	0.12	0.15	0.15	0.23	0.0928	0.0240	0.0026	0.0026	0.56	0.39	0.56	0.39	0.56	0.39	0.56	0.39
57	0.15	0.15	0.15	0.15	0.23	0.0952	0.0240	0.0028	0.0028	0.56	0.39	0.56	0.39	0.56	0.39	0.56	0.39
58	0.16	0.16	0.20	0.20	0.20	0.0972	0.0240	0.0030	0.0030	0.56	0.39	0.56	0.39	0.56	0.39	0.56	0.39
59	0.16	0.16	0.20	0.20	0.23	0.0988	0.0240	0.0032	0.0032	0.56	0.39	0.56	0.39	0.56	0.39	0.56	0.39
60	0.23	0.23	0.20	0.20	0.23	0.1000	0.0240	0.0034	0.0034	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
61	0.25	0.25	0.25	0.25	0.25	0.1008	0.0240	0.0028	0.0028	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
62	0.25	0.25	0.25	0.25	0.25	0.1012	0.0240	0.0021	0.0021	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
63	0.25	0.25	0.25	0.25	0.27	0.1012	0.0240	0.0014	0.0014	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
64	0.25	0.25	0.25	0.25	0.33	0.1008	0.0240	0.0007	0.0007	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
65	0.25	0.25	0.25	1.00	1.00	0.1000	0.0240	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
66	0.25	0.25	0.25	1.00	1.00	0.0756	0.0240	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
67	0.25	0.25	0.25	1.00	1.00	0.0544	0.0240	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
68	0.25	0.25	0.25	1.00	1.00	0.0364	0.0240	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
69	0.25	0.25	0.25	1.00	1.00	0.0216	0.0240	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
70	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
71	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
72	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
73	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
74	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
75	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
76	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
77	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
78	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
79	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53
80+	1.00	1.00	1.00	1.00	1.00	0.0000	0.0000	0.0000	0.0000	0.56	0.53	0.56	0.53	0.56	0.53	0.56	0.53

Rates have been rounded for display purposes.

\*Refers to survivor who selects annuity payments (rather than a lump sum payment) upon active or terminated vested member's death. The LEOFF 2 ratio is 0.60 for duty-related deaths.

