

WASHINGTON STATE  
**Law Enforcement Officers’  
and Fire Fighters’  
Plan 2 Retirement Board**



**2004 Actuarial Valuation Report**

Report Prepared by:

**Office of the State Actuary**

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*A special thank you to Charles Middleton for the use of his "fire fighter saving girl" photo.*

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Office of the State Treasurer

State Investment Board

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WASHINGTON STATE LEGISLATURE

## Office of the State Actuary

### Law Enforcement Officers' and Fire Fighters' Retirement System Plan 2 Actuarial Valuation Report (AVR) As of September 30, 2004

November 2005

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 as of the valuation date September 30, 2004. 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 executive summary of the valuation results for the LEOFF 2 system. The remaining sections of the report provide detailed actuarial asset and liability information. The Appendix provides a summary of the principal actuarial assumptions and methods, summary of the major plan provisions, age-service distributions, historical data, and a glossary of actuarial terms used throughout this report.

We encourage you to submit any questions you might have concerning this report to our regular or e-mail address below. We also invite you to visit our website (<http://osa.leg.wa.gov>) for further information regarding the actuarial funding of the Washington State retirement systems.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew M. Smith".

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State Actuary

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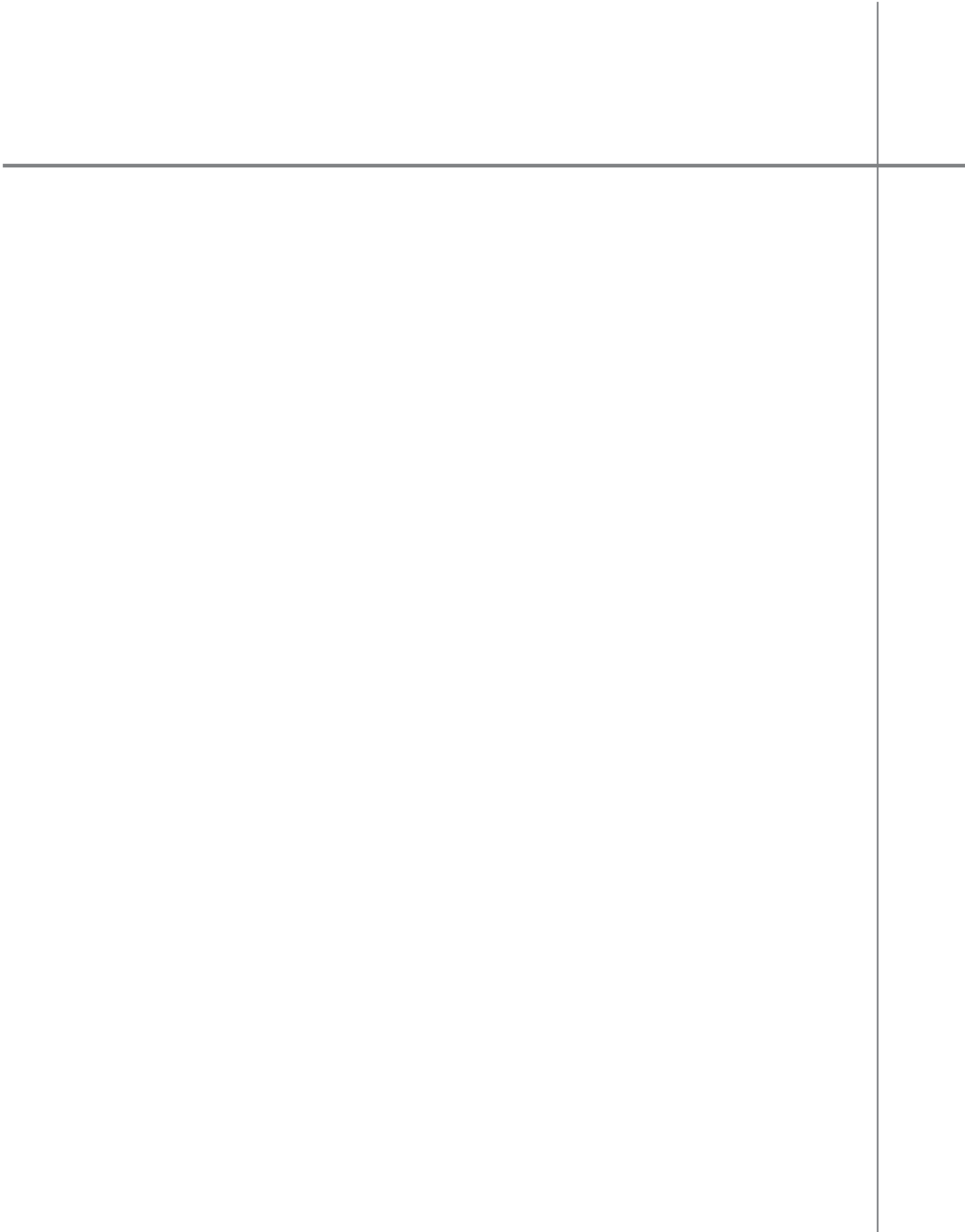
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# Summary of Key Results

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# Summary of Key Results

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## Contribution Rates

Member and employer contribution rates determined from the actuarial valuation are expressed as a percentage of salary and summarized below along with comparable rates from the previous valuation. See the Actuarial Exhibits section of this report for the development of these rates.

Contribution Rates		
	2004	2003
Member	7.60%	7.20%
Employer*	4.57%	4.32%
Total State	3.03%	2.88%

\* Administrative expense rate excluded.

## Contribution Rate-Setting Cycle

Under current Washington State law, in September of even-numbered years, the LEOFF Plan 2 Retirement Board (the Board) reviews the basic contribution rates recommended by the actuary retained by the Board based on an actuarial valuation performed on asset, participant and plan information compiled in odd-numbered years. The Board adopts contribution rates for LEOFF Plan 2 as provided under RCW 41.26.720(1)(a) and 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 that are 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

The funding policy of the Legislature is contained in Chapter 41.45 RCW - Actuarial Funding of State Retirement Systems. RCW 41.45.010 outlines the intent to achieve the following goals:

- ❖ To provide a dependable and systematic process for funding the benefits to members and retirees of the Washington State Retirement Systems;

## Summary of Key Results

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- ❖ To continue to fully fund the LEOFF Plan 2 as provided by law;
- ❖ To establish long-term employer contribution rates that will remain a relatively predictable proportion of the future state budgets; and,
- ❖ To fund, to the extent feasible, benefit increases over the working lives of those members so that the cost of those benefits are paid by the taxpayers who receive the benefit of those members' service.

No member or employer/state contributions are required for LEOFF 1 when the plan has no unfunded actuarial accrued liability. See RCW 41.26.080(2).

The Board has adopted a four-year "phase-in" contribution rate schedule for 2005-2009 that will be reflected in the 2005 actuarial valuation. Beginning July 1, 2009, the rates adopted by the Board shall be no less than 90 percent of the normal cost calculated under the entry age normal cost method.

### Comments on 2004 Results

Short-term actuarial gains or losses occur when actual economic and demographic experience differs from what was assumed in the valuation. Actuarial gains will reduce contribution rates; whereas, 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 also have an impact on contribution rates. Significant factors that impacted the results of this valuation include the following:

- ❖ The actual rate of investment return on the actuarial value of assets was below the assumed rate of 8 percent. Actual investment return was 4.11 percent (dollar weighted) for the plan year.
- ❖ The actual rate of investment return on the market value of assets was above the assumed rate of 8 percent. Actual investment return was 13.73 percent (time weighted) for the plan year.
- ❖ New entrants continue to exert a modest upward adjustment on current contribution rates; and
- ❖ Actual salary growth was below the assumed growth for the period.

Please see the table, Actuarial Gains/Losses, in the Actuarial Exhibit section of this report for detailed gain and loss information.



## Actuarial Liabilities

A summary of key measures of actuarial liability is shown below along with comparable information from last year's valuation. See the Actuarial Exhibits section of this report for additional information on the plan's actuarial liability. See the Glossary for a brief explanation of the actuarial terms.

<b>Actuarial Liabilities</b>		
<i>(Dollars in millions)</i>	2004	2003
Present Value of Fully Projected Benefits	\$4,800	\$4,383
Unfunded Actuarial Accrued Liability	N/A	N/A
Present Value of Credited Projected Benefits	2,521	2,194
Valuation Interest Rate	8.00%	8.00%

## Assets

The market value of assets and actuarial (or smoothed) value of assets are shown below 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>	2004	2003
Market Value of Assets	\$2,984	\$2,541
Actuarial Value of Assets	\$2,947	2,740
Contributions*	103	88
Disbursements	12	10
Investment Return	351	327
Rate of Return on Assets	13.73%	14.67%

*\*Employee and Employer.*

## Funded Status

Several key measures of the plan's funded status are displayed below. The Present Value of Credited Projected Benefits was calculated under the Projected Unit Credit (PUC) cost method and is consistent with governmental accounting standards for the disclosure of a plan's funded status. The PUC cost method is not used to determine contribution requirements for LEOFF Plan 2. Please see the Glossary for an explanation of PUC.

## Summary of Key Results

Funded Status		
<i>(Dollars in millions)</i>	2004	2003
a. Present Value of Credited Projected Benefits	\$2,521	\$2,194
b. Actuarial Value of Assets	\$2,947	2,740
c. Unfunded Liability (a-b)	(426)	(547)
d. Credited Projected Funded Ratio (b/a)	117%	125%

### Participant Data

Participant data used in the actuarial valuation for the plan year ending September 30, 2004, are summarized below along with comparable information from last year's valuation. See the Participant Data section of this report for additional information on the plan's participant data.

Participant Data		
	2004	2003
<b>Active Members</b>		
Number	14,754	14,560
Total Salaries (in millions)	\$1,020	\$967
Average Annual Salary	\$69,098	\$66,388
Average Attained Age	40.1	39.5
Average Service	11.3	10.7
<b>Retirees and Beneficiaries</b>		
Number	432	316
Average Annual Benefit	\$17,821	\$16,087
<b>Terminated Members</b>		
Number Vested	521	439
Number "Non-Vested"	1,233	1,186

### Key Assumptions

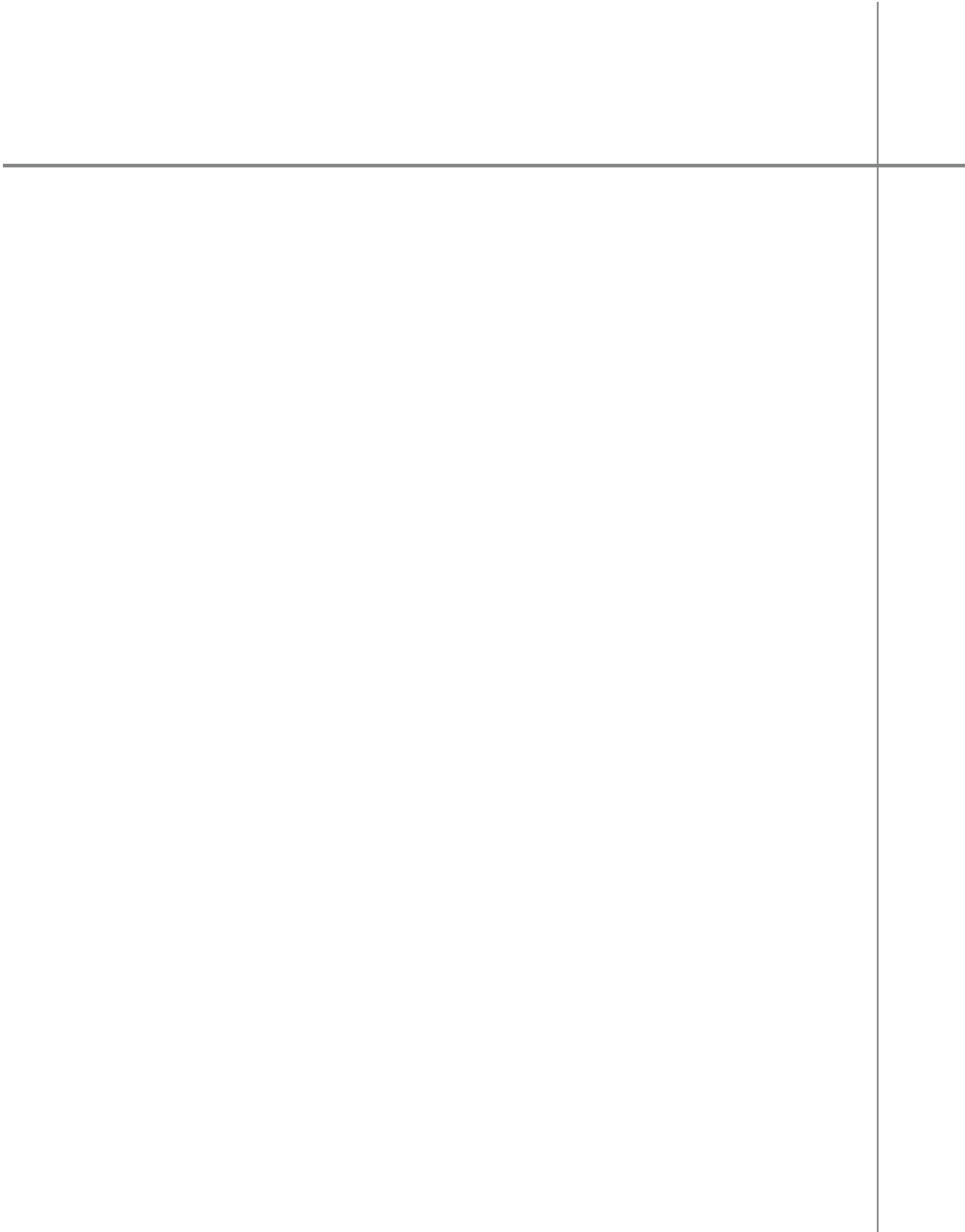
Key economic assumptions used in the actuarial valuation are displayed below. These assumptions were unchanged from the previous year's valuation. See the Appendix - Actuarial Assumptions and Methods for a detailed listing of the actuarial assumptions used in this valuation.

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

# Actuarial Exhibits

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# Actuarial Exhibits

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## Actuarial Certification

This report documents the results of an actuarial valuation of the Law Enforcement Officers' and Fire Fighters' Retirement System Plan 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 listed above as of the valuation date September 30, 2004, and should not be used for other purposes.

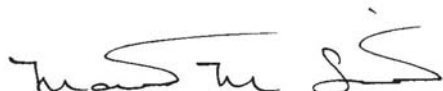
The valuation results summarized in this report involve calculations that require assumptions about future economic and demographic events. We believe that the assumptions and methods used in the underlying valuation are reasonable and appropriate for the primary purpose stated above. The use of another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

The assumptions used in the valuation for investment return, inflation, salary, and membership growth were prescribed by the Legislature in 2001. Demographic assumptions were developed from the 1995-2000 experience study performed by the Office of the State Actuary. The Legislature was responsible for the selection of the actuarial cost and asset valuation methods. In our opinion, all methods, assumptions, and calculations are reasonable and are in conformity with generally accepted actuarial principles and standards as of the date of this publication.

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

The asset smoothing method adopted during the 2003 legislative session (Chapter 11, Laws of 2003, E1) was intended to address the volatility of contribution rates under the aggregate funding method when used in combination with the existing asset allocation policy. 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, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.