Service Years	Termination				Percent Vested*				Step Salary Increases by System			
	LEOFF 1		LEOFF 2		LEOFF 1		LEOFF 2		LEOFF		WSPRS	
	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	% Increase	Salary Ratio	% Increase	Salary Ratio
0	0.1072	0.1062	0.0334	0.0334	0.00	0.00	0.00	0.00	11.00%	1.840	7.10%	1.626
1	0.0482	0.0472	0.0287	0.0287	0.00	0.00	0.00	0.00	11.00%	1.657	7.10%	1.519
2	0.0246	0.0236	0.0256	0.0256	0.00	0.00	0.00	0.00	7.70%	1.493	5.90%	1.418
3	0.0217	0.0208	0.0239	0.0239	0.00	0.00	0.00	0.00	6.10%	1.386	5.20%	1.339
4	0.0206	0.0196	0.0226	0.0226	0.00	0.00	0.00	0.00	4.00%	1.307	5.20%	1.273
5	0.0198	0.0188	0.0159	0.0159	1.00	0.24	0.28	0.28	2.80%	1.256	5.20%	1.210
6	0.0194	0.0184	0.0151	0.0151	1.00	0.24	0.28	0.28	2.00%	1.222	4.50%	1.150
7	0.0193	0.0184	0.0144	0.0144	1.00	0.24	0.28	0.28	1.60%	1.198	0.80%	1.100
8	0.0180	0.0170	0.0138	0.0138	1.00	0.24	0.28	0.28	1.50%	1.179	0.80%	1.092
9	0.0175	0.0166	0.0133	0.0133	1.00	0.24	0.28	0.28	1.40%	1.162	0.80%	1.083
10	0.0172	0.0162	0.0100	0.0100	1.00	0.24	0.28	0.28	1.70%	1.146	0.80%	1.074
11	0.0153	0.0143	0.0096	0.0096	1.00	0.24	0.33	0.33	1.30%	1.127	0.80%	1.066
12	0.0151	0.0141	0.0092	0.0092	1.00	0.24	0.38	0.38	1.30%	1.112	0.40%	1.057
13	0.0145	0.0135	0.0089	0.0089	1.00	0.27	0.38	0.38	1.30%	1.098	0.40%	1.053
14	0.0116	0.0106	0.0086	0.0086	1.00	0.27	0.40	0.40	1.30%	1.084	0.40%	1.049
15	0.0108	0.0098	0.0070	0.0070	1.00	0.27	0.40	0.40	1.30%	1.070	0.40%	1.045
16	0.0106	0.0096	0.0067	0.0067	1.00	0.27	0.40	0.40	1.10%	1.056	0.40%	1.041
17	0.0085	0.0075	0.0065	0.0065	1.00	0.33	0.40	0.40	1.10%	1.045	0.40%	1.037
18	0.0087	0.0077	0.0062	0.0062	1.00	0.44	0.50	0.50	1.10%	1.033	0.40%	1.032
19	0.0086	0.0077	0.0060	0.0060	1.00	0.44	0.58	0.58	1.10%	1.022	0.40%	1.028
20	0.0088	0.0078	0.0033	0.0033	1.00	0.69	0.78	0.78	1.10%	1.011	0.40%	1.024
21	0.0085	0.0076	0.0031	0.0031	1.00	0.82	1.00	1.00	0.00%	1.000	0.40%	1.020
22	0.0082	0.0072	0.0029	0.0029	1.00	0.88	1.00	1.00	0.00%	1.000	0.40%	1.016
23	0.0076	0.0066	0.0027	0.0027	1.00	1.00	1.00	1.00	0.00%	1.000	0.40%	1.012
24	0.0072	0.0063	0.0025	0.0025	1.00	1.00	1.00	1.00	0.00%	1.000	0.40%	1.008

Rates have been rounded for display purposes.

\*Denotes ratio of members who do not withdraw their savings when they leave employment.

# Appendices

Service Years	Termination (Continued)				Percent Vested* (Continued)				Step Salary Increases by System (Continued)			
	LEOFF 1		LEOFF 2		LEOFF 1		LEOFF 2		LEOFF		WSPRS	
	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	% Increase	Salary Ratio	% Increase	Salary Ratio
25	0.0067	0.0057	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.40%	1.004
26	0.0077	0.0067	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
27	0.0070	0.0061	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
28	0.0062	0.0052	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
29	0.0018	0.0009	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
30	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
31	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
32	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
33	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
34	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
35	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
36	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
37	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
38	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
39	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
40	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
41	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
42	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
43	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
44	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
45	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
46	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
47	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
48	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
49	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000
50	0.0016	0.0007	0.0000	0.0000	1.00	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000

Rates have been rounded for display purposes.

\*Denotes ratio of members who do not withdraw their savings when they leave employment.

Portability Load	
LEOFF 1	0.0%
LEOFF 2	0.1%
WSPRS	0.0%

*Reflects portability provisions for each plan.*

Certain and Life Annuities: Years Certain	
LEOFF 1	3
LEOFF 2	5
WSPRS 1	3
WSPRS 2	4

Member/Beneficiary Age Difference (In Years)		
	Male Member	Female Member
LEOFF	3	(2)
WSPRS	3	(2)

*Age difference is Member age minus Beneficiary age.*

Duty-Related Death Assumption	
	Duty Death Rate*
LEOFF 1	0.0376%
LEOFF 2	0.0376%
WSPRS	0.0200%

*\*The duty death rate is a constant probability, regardless of age. The nonduty death rate is obtained by subtracting the duty death rate from the mortality rate at any given age.*

Duty-Related Disability Assumption	
Age	Duty Disability Rate*
20	99.93%
25	99.91%
30	99.84%
35	99.81%
40	99.66%
50	99.22%
55+	99.31%

*\*Probability of disability being duty-related; geometrically interpolated between given values. Applies to LEOFF 2 only. Table represents a summary of rates.*

Additional Duty-Related Assumptions for LEOFF 2	
Percent of disabilities assumed to be catastrophic	
	18%
Percent of deaths assumed to be caused by occupational diseases for fire fighters	
Age	Rate
20-49	14.742%
50-69	27.393%

## Appendices

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### *Miscellaneous Assumptions/Methods*

- Minimum and maximum allowable ages are set in the data as follows:

	Non-Annuity	Annuity
Minimum Age	16	20
Maximum Age	80	120

- Default entry salaries, increased for past service, are assigned for active members with less than two months' service during the valuation year.
- The Department of Retirement Systems (DRS) does not provide us with the historical salaries of vested terminated members. To estimate salaries for these members we use the following procedure: First, we assign a salary appropriate for the given system/plan and the member's total past service. These salaries are determined as of a given base year. Second, the salary is divided by the general salary increase assumption for each year the member has been inactive as measured from the base year.
- While the DRS reports salaries earned during the year prior to the valuation date, the salaries used in the first year of the valuation process received an additional salary increase. In other words, the valuation software projects salaries to the coming year, beginning the day after the valuation date.
- All systems use a midyear decrement timing assumption.
- We set termination rates to zero after members become eligible to retire.



## Summary of Plan Provisions

Summary of Plan Provisions	
Effective Date of Plan	10/1/77
Date Closed to New Entrants	Open
Statutory Reference	Chapter 41.26 RCW
Normal Retirement Eligibility (age/service)	53/5
Accrued Benefit Formula	2% x YOS x AFC; 0.25% per month pre-retirement COLA with 20 years of service
Computation of FAS	Average compensation earnable for the highest 60 consecutive months
Credited Service	Monthly, based on hours worked each month
Vesting	5 years
Vested Benefits Upon Termination	Refund of employee contributions (x 150% if 10 YOS) plus interest, or deferred retirement allowance
Early Retirement Eligibility (age/service)	50/20
Early Retirement Reduction Factors	3% ERF with 20 YOS
Disability Retirement Benefit	Non-duty: accrued benefit, actuarially reduced; Duty, occupational: accrued benefit without actuarial reduction, minimum 10% of FAS; Duty, total: 70% of FAS with offsets for Social Security and L&I benefits, not to exceed 100% of FAS.
COLA	Lesser of CPI* or 3%
Minimum Benefit per Month per YOS	n/a
Changes in Plan Provisions Since Last Valuation	Alternate Revenue Source (Ch 99 L 08)

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

## Appendices

Early Retirement Reduction Factors			Early Retirement Reduction Factors		
Years	LEOFF2,		(Continued)		
Early	WSPRS*	Subsidized 3%**	Years	LEOFF2,	
			Early	WSPRS*	Subsidized 3%**
0	1.0000	1.00	25	0.1400	N/A
1	0.9200	0.97	26	0.1300	N/A
2	0.8400	0.94	27	0.1200	N/A
3	0.7600	0.91	28	0.1100	N/A
4	0.7100	N/A	29	0.1000	N/A
5	0.6600	N/A	30	0.1000	N/A
6	0.6100	N/A	31	0.1000	N/A
7	0.5600	N/A	32	0.1000	N/A
8	0.5100	N/A	33	0.1000	N/A
9	0.4700	N/A	34	0.1000	N/A
10	0.4300	N/A	35	0.1000	N/A
11	0.3900	N/A	36	0.1000	N/A
12	0.3500	N/A	37	0.1000	N/A
13	0.3100	N/A	38	0.1000	N/A
14	0.2900	N/A	39	0.1000	N/A
15	0.2700	N/A	40	0.1000	N/A
16	0.2500	N/A	41	0.1000	N/A
17	0.2300	N/A	42	0.1000	N/A
18	0.2100	N/A	43	0.1000	N/A
19	0.2000	N/A	44	0.1000	N/A
20	0.1900	N/A	45	0.1000	N/A
21	0.1800	N/A	46	0.1000	N/A
22	0.1700	N/A	47	0.1000	N/A
23	0.1600	N/A	48	0.1000	N/A
24	0.1500	N/A	49	0.1000	N/A

\*Terminated Vested only.