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



Philip Martin McCaulay, EA, FSA, MAAA  
Senior Pension Actuary

## Contribution Rates

Member and Employer Rate Summary		
	2004	2003
Member	7.60%	7.20%
Employer*	4.57%	4.32%
State (Normal Cost)	3.03%	2.88%
State (Plan 1 UAAL)	0.00%	0.00%
Total State	3.03%	2.88%

\* Administrative expense rate excluded.

Development of Employer Rate		
a.	Total Normal Cost	15.20%
b.	Employee Normal Cost	7.60%
c.	Employer Contribution (a-b)	7.60%
d.	Cost to Amortize UAAL	0.00%
e.	Total Employer Contribution Rate (c+d)*	4.57%

This reduces the total employer contribution rate from 7.60% to 4.57%.

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**Development of Normal Cost Rates**

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*(Dollars in millions)*

a.	Actuarial Present Value of Fully Projected Benefits	\$4,737
b.	Valuation Assets	2,947
c.	Unfunded Fully Projected Benefits (a-b)	1,790
d.	Contribution adjustment	0
e.	Adjusted Unfunded (c-d)	\$1,790
Present Value of Projected Salaries to Current Members (PVS)		
f.	Plan 1 PVS	N/A
g.	Plan 2 PVS	\$12,159
h.	Plan 3 PVS	N/A
i.	Weighted PVS (f+g+h)	\$12,159
j.	Preliminary Normal Cost (e/i)	14.72%
k.	Change in plan provisions (Laws of 2005)	0.48%
l.	Total Normal Cost (j+k)	15.20%
m.	50% Normal Cost (l x 50%)	7.60%
n.	Employee Contribution Rate (m)*	7.60%
o.	Employer Contribution Rate*	4.57%
p.	State Contribution Rate*	3.03%
q.	Total Contribution Rate (n+o+p)	15.20%

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

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

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**Amortization of the Plan 1 Unfunded Actuarial Accrued Liability (UAAL)**


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*(Dollars in millions)*

	<b>LEOFF 1</b>
a. Actuarial Present Value of Fully Projected Benefits	\$4,321
b. Valuation Assets	4,666
c. Actuarial Present Value of Future Normal Costs	0
d. UAAL (a - b - c)	(345)
e. Expected UAAL Contributions to 2007	0
f. Remaining UAAL (d - e)	(\$345)
g. Amortization Date	6/30/2024
h. Present Value of Projected Salaries beyond 2007	\$15,114
i. Preliminary Rate (f/g)*	(2.28%)
j. Change In Plan Provisions (Laws of 2005)	0.05%
k. Contribution Rate to Amortize the UAAL (i+j)*	(2.23%)

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

*\*LEOFF 1 is fully funded so no UAAL contributions are required.*



## Actuarial Liabilities

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### Present Value of Fully Projected Benefits

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*(Dollars in millions)*

#### Active Members

Retirement	\$4,314
Termination	77
Death	15
Disability	22
Return of Contributions on Termination	72
Return of Contributions on Death	40
Portability	4
<b>Total Active</b>	<b>\$4,544</b>

#### Inactive Members

Terminated	\$84
Service Retired	97
Disability Retired	8
Survivors	4
<b>Total Inactive</b>	<b>\$193</b>

Laws of 2005	63
<b>2004 Total</b>	<b>\$4,800</b>
<b>2003 Total</b>	<b>\$4,383</b>

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

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**Present Value of Credited Projected Benefits**


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*(Dollars in millions)*

**Active Members**

Retirement	\$2,177
Termination	43
Death	8
Disability	12
Return of Contributions on Termination	39
Return of Contributions on Death	21
Portability	2
<b>Total Active</b>	<b>\$2,302</b>

**Inactive Members**

Terminated	\$82
Service Retired	97
Disability Retired	8
Survivors	4
<b>Total Inactive</b>	<b>\$191</b>

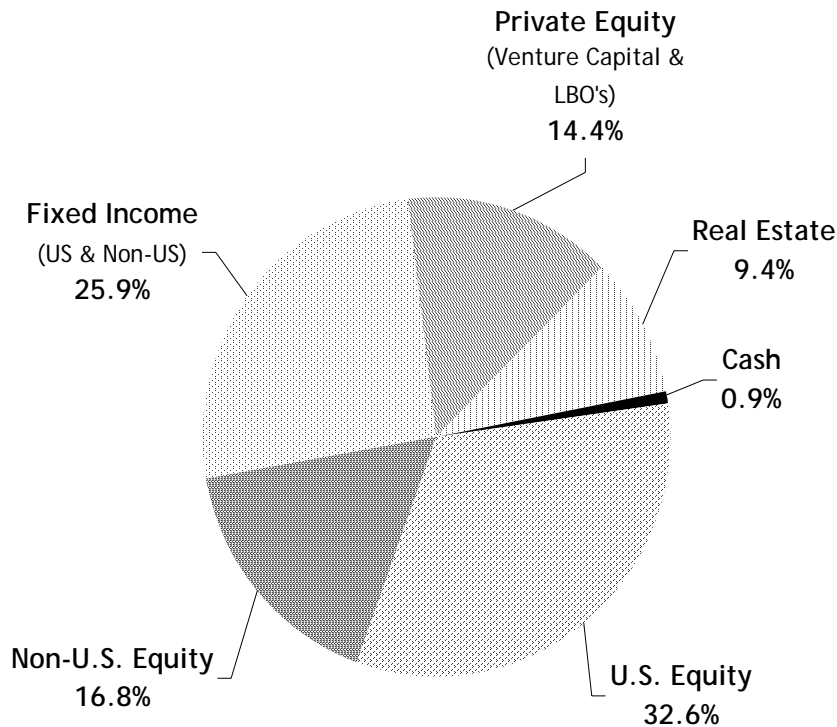
Laws of 2005	29
<b>2004 Total</b>	<b>\$2,521</b>
<b>2003 Total</b>	<b>\$2,194</b>

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

Plan Assets

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



**Cash:** Money held while being transferred between investments or placed temporarily in an interest-bearing account.

**U.S. Fixed Income:** U.S. Treasury and government bonds; investment-grade corporate bonds; publicly traded mortgage-backed securities; mortgages; asset-backed and convertible securities.

**Non-U.S. Fixed Income:** Foreign government bonds.

**U.S. Equity:** Stock in U.S. companies.

**Non-U.S. Equity:** Stock in foreign companies.

**Venture Capital:** Equity financing of early expansion and later-stage growth of small businesses.

**Leveraged Buy-outs (LBOs):** The purchase of all assets or stock in a company using borrowed funds.

**Real Estate:** Office and retail space; apartments; warehouses; hotels; etc.

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### Change in Market Value of Assets

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*(Dollars in millions)*

<b>2003 Market Value</b>	<b>\$2,541</b>
<b>Revenue</b>	
Contributions	
Employee	51
Employer/State	52
Total Contributions	103
Investment Return	351
Restorations	1
Transfers In	0
Miscellaneous	0
<b>Total Revenue</b>	<b>\$455</b>
<b>Disbursements</b>	
Benefit Payments	
Monthly Benefits	7
Refunds	5
Total Benefits	12
Transfers Out	0
Expenses	0
<b>Total Disbursements</b>	<b>\$12</b>
<b>Payables</b>	<b>\$0</b>
<b>2004 Market Value</b>	<b>\$2,984</b>
<b>2004 Actuarial Value</b>	<b>\$2,947</b>
<b>Ratio</b>	<b>99%</b>