\*\*LEOFF 2 members must be at least age 50 with 20 or more years of service to qualify.

## Age/Service Distribution

Age and Service Distribution of Active Law Enforcement Officers (Number of Actives and Average Annual Salary)															
LEOFF Plan 2: Attained Age															
	Attained Years of Service														
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over	Total	
Under 25	53	58	20	1	0	0	0	0	0	0	0	0	0	132	0
	\$47,855	\$49,452	\$59,760	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,295	\$0
25-29	100	219	164	105	71	111	1	0	0	0	0	0	0	771	\$0
	\$48,476	\$52,283	\$59,135	\$62,876	\$64,776	\$69,226	*	\$0	\$0	\$0	\$0	\$0	\$0	\$58,303	\$0
30-34	78	130	112	120	110	698	133	0	0	0	0	0	0	1,381	\$0
	\$50,111	\$53,102	\$60,057	\$65,077	\$65,517	\$71,923	\$75,555	\$0	\$0	\$0	\$0	\$0	\$0	\$67,202	\$0
35-39	48	93	94	67	88	643	772	165	0	0	0	0	0	1,970	\$0
	\$50,758	\$55,079	\$66,175	\$63,080	\$69,238	\$71,803	\$75,948	\$82,385	\$0	\$0	\$0	\$0	\$0	\$72,332	\$0
40-44	18	40	48	34	43	334	485	704	127	0	0	0	0	1,833	\$0
	\$47,791	\$60,923	\$64,311	\$69,489	\$68,072	\$73,784	\$77,495	\$80,691	\$88,565	\$0	\$0	\$0	\$0	\$77,445	\$0
45-49	6	19	19	11	32	141	189	463	436	128	0	0	0	1,444	\$0
	\$54,730	\$50,780	\$72,617	\$62,171	\$68,730	\$70,325	\$76,555	\$81,556	\$86,683	\$91,412	\$0	\$0	\$0	\$81,161	\$0
50-54	5	9	8	11	18	65	115	190	263	440	14	0	0	1,138	\$0
	\$67,936	\$73,472	\$76,451	\$54,474	\$71,599	\$71,869	\$73,544	\$79,296	\$83,652	\$90,366	\$92,975	\$0	\$0	\$83,268	\$0
55-59	1	3	2	5	11	32	39	77	94	182	3	0	0	449	\$0
	\$66,397	\$131,818	\$70,426	\$79,539	\$77,115	\$73,774	\$74,050	\$82,844	\$85,468	\$94,325	\$0	\$0	\$0	\$81,157	\$0
60-64	1	0	3	0	5	7	13	26	18	21	2	0	0	96	\$0
	\$0	\$0	\$78,517	\$0	\$70,444	\$86,334	\$70,564	\$74,162	\$76,576	\$87,763	\$67,506	\$0	\$0	\$77,639	\$0
65-69	1	0	0	0	0	3	0	2	4	1	0	0	0	11	\$0
	\$0	\$0	\$0	\$0	\$0	\$82,246	\$0	\$75,232	\$67,358	*	\$0	\$0	\$0	\$73,056	\$0
70 & 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	\$0	\$0
Total	311	571	470	354	378	2,034	1,747	1,627	942	772	19	0	0	9,225	\$0
	\$49,675	\$53,601	\$62,591	\$64,053	\$67,570	\$72,077	\$76,164	\$80,520	\$85,432	\$89,303	\$90,507	\$0	\$0	\$74,309	\$0
Average:	Age	40.9	Number of Participants:		Vested		6,984	Males		8,311	Early Retirement Eligible:		471		
	Service	11.8	Not Vested		2,241			Females		914	Normal Retirement Eligible:		878		

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

# Appendices

## Age and Service Distribution of Active Fire Fighters (Number of Actives and Average Annual Salary)

(Continued)