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

**Calculation of Actuarial Value of Assets**

*(Dollars in millions)*

a.	Market Value at 9/30/2004	\$2,984
b.	Deferred Investment Gains and (Losses)	
	<u>Plan Year Ending</u>	<u>Percent Deferred</u>
	9/30/2004	83.33%      121
	9/30/2003	75.00%      116
	9/30/2002	62.50%      (200)
	Total	\$37
c.	Market Value less Deferral (a-b)	\$2,947
d.	70% of Market Value of Assets	\$2,089
e.	130% of Market Value of Assets	\$3,879
f.	<b>Actuarial Value of Assets*</b>	<b>\$2,947</b>

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

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

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

*(Dollars in Millions)*

a.	2003 Market Value (at SIB)	\$ 2,533
b.	Total Cash Flow	93
c.	2004 Market Value (at SIB)	2,978
d.	Actual return (c-b-a)	\$ 352
e.	Weighted asset amount	\$ 2,580
f.	Expected return (8% x E)	206
g.	Investment Gain/(Loss) for Prior Year (d-f)	145
h.	Dollar weighted rate of return	13.64%

## Funded Status

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**Funded Status on an Actuarial Value Basis**


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*(Dollars in millions)*

Credited Projected Liability	\$2,521
Valuation Assets	\$2,947
Unfunded Liability	<u>(\$426)</u>

Funded Ratio:

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.**\*Assumptions and/or method change.*


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


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*(Dollars in millions)*

Credited Projected Liability	\$4,146
Market Value of Assets	\$2,984
Unfunded Liability	<u>\$1,162</u>

Funded Ratio:

2004	72%
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*Note: Totals may not agree due to rounding.**\*Liabilities have been valued using an interest rate of 5.5% while assets have been valued at market value.*

## Actuarial Gains/Losses

Change in State Contribution Rate by Source	
2003 Contribution Rate	0.03%
Laws of 2005 applied to 2003	0.00%
<b>2003 Adjusted Contribution Rate</b>	<b>0.03%</b>
Economic Gains/Losses	1.05%
Demographic Gains/Losses	0.02%
Other Gains/Losses	(0.44%)
Total Change	0.63%
2004 Preliminary Contribution Rate	0.66%
Laws of 2005 applied to 2004	0.14%
<b>2004 Contribution Rate</b>	<b>0.80%</b>

*The Contribution Rate is the State's portion for Plan 2 (20% of the Normal Cost) plus the UAAL rate for Plan 1.*

Change in State Normal Cost Rate by Source	
2003 Normal Cost	2.88%
Laws of 2005 applied to 2003	0.00%
<b>2003 Adjusted Normal Cost</b>	<b>2.88%</b>
Assets	0.18%
Salaries	(0.10%)
Growth	0.06%
Economic Gains/Losses	0.14%
Termination/Return to Work	(0.02%)
Retirement	0.01%
Demographic Gains/Losses	(0.01%)
Other Gains/Losses	(0.07%)
Total Change	0.06%
2004 Preliminary Normal Cost	2.94%
Laws of 2005 applied to 2004	0.09%
<b>2004 Normal Cost</b>	<b>3.03%</b>

*The Normal Cost Rate is the State's portion only (20% of the Plan 2 Normal Cost).*

Change in State UAAL Rate by Source	
2003 UAAL Rate	(2.85%)
Laws of 2005 applied to 2003	0.00%
<b>2003 Adjusted UAAL Rate</b>	<b>(2.85%)</b>
Assets	1.54%
Salaries	(0.09%)
Growth	(0.04%)
Inflation (CPI)	(0.50%)
Economic Gains/Losses	0.91%
Termination/Return to Work	0.02%
Retirement	0.01%
Demographic Gains/Losses	0.03%
Other Gains/Losses	(0.37%)
Total Change	0.57%
2004 Preliminary UAAL Rate	(2.28%)
Laws of 2005 applied to 2004	0.05%
<b>2004 UAAL Rate</b>	<b>(2.23%)</b>

*Plan 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 and methods will also have an impact on contribution rates.

### Plan changes:

- ❖ PERS 2/3 EMTs into LEOFF 2 (Chapter 459, Laws 2005)
- ❖ LEOFF 1 Ex-spouse survivor benefit (Chapter 62, Laws 2005)
- ❖ LEOFF 2 Disability (Chapter 451, Laws 2005)

### Assumption Changes:

LEOFF 2 Disability (Chapter 451, Laws 2005).

### Method Changes:

The Plan 2 normal cost rates were determined without adjustment for the lag in time between the valuation date and the date the rates become effective. (The 2003 valuation had an adjustment).

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

<b>Effect of Plan, Assumption, and Method Changes</b>	
<b>Before Changes</b>	
Present Value of Fully Projected Benefits	\$4,737
Present Value of Credited Projected Benefits	2,492
Actuarial Value of Assets	2,947
Unfunded Liability	(455)
Employer Contribution Rate	4.53%
<b>After Changes</b>	
Present Value of Fully Projected Benefits	\$4,800
Present Value of Credited Projected Benefits	2,521
Actuarial Value of Assets	2,947
Unfunded Liability	(426)
Employer Contribution Rate	4.57%
<b>Increase/(Decrease) in Rate</b>	<b>0.04%</b>

*Before and after changes include actuarial gains and losses for the year ending 9/30/2004.*

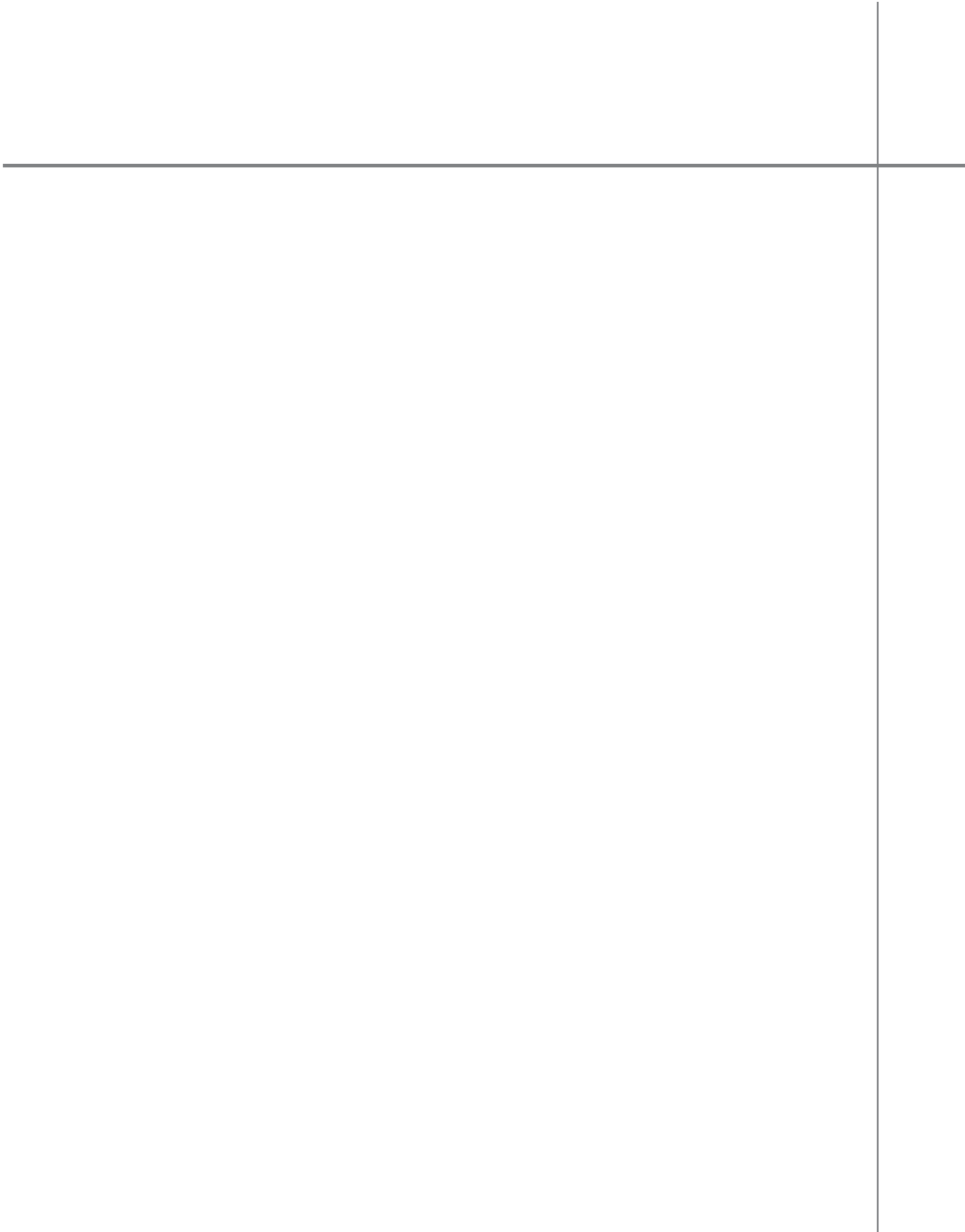
*The LEOFF contribution rate is the Employer's portion only (30% of the total Plan 2 Normal Cost).*