### LEOFF Plan 2: Attained Age

Attained Age	Attained Years of Service														Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over		
Under 25	38	46	16	7	1	0	0	0	0	0	0	0	0	108	
	\$49,143	\$50,806	\$61,053	\$59,319	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$52,420	
25-29	76	128	106	55	73	132	0	0	0	0	0	0	0	570	
	\$48,493	\$52,706	\$60,021	\$64,666	\$69,683	\$73,527	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$61,654	
30-34	47	80	74	60	103	510	93	1	0	0	0	0	0	968	
	\$49,526	\$53,475	\$61,798	\$66,317	\$69,808	\$76,726	\$80,958	*	\$0	\$0	\$0	\$0	\$0	\$71,376	
35-39	28	51	54	59	75	501	507	162	0	0	0	0	0	1,437	
	\$49,962	\$52,394	\$60,965	\$65,093	\$72,397	\$76,570	\$81,979	\$84,591	\$0	\$0	\$0	\$0	\$0	\$76,731	
40-44	3	20	17	24	24	231	355	438	128	2	0	0	0	1,242	
	\$49,951	\$51,334	\$54,850	\$62,654	\$72,956	\$75,708	\$82,619	\$87,273	\$95,233	\$94,636	\$0	\$0	\$0	\$82,759	
45-49	3	11	12	8	9	108	206	344	317	191	1	0	0	1,210	
	\$51,682	\$62,518	\$62,002	\$63,095	\$71,635	\$75,356	\$79,841	\$86,870	\$91,470	\$98,326	*	\$0	\$0	\$86,838	
50-54	1	1	5	4	4	57	76	197	214	370	2	0	0	931	
	*	*	\$77,643	\$62,750	\$62,589	\$77,763	\$80,453	\$84,080	\$92,074	\$96,545	\$103,821	\$0	\$0	\$89,929	
55-59	1	4	6	1	3	23	20	50	73	154	2	0	0	337	
	*	\$62,990	\$87,120	*	\$67,682	\$84,922	\$82,261	\$89,966	\$92,694	\$94,244	\$92,642	\$0	\$0	\$90,946	
60-64	0	0	0	1	2	10	5	8	10	23	1	0	0	60	
	\$0	\$0	\$0	*	\$87,955	\$71,240	\$89,740	\$82,998	\$88,400	\$85,130	*	\$0	\$0	\$82,293	
65-69	0	1	1	0	0	1	3	3	1	1	0	0	0	11	
	\$0	*	*	\$0	\$0	*	\$103,338	\$66,517	*	*	\$0	\$0	\$0	\$79,364	
70 & 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	197	342	291	219	294	1,573	1,265	1,203	743	741	6	0	0	6,874	
	\$49,168	\$52,876	\$61,235	\$64,555	\$70,737	\$76,264	\$81,730	\$86,303	\$92,405	\$96,217	\$92,020	\$0	\$0	\$79,750	

Average: Age 41.2 Number of Participants: Vested 5,407 Males 6,476 Early Retirement Eligible: 400  
Service 12.4 Not Vested 1,467 Females 398 Normal Retirement Eligible: 651

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

## Age/Years Retired Distribution

Age and Years Retired Distribution of Service Retired Law Enforcement Officers (Number of Service Retired Members and Average Monthly Benefit)														
LEOFF Plan 2: Attained Age														
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & 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	21	54	19	9	4	0	0	0	0	0	0	0	0	107
	\$2,592	\$2,285	\$2,762	\$2,270	\$2,122	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,423
55-59	22	36	56	39	18	31	0	0	0	0	0	0	0	202
	\$2,952	\$2,470	\$2,220	\$2,145	\$1,669	\$1,407	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,156
60-64	8	13	16	16	13	63	0	0	0	0	0	0	0	129
	\$2,724	\$2,696	\$2,240	\$2,187	\$1,839	\$1,386	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,852
65-69	2	7	5	5	8	23	10	0	0	0	0	0	0	60
	\$2,001	\$1,555	\$1,428	\$1,684	\$1,324	\$1,210	\$857	\$0	\$0	\$0	\$0	\$0	\$0	\$1,291
70-74	1	0	0	1	1	4	8	1	0	0	0	0	0	16
	*	\$0	\$0	*	*	\$1,758	\$774	*	\$0	\$0	\$0	\$0	\$0	\$1,136
75-79	0	0	0	0	0	1	2	2	1	0	0	0	0	6
	\$0	\$0	\$0	\$0	\$0	*	\$1,371	\$795	*	\$0	\$0	\$0	\$0	\$1,066
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	54	110	96	70	44	122	20	3	1	0	0	0	0	520
	\$2,717	\$2,348	\$2,290	\$2,127	\$1,676	\$1,371	\$875	\$960	*	\$0	\$0	\$0	\$0	\$1,992
Average:	Years Retired	Age	59.1											
			3.4											
*Monthly benefit omitted for privacy reasons.														