# Participant Data

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# Participant Data

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## Overview of System Membership

LEOFF - Law Enforcement Officers' and Fire Fighters' Retirement System  
*Chapter 41.26 RCW.*

Fire fighters; law enforcement officers including sheriffs; university, port, city police officers, and enforcement officers with the Department of Fish and Wildlife.

<b>Active Membership By Employer</b>	
State Agencies	95
Higher Education	103
Community Colleges	0
K-12	0
Counties	2,660
County Sub Divisions	30
First Class Cities	4,604
Other Cities	4,691
Ports	174
Education Service District	0
Fire Districts	2,397
Public Utility District	0
Water Districts	0
Energy Northwest	0
Unions	0
<b>TOTAL</b>	<b>14,754</b>

The table below summarizes participant data changes from last year's valuation to the current year's valuation. The participant data is divided into two main categories: (1) Actives and (2) Annuitants (receiving a pension or annuity payment). The "+" symbol indicates new participants entering the system or actives and new beneficiaries entering the annuitant status; whereas the "-" symbol indicates participants that have left either active or annuitant status.

<b>Reconciliation of Participant Data</b>	
2003 Actives	14,560
Transfers	0
Hires/Rehires (+)	690
New Retirees (-)	(80)
Deaths (-)	(10)
Terminations (-)	(406)
<b>2004 Actives</b>	<b>14,754</b>
2003 Annuitants	316
New Retirees (+)	117
Annuitant Deaths (-)	(2)
New Survivors (+)	3
Other (-)	(2)
<b>2004 Annuitants</b>	<b>432</b>
<b>Ratio Actives to Annuitants</b>	<b>34.15</b>

## Summary of Plan Participants

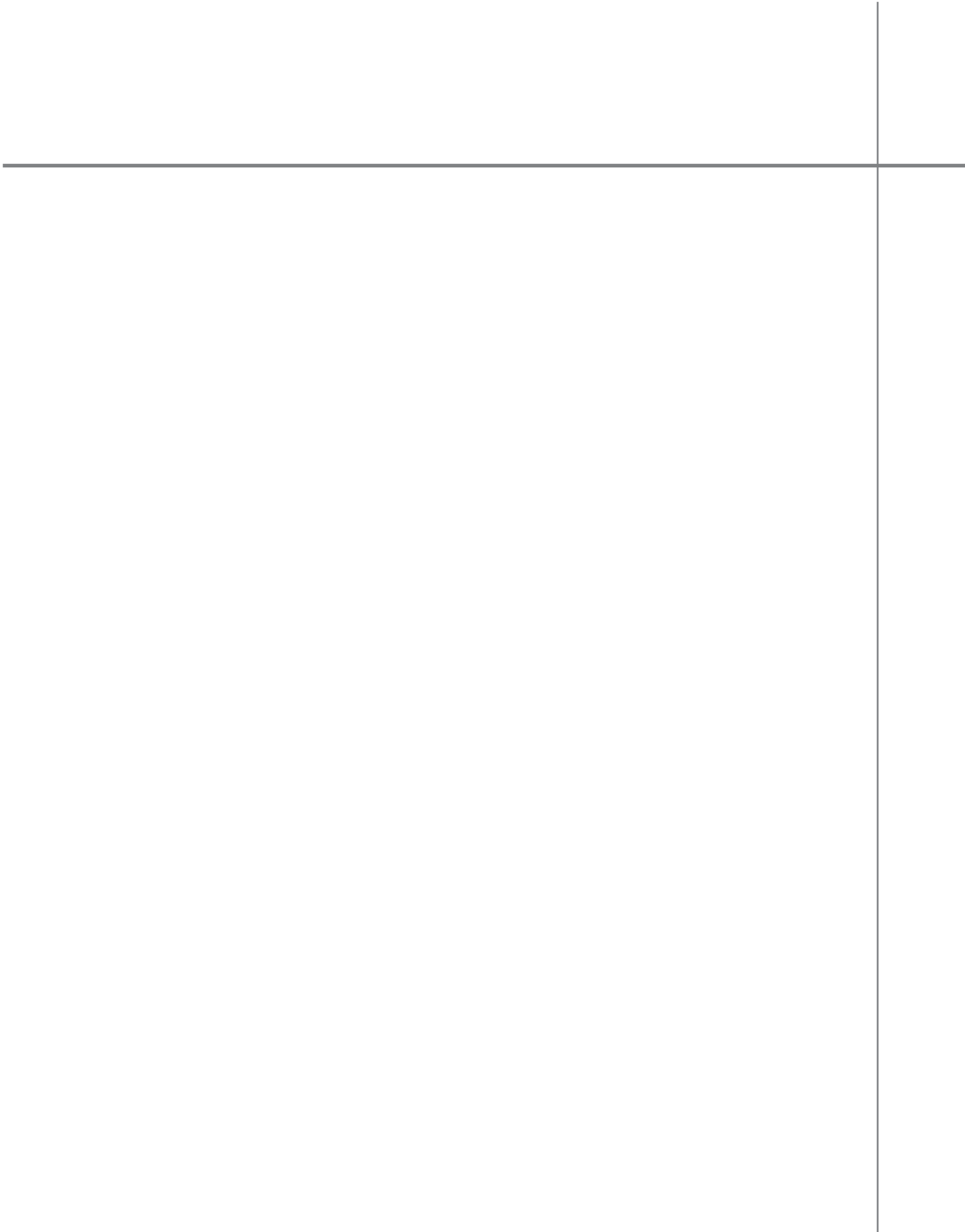
Summary of Plan Participants		
	2004	2003
<b>Active Members</b>		
Number	14,754	14,560
Total Salaries (millions)	\$1,020	\$967
Average Age	40.1	39.5
Average Service	11.3	10.7
Average Salary	\$69,098	\$66,388
<b>Terminated Members</b>		
Number Vested	521	439
Number Non-Vested	1,233	1,186
<b>Retirees</b>		
Number of Retirees (All)	432	316
Average Monthly Benefit, All Retirees	\$1,485	\$1,341
Number of New Service Retirees	104	66
Average Monthly Benefit, New Service Retirees	\$1,848	\$1,720



# Appendices

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# Appendices

## Actuarial Assumptions and Methods

### Actuarial Cost Methods

The Aggregate Cost Method was used to determine the normal cost and the actuarial accrued liability 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 exists.

The Projected Unit Credit (PUC) cost method was used to calculate the plan's funded status and is consistent with governmental accounting standards. Please see the Glossary for an explanation of the PUC cost method.

### Asset Valuation Method

The actuarial value of assets is calculated under 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 Assumptions and Methods since Last Valuation

The Plan 2 normal cost rates were determined without adjustment for the lag in time between the valuation date and the date the rates become effective.

Beginning July 1, 2009, the rates adopted by the Board shall be no less than 90 percent of the normal cost calculated under the entry age normal cost method.

The assumptions have been updated for the Laws of 2004: Duty-death benefits (Chapter 4, Laws 2004), and duty-disability benefits (Chapter 5, Laws 2004).

Full details of the assumptions and methods used to value legislation passed in 2005 are documented in the 2005 fiscal notes: Disability benefits (Chapter 451, Laws 2005).

## Economic Assumptions

Economic Assumptions	
Annual Growth in Membership	1.25%
Interest on Member Contributions <sup>1</sup>	5.50%
Return on Investment Earnings <sup>2</sup>	8.00%
Inflation <sup>3</sup>	3.50%
General Salary Increases (due to 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			Disabled Mortality						Active, Annuitant Mortality							
Age	Combined Healthy Table		LEOFF 2		LEOFF 1		WSP		LEOFF 2		LEOFF 1		WSP		Age	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
20	0.000345	0.000191	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000345	0.000191	20
21	0.000357	0.000192	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000357	0.000192	21
22	0.000366	0.000194	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000366	0.000194	22
23	0.000373	0.000197	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000373	0.000197	23
24	0.000376	0.000201	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000376	0.000201	24
25	0.000376	0.000207	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000376	0.000207	25
26	0.000378	0.000214	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000378	0.000214	26
27	0.000382	0.000223	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000382	0.000223	27
28	0.000393	0.000235	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000393	0.000235	28
29	0.000412	0.000248	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000412	0.000248	29
30	0.000444	0.000264	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000444	0.000264	30
31	0.000499	0.000307	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000499	0.000307	31
32	0.000562	0.000350	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000562	0.000350	32
33	0.000631	0.000394	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000631	0.000394	33
34	0.000702	0.000435	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000702	0.000435	34
35	0.000773	0.000475	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000773	0.000475	35
36	0.000841	0.000514	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000841	0.000514	36
37	0.000904	0.000554	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000904	0.000554	37
38	0.000964	0.000598	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.000964	0.000598	38
39	0.001021	0.000648	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.001021	0.000648	39
40	0.001079	0.000706	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.001079	0.000706	40
41	0.001142	0.000774	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.001142	0.000774	41
42	0.001215	0.000852	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.001215	0.000852	42
43	0.001299	0.000937	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.001299	0.000937	43
44	0.001397	0.001029	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.001397	0.001029	44

**RP-2000 Mortality Rates**

(Continued)

**Disabled Mortality**

(Continued)

**Active, Annuitant Mortality**

(Continued)

Combined Healthy Table

Age Offset (Years) -->

Minimum Probability -->

Age	RP-2000 Mortality Rates				Disabled Mortality				Active, Annuitant Mortality								
	Male		Female		Male		Female		Male		Female		Male		Female		
	LEOFF 2	WSP	LEOFF 1	WSP	LEOFF 2	WSP	LEOFF 1	WSP	LEOFF 2	WSP	LEOFF 1	WSP	LEOFF 2	WSP	LEOFF 1	WSP	
45	0.001508	0.001124	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
46	0.001616	0.001223	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
47	0.001734	0.001326	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
48	0.001860	0.001434	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
49	0.001995	0.001550	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
50	0.002138	0.001676	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
51	0.002449	0.001852	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
52	0.002667	0.002018	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
53	0.002916	0.002207	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
54	0.003196	0.002424	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
55	0.003624	0.002717	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000	0.005000
56	0.004200	0.003090	0.005273	0.005273	0.005000	0.005000	0.005273	0.005000	0.005273	0.005000	0.005273	0.005000	0.005273	0.005000	0.005273	0.005000	0.005273
57	0.004693	0.003478	0.005945	0.005945	0.005000	0.005000	0.005945	0.005000	0.005945	0.005000	0.005945	0.005000	0.005945	0.005000	0.005945	0.005000	0.005945
58	0.005273	0.003923	0.006747	0.006747	0.005055	0.005055	0.006747	0.005055	0.006747	0.005055	0.006747	0.005055	0.006747	0.005055	0.006747	0.005055	0.006747
59	0.005945	0.004441	0.007676	0.007676	0.005814	0.005814	0.007676	0.005814	0.007676	0.005814	0.007676	0.005814	0.007676	0.005814	0.007676	0.005814	0.007676
60	0.006747	0.005055	0.008757	0.008757	0.006657	0.006657	0.008757	0.006657	0.008757	0.006657	0.008757	0.006657	0.008757	0.006657	0.008757	0.006657	0.008757
61	0.007676	0.005814	0.010012	0.010012	0.007648	0.007648	0.010012	0.007648	0.010012	0.007648	0.010012	0.007648	0.010012	0.007648	0.010012	0.007648	0.010012
62	0.008757	0.006657	0.011280	0.011280	0.008619	0.008619	0.011280	0.008619	0.011280	0.008619	0.011280	0.008619	0.011280	0.008619	0.011280	0.008619	0.011280
63	0.010012	0.007648	0.012737	0.012737	0.009706	0.009706	0.012737	0.009706	0.012737	0.009706	0.012737	0.009706	0.012737	0.009706	0.012737	0.009706	0.012737
64	0.011280	0.008619	0.014409	0.014409	0.010954	0.010954	0.014409	0.010954	0.014409	0.010954	0.014409	0.010954	0.014409	0.010954	0.014409	0.010954	0.014409
65	0.012737	0.009706	0.016075	0.016075	0.012163	0.012163	0.016075	0.012163	0.016075	0.012163	0.016075	0.012163	0.016075	0.012163	0.016075	0.012163	0.016075
66	0.014409	0.010954	0.017871	0.017871	0.013445	0.013445	0.017871	0.013445	0.017871	0.013445	0.017871	0.013445	0.017871	0.013445	0.017871	0.013445	0.017871
67	0.016075	0.012163	0.019802	0.019802	0.014860	0.014860	0.019802	0.014860	0.019802	0.014860	0.019802	0.014860	0.019802	0.014860	0.019802	0.014860	0.019802
68	0.017871	0.013445	0.022206	0.022206	0.016742	0.016742	0.022206	0.016742	0.022206	0.016742	0.022206	0.016742	0.022206	0.016742	0.022206	0.016742	0.022206
69	0.019802	0.014860	0.024570	0.024570	0.018579	0.018579	0.024570	0.018579	0.024570	0.018579	0.024570	0.018579	0.024570	0.018579	0.024570	0.018579	0.024570