# Appendices

## Age and Years Retired Distribution of Service Retired Fire Fighters (Number of Service Retired Members and Average Monthly Benefit)

(Continued)

### LEOFF Plan 2: Attained Age

Attained Age	Attained Years Retired														Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over		
Under 50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
50-54	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	16	9	2	0	0	0	0	0	0	0	0	0	0	0	
55-59	\$2,508	\$2,416	\$2,483	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	7	27	33	21	10	12	0	0	0	0	0	0	0	0	
60-64	\$3,067	\$2,882	\$2,340	\$1,948	\$2,322	\$1,984	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	8	4	7	4	7	26	0	0	0	0	0	0	0	0	
65-69	\$2,367	\$2,149	\$2,430	\$1,467	\$2,226	\$1,770	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	1	2	1	6	3	8	3	0	0	0	0	0	0	0	
70-74	\$1,790	\$2,431	\$1,895	\$1,900	\$1,907	\$835	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	*	\$2,431	*	\$1,895	\$1,900	\$1,907	\$835	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
75-79	\$0	\$0	\$0	\$0	\$0	\$1,265	\$960	\$1,153	\$0	\$0	\$0	\$0	\$0	\$0	
	0	0	0	0	0	8	10	2	0	0	0	0	0	0	
80-84	\$0	\$0	\$0	\$0	\$0	\$0	\$2,059	\$598	1	0	0	0	0	0	
	0	0	0	0	0	0	2	3	*	\$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	*	
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	32	42	43	31	21	54	15	6	1	0	0	0	0	0	
	\$2,553	\$2,691	\$2,355	\$1,876	\$2,167	\$1,763	\$1,082	\$723	*	\$0	\$0	\$0	\$0	\$0	

Average: Age 60.4  
Years Retired 4.0

Males 235  
Females 10

\*Monthly benefit omitted for privacy reasons.

Age and Years Retired Distribution of All Disabled Law Enforcement Officers  
(Number of All Disabled Members and Average Monthly Benefit)

(Continued)

LEOFF Plan 2:  
Attained Age

	Attained Years Retired										40 & Over				Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over		
Under 50	0	3	4	0	2	8	0	0	0	0	0	0	0	0	17
	\$0	\$1,325	\$1,129	\$0	\$725	\$619	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$876
50-54	0	5	4	5	1	5	0	0	0	0	0	0	0	0	20
	\$0	\$2,431	\$2,845	\$1,941	*	\$507	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,854
55-59	3	2	7	3	2	4	0	1	0	0	0	0	0	0	22
	\$1,858	\$2,358	\$2,150	\$2,149	\$2,510	\$1,197	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	\$1,897
60-64	0	2	1	3	0	4	0	0	0	0	0	0	0	0	10
	\$0	\$2,608	*	\$1,968	\$0	\$1,519	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,781
65-69	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
	\$0	\$0	\$0	\$0	\$0	*	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$719
70-74	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*
75-79	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*	*	\$0	\$0	\$0	\$0	\$227
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	\$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	\$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	\$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	\$0	\$0
<b>Total</b>	<b>3</b>	<b>12</b>	<b>16</b>	<b>11</b>	<b>5</b>	<b>23</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>74</b>
	<b>\$1,858</b>	<b>\$2,172</b>	<b>\$1,972</b>	<b>\$2,005</b>	<b>\$1,556</b>	<b>\$859</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,538</b>

Average: Age 54.5  
Years Retired 4.2

Males 64  
Females 10

\*Monthly benefit omitted for privacy reasons.