RP-2000 Mortality Rates			Disabled Mortality						Active, Annuitant Mortality					
(Continued)			(Continued)						(Continued)					
Combined Healthy Table			LEOFF 2		LEOFF 1		WSP		LEOFF 2		LEOFF 1		WSP	
Age	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
70	0.022206	0.016742	0.027281	0.020665	0.027281	0.020665	0.027281	0.020665	0.022206	0.016742	0.022206	0.016742	0.022206	0.016742
71	0.024570	0.018579	0.030387	0.022970	0.030387	0.022970	0.030387	0.022970	0.024570	0.018579	0.024570	0.018579	0.024570	0.018579
72	0.027281	0.020665	0.033900	0.025458	0.033900	0.025458	0.033900	0.025458	0.027281	0.020665	0.027281	0.020665	0.027281	0.020665
73	0.030387	0.022970	0.037834	0.028106	0.037834	0.028106	0.037834	0.028106	0.030387	0.022970	0.030387	0.022970	0.030387	0.022970
74	0.033900	0.025458	0.042169	0.030966	0.042169	0.030966	0.042169	0.030966	0.033900	0.025458	0.033900	0.025458	0.033900	0.025458
75	0.037834	0.028106	0.046906	0.034105	0.046906	0.034105	0.046906	0.034105	0.037834	0.028106	0.037834	0.028106	0.037834	0.028106
76	0.042169	0.030966	0.052123	0.037595	0.052123	0.037595	0.052123	0.037595	0.042169	0.030966	0.042169	0.030966	0.042169	0.030966
77	0.046906	0.034105	0.057927	0.041506	0.057927	0.041506	0.057927	0.041506	0.046906	0.034105	0.046906	0.034105	0.046906	0.034105
78	0.052123	0.037595	0.064368	0.045879	0.064368	0.045879	0.064368	0.045879	0.052123	0.037595	0.052123	0.037595	0.052123	0.037595
79	0.057927	0.041506	0.072041	0.050780	0.072041	0.050780	0.072041	0.050780	0.057927	0.041506	0.057927	0.041506	0.057927	0.041506
80	0.064368	0.045879	0.080486	0.056294	0.080486	0.056294	0.080486	0.056294	0.064368	0.045879	0.064368	0.045879	0.064368	0.045879
81	0.072041	0.050780	0.089718	0.062506	0.089718	0.062506	0.089718	0.062506	0.072041	0.050780	0.072041	0.050780	0.072041	0.050780
82	0.080486	0.056294	0.099779	0.069517	0.099779	0.069517	0.099779	0.069517	0.080486	0.056294	0.080486	0.056294	0.080486	0.056294
83	0.089718	0.062506	0.110757	0.077446	0.110757	0.077446	0.110757	0.077446	0.089718	0.062506	0.089718	0.062506	0.089718	0.062506
84	0.099779	0.069517	0.122797	0.086376	0.122797	0.086376	0.122797	0.086376	0.099779	0.069517	0.099779	0.069517	0.099779	0.069517
85	0.110757	0.077446	0.136043	0.096337	0.136043	0.096337	0.136043	0.096337	0.110757	0.077446	0.110757	0.077446	0.110757	0.077446
86	0.122797	0.086376	0.150590	0.107303	0.150590	0.107303	0.150590	0.107303	0.122797	0.086376	0.122797	0.086376	0.122797	0.086376
87	0.136043	0.096337	0.166420	0.119154	0.166420	0.119154	0.166420	0.119154	0.136043	0.096337	0.136043	0.096337	0.136043	0.096337
88	0.150590	0.107303	0.183408	0.131682	0.183408	0.131682	0.183408	0.131682	0.150590	0.107303	0.150590	0.107303	0.150590	0.107303
89	0.166420	0.119154	0.199769	0.144604	0.199769	0.144604	0.199769	0.144604	0.166420	0.119154	0.166420	0.119154	0.166420	0.119154
90	0.183408	0.131682	0.216605	0.157618	0.216605	0.157618	0.216605	0.157618	0.183408	0.131682	0.183408	0.131682	0.183408	0.131682
91	0.199769	0.144604	0.233662	0.170433	0.233662	0.170433	0.233662	0.170433	0.199769	0.144604	0.199769	0.144604	0.199769	0.144604
92	0.216605	0.157618	0.250693	0.182799	0.250693	0.182799	0.250693	0.182799	0.216605	0.157618	0.216605	0.157618	0.216605	0.157618
93	0.233662	0.170433	0.267491	0.194509	0.267491	0.194509	0.267491	0.194509	0.233662	0.170433	0.233662	0.170433	0.233662	0.170433
94	0.250693	0.182799	0.283905	0.205379	0.283905	0.205379	0.283905	0.205379	0.250693	0.182799	0.250693	0.182799	0.250693	0.182799

**RP-2000 Mortality Rates**

(Continued)

Combined Healthy Table

Age Offset (Years) -->  
 Minimum Probability -->

**Disabled Mortality**

(Continued)

**Active, Annuitant Mortality**

(Continued)

Age	LEOFF 2		LEOFF 1		WSP		LEOFF 2		LEOFF 1		WSP	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
95	0.267491	0.194509	0.299852	0.215240	0.299852	0.215240	0.299852	0.215240	0.267491	0.194509	0.267491	0.194509
96	0.283905	0.205379	0.315296	0.223947	0.315296	0.223947	0.315296	0.223947	0.283905	0.205379	0.283905	0.205379
97	0.299852	0.215240	0.330207	0.231387	0.330207	0.231387	0.330207	0.231387	0.299852	0.215240	0.299852	0.215240
98	0.315296	0.223947	0.344556	0.237467	0.344556	0.237467	0.344556	0.237467	0.315296	0.223947	0.315296	0.223947
99	0.330207	0.231387	0.358628	0.244834	0.358628	0.244834	0.358628	0.244834	0.330207	0.231387	0.330207	0.231387
100	0.344556	0.237467	0.371685	0.254498	0.371685	0.254498	0.371685	0.254498	0.344556	0.237467	0.344556	0.237467
101	0.358628	0.244834	0.383040	0.266044	0.383040	0.266044	0.383040	0.266044	0.358628	0.244834	0.358628	0.244834
102	0.371685	0.254498	0.392003	0.279055	0.392003	0.279055	0.392003	0.279055	0.371685	0.254498	0.371685	0.254498
103	0.383040	0.266044	0.397886	0.293116	0.397886	0.293116	0.397886	0.293116	0.383040	0.266044	0.383040	0.266044
104	0.392003	0.279055	0.400000	0.307811	0.400000	0.307811	0.400000	0.307811	0.392003	0.279055	0.392003	0.279055
105	0.397886	0.293116	0.400000	0.322725	0.400000	0.322725	0.400000	0.322725	0.397886	0.293116	0.397886	0.293116
106	0.400000	0.307811	0.400000	0.337441	0.400000	0.337441	0.400000	0.337441	0.400000	0.307811	0.400000	0.307811
107	0.400000	0.322725	0.400000	0.351544	0.400000	0.351544	0.400000	0.351544	0.400000	0.322725	0.400000	0.322725
108	0.400000	0.337441	0.400000	0.364617	0.400000	0.364617	0.400000	0.364617	0.400000	0.337441	0.400000	0.337441
109	0.400000	0.351544	0.400000	0.376246	0.400000	0.376246	0.400000	0.376246	0.400000	0.351544	0.400000	0.351544
110	0.400000	0.364617	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
110	0.400000	0.364617	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000