# Appendices

## Age and Years Retired Distribution of All Disabled Fire Fighters (Number of All Disabled Members and Average Monthly Benefit)

(Continued)

### LEOFF Plan 2: Attained Age

	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over	Total
Under 50	0	2	1	1	2	2	0	0	0	0	0	0	0	8
	\$0	\$1,000	*	*	\$657	\$654	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$735
50-54	1	2	2	0	0	3	0	0	0	0	0	0	0	8
	*	\$2,718	\$2,054	\$0	\$0	\$1,864	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,133
55-59	1	3	3	2	0	2	0	0	0	0	0	0	0	11
	*	\$2,710	\$2,794	\$2,711	\$0	\$1,933	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,589
60-64	1	0	2	0	2	2	1	0	0	0	0	0	0	8
	*	\$0	\$1,599	\$0	\$2,186	\$1,245	*	\$0	\$0	\$0	\$0	\$0	\$0	\$1,608
65-69	0	0	1	0	0	1	1	0	0	0	0	0	0	3
	\$0	\$0	*	\$0	\$0	*	*	\$0	\$0	\$0	\$0	\$0	\$0	\$956
70-74	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
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
<b>Total</b>	<b>3</b>	<b>7</b>	<b>9</b>	<b>3</b>	<b>4</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>
	<b>\$2,168</b>	<b>\$2,224</b>	<b>\$1,968</b>	<b>\$1,939</b>	<b>\$1,422</b>	<b>\$1,478</b>	<b>\$546</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,767</b>

Average:      Age      53.9  
Years Retired      3.6

Males      34  
Females      4

\*Monthly benefit omitted for privacy reasons.





# Appendices

## Age and Years Retired Distribution of Survivors of Fire Fighters (Number of Survivors and Average Monthly Benefit)

(Continued)

### LEOFF Plan 2: Attained Age

	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & Over	Total
Under 50	0	2	2	0	0	0	0	0	0	0	0	0	0	4
	\$0	\$1,817	\$2,056	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,937
50-54	0	1	1	1	0	1	0	0	0	0	0	0	0	4
	\$0	*	*	*	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,795
55-59	1	1	0	1	0	1	1	0	0	0	0	0	0	5
	*	*	\$0	*	\$0	*	*	\$0	\$0	\$0	\$0	\$0	\$0	\$1,842
60-64	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	*
65-69	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	*
70-74	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	*
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	1	0	0	0	0	0	1
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
90-94	0	0	0	0	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0	\$0	1	0	0	0	0	0	0	0	1
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	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>
	<b>* \$1,886</b>	<b>\$1,819</b>	<b>\$2,342</b>	<b>\$0</b>	<b>\$1,203</b>	<b>\$430</b>	<b>\$0</b>	<b>*</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,509</b>

Average: Age 55.8

Years Retired 5.5

Males 1

Females 17

\*Monthly benefit omitted for privacy reasons.

## Historical Data

	Historical Data					
(Dollars in millions)	2007 <sup>1</sup>	2006	2005	2004	2003	2002
<b>Contribution Information</b>						
Employer Rate	4.56%	4.66%	4.86%	4.57%	4.32%	3.84%
State Rate	3.04%	3.11%	3.24%	3.03%	2.88%	2.57%
Employee Rate	7.60%	7.77%	8.10%	7.60%	7.20%	6.41%
<b>Funded Status</b>						
Credited Projected Liability	\$3,386	\$3,323	\$2,932	\$2,521	\$2,194	\$1,937
Market Value of Assets	\$5,185	\$4,339	\$3,614	\$2,984	\$2,541	\$2,136
Actuarial Value of Assets	\$4,360	\$3,844	\$3,329	\$2,947	\$2,740	\$2,646
Unfunded Liability	(\$974)	(\$521)	(\$397)	(\$426)	(\$547)	(\$709)
Funded Ratio	128.76%	115.68%	113.53%	116.89%	124.91%	136.62%
<b>Participant Data</b>						
Number of Actives	16,099	15,718	15,168	14,754	14,560	14,011
Total Annual Salaries	\$1,234	\$1,172	\$1,092	\$1,020	\$967	\$902
Number of Terminated Vested	629	597	570	521	439	376
Number of Terminated, Not Vested	1,433	1,362	1,285	1,233	1,186	1,137
Number of Retirees and Beneficiaries	924	779	574	432	316	244
Total Annual Benefits	\$22	\$17	\$11	\$8	\$5	\$3
<b>Assumptions</b>						
Valuation Interest Rate	5.94%	8.00%	8.00%	8.00%	8.00%	8.00%
Salary Increase	5.49%	7.40%	7.40%	7.60%	7.70%	7.80%
Inflation <sup>2</sup>	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Growth in Membership	0.94%	1.25%	1.25%	1.25%	1.25%	1.25%
<b>Actuarial Experience</b>						
Return on Market Value	16.61%	15.77%	17.55%	13.64%	15.13%	(6.31%)
Return on Actuarial Value	10.03%	10.80%	9.30%	4.10%	0.60%	0.10%
Salary Increase	4.31%	5.50%	5.90%	5.20%	4.80%	7.00%
Inflation	3.73%	3.02%	1.57%	1.41%	1.81%	3.55%
Growth in Membership	1.83%	2.66%	1.85%	0.33%	2.59%	1.73%
COLA <sup>3</sup>	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

<sup>1</sup>For the 2007 valuation, the salary, interest, and growth rates were not annualized.  
They reflect the actual valuation period of nine months.

<sup>2</sup>Based on the assumption for prior year's CPI: Urban Wage Earners & Clerical Workers,  
Seattle-Tacoma-Bremerton, WA - All Items.

<sup>3</sup>COLA is based on the CPI (3% maximum per year).

**Glossary*****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 earned (or accrued) as of the valuation date.

***Actuarial Gain or Loss***

Experience of the plan, from one year to the next, which differs from that assumed, results in an actuarial gain or loss. For example, an actuarial gain would occur if assets earned 10 percent for a given year since the assumed interest rate in the valuation is 8 percent.

***Actuarial Value of Assets***

The value of pension plan investments and other property used by the actuary for the purpose of an actuarial valuation (sometimes referred to as valuation assets). Actuaries commonly select an asset valuation method that smoothes the effects of short-term volatility in the market value of assets.

***Entry Age Normal Cost (EANC) Funding Method***

The EANC funding method is a standard actuarial funding method. The annual cost of benefits under EANC is comprised of two components:

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

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

***Funded Ratio***

A ratio of a plan's current assets to the present value of earned pensions. Actuaries use several methods to measure 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 Governmental Accounting Standards Board (GASB), the funded ratio equals the actuarial value of assets divided by the actuarial accrued liability calculated under the Projected Unit Credit cost method.

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***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. The employer normal cost equals the total normal cost of the plan reduced by employee contributions.

***Present Value of Fully Projected Benefits***

Computed by projecting the total future benefit payments from the plan, using actuarial assumptions (i.e., probability of death or retirement, salary increases, etc.), and discounting the payments to the valuation date using the valuation interest rate to determine the present value (today's value).

***Projected Unit Credit (PUC) Funding Method***

The PUC funding method is a standard actuarial funding method. The annual cost of benefits under PUC is comprised of two components:

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

The PUC normal cost equals the difference between the accrued liability at the beginning and end of the plan year.

***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 not covered by current plan assets.





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<p>Phone: 360-586-2320 Fax: 360-586-2329 E-Mail: <a href="mailto:reception@leoff.wa.gov">reception@leoff.wa.gov</a> Web Site: <a href="http://www.leoff.wa.gov">www.leoff.wa.gov</a></p>	