Age	Service Retirement				Disablement				Ratio of Survivors Selecting Annuities*					
	LEOFF 2		LEOFF 1		LEOFF 2		LEOFF 1		LEOFF 2		LEOFF 1		WSP	
	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	0.000850	0.000022	0.001000	0.001000	0.000850	0.000022	0.001000	0.001000	0.00	0.00
21	0.00	0.00	0.00	0.00	0.000850	0.000022	0.001000	0.001000	0.000850	0.000022	0.001000	0.001000	0.00	0.00
22	0.00	0.00	0.00	0.00	0.000850	0.000022	0.001000	0.001000	0.000850	0.000022	0.001000	0.001000	0.00	0.00
23	0.00	0.00	0.00	0.00	0.000850	0.000022	0.001000	0.001000	0.000850	0.000022	0.001000	0.001000	0.00	0.00
24	0.00	0.00	0.00	0.00	0.000850	0.000022	0.001000	0.001000	0.000850	0.000022	0.001000	0.001000	0.00	0.00
25	0.00	0.00	0.00	0.00	0.000850	0.000022	0.001000	0.001000	0.000850	0.000022	0.001000	0.001000	0.00	0.00
26	0.00	0.00	0.00	0.00	0.000850	0.000024	0.002397	0.001000	0.000850	0.000024	0.002397	0.001000	0.00	0.00
27	0.00	0.00	0.00	0.00	0.000850	0.000026	0.003793	0.001000	0.000850	0.000026	0.003793	0.001000	0.00	0.00
28	0.00	0.00	0.00	0.00	0.000850	0.000028	0.005187	0.001000	0.000850	0.000028	0.005187	0.001000	0.00	0.00
29	0.00	0.00	0.00	0.00	0.000850	0.000031	0.006578	0.001000	0.000850	0.000031	0.006578	0.001000	0.00	0.00
30	0.00	0.00	0.00	0.00	0.000850	0.000033	0.007968	0.001000	0.000850	0.000033	0.007968	0.001000	0.00	0.00
31	0.00	0.00	0.00	0.00	0.000850	0.000035	0.009356	0.001000	0.000850	0.000035	0.009356	0.001000	0.00	0.00
32	0.00	0.00	0.00	0.00	0.000850	0.000037	0.010742	0.001000	0.000850	0.000037	0.010742	0.001000	0.00	0.00
33	0.00	0.00	0.00	0.00	0.000850	0.000039	0.012126	0.001000	0.000850	0.000039	0.012126	0.001000	0.00	0.00
34	0.00	0.00	0.00	0.00	0.000850	0.000042	0.013508	0.001000	0.000850	0.000042	0.013508	0.001000	0.00	0.00
35	0.00	0.00	0.00	0.00	0.000850	0.000044	0.014888	0.001000	0.000850	0.000044	0.014888	0.001000	0.00	0.00
36	0.00	0.00	0.00	0.00	0.000850	0.000050	0.016267	0.001000	0.000850	0.000050	0.016267	0.001000	0.00	0.00
37	0.00	0.00	0.00	0.00	0.000850	0.000057	0.019033	0.001000	0.000850	0.000057	0.019033	0.001000	0.00	0.00
38	0.00	0.00	0.00	0.00	0.000850	0.000066	0.020514	0.001000	0.000850	0.000066	0.020514	0.001000	0.00	0.00
39	0.00	0.00	0.00	0.00	0.000850	0.000077	0.021994	0.001000	0.000850	0.000077	0.021994	0.001000	0.00	0.00
40	0.00	0.00	0.00	0.00	0.000850	0.000088	0.023471	0.001000	0.000850	0.000088	0.023471	0.001000	0.00	0.60
41	0.00	0.00	0.00	0.00	0.000850	0.000098	0.024946	0.001000	0.000850	0.000098	0.024946	0.001000	0.00	0.60
42	0.00	0.00	0.00	0.00	0.000850	0.000109	0.026419	0.001000	0.000850	0.000109	0.026419	0.001000	0.00	0.60
43	0.00	0.00	0.00	0.00	0.000850	0.000123	0.027889	0.001000	0.000850	0.000123	0.027889	0.001000	0.00	0.60
44	0.00	0.00	0.00	0.00	0.000850	0.000138	0.030642	0.001000	0.000850	0.000138	0.030642	0.001000	0.00	0.60
45	0.00	0.00	0.00	0.31	0.000850	0.000153	0.042372	0.001000	0.000850	0.000153	0.042372	0.001000	0.00	0.60
46	0.00	0.00	0.00	0.31	0.000850	0.000197	0.048661	0.001000	0.000850	0.000197	0.048661	0.001000	0.00	0.60
47	0.00	0.00	0.00	0.31	0.000850	0.000256	0.054909	0.001000	0.000850	0.000256	0.054909	0.001000	0.00	0.60
48	0.00	0.00	0.00	0.31	0.000850	0.000328	0.061118	0.001000	0.000850	0.000328	0.061118	0.001000	0.00	0.60
49	0.00	0.00	0.00	0.31	0.000850	0.000424	0.067287	0.001000	0.000850	0.000424	0.067287	0.001000	0.00	0.60
50	0.10	0.09	0.09	0.31	0.000850	0.000547	0.073417	0.001000	0.000850	0.000547	0.073417	0.001000	0.25	0.60

\*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				Ratio of Survivors Selecting Annuities* (Continued)					
Age	LEOFF 2		LEOFF 1		WSP		Duty	LEOFF 2		LEOFF 1		WSP	
	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female		Male & Female	Male & Female	Male & Female	Male & Female	Male & Female	Male & Female
51	0.10	0.07	0.08	0.08	0.23	0.23	0.000850	0.000628	0.079508	0.001000	0.25	0.60	0.60
52	0.10	0.08	0.08	0.08	0.23	0.23	0.000850	0.000722	0.085561	0.001000	0.25	0.60	0.60
53	0.16	0.08	0.08	0.08	0.23	0.23	0.000850	0.000851	0.091576	0.001000	0.25	0.60	0.60
54	0.19	0.10	0.10	0.10	0.23	0.23	0.000850	0.000951	0.097553	0.001000	0.25	0.60	0.60
55	0.24	0.16	0.16	0.16	0.23	0.23	0.000850	0.000951	0.103493	0.001000	0.25	0.60	0.60
56	0.25	0.16	0.16	0.16	0.28	0.28	0.000850	0.000951	0.109395	0.001000	0.25	0.60	0.60
57	0.25	0.16	0.16	0.16	0.28	0.28	0.000850	0.000951	0.115262	0.001000	0.25	0.60	0.60
58	0.33	0.23	0.23	0.23	0.28	0.28	0.000850	0.000951	0.121663	0.001000	0.25	0.60	0.60
59	0.33	0.23	0.23	0.23	0.28	0.28	0.000850	0.000951	0.121663	0.001000	0.25	0.60	0.60
60	0.33	0.23	0.23	0.23	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
61	0.37	0.28	0.28	0.28	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
62	0.37	0.28	0.28	0.28	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
63	0.37	0.28	0.28	0.28	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
64	0.48	0.40	0.40	0.40	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
65	1.00	1.00	1.00	1.00	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
66	1.00	1.00	1.00	1.00	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
67	1.00	1.00	1.00	1.00	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
68	1.00	1.00	1.00	1.00	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
69	1.00	1.00	1.00	1.00	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
70	1.00	1.00	1.00	1.00	1.00	1.00	0.000850	0.000951	0.121663	0.001000	0.50	0.60	0.60
71	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
74	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
78	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
79	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60
80+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.50	0.60	0.60

\*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*						Salary Scale					
	LEOFF 2		LEOFF 1		WSP		LEOFF 2		LEOFF 1		WSP		LEOFF 2		LEOFF 1		WSP	
	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
0	0.1034	0.1043	0.0243	0.0243	0.00	N/A	N/A	0.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	0.0460	0.0469	0.0243	0.0243	0.00	N/A	N/A	0.00	0.00	N/A	N/A	11.70%	1.810	1.810	1.810	1.810	6.00%	1.678
2	0.0228	0.0237	0.0243	0.0243	0.00	N/A	N/A	0.00	0.00	N/A	N/A	8.10%	1.621	1.621	1.621	1.621	6.00%	1.583
3	0.0199	0.0208	0.0243	0.0243	0.00	N/A	N/A	0.00	0.00	N/A	N/A	6.60%	1.499	1.499	1.499	1.499	6.00%	1.493
4	0.0189	0.0198	0.0243	0.0243	0.00	N/A	N/A	0.00	0.00	N/A	N/A	4.50%	1.406	1.406	1.406	1.406	6.00%	1.409
5	0.0185	0.0194	0.0138	0.0138	0.15	N/A	N/A	0.15	0.15	N/A	N/A	3.20%	1.346	1.346	1.346	1.346	6.00%	1.329
6	0.0185	0.0194	0.0138	0.0138	0.15	N/A	N/A	0.15	0.15	N/A	N/A	2.50%	1.304	1.304	1.304	1.304	6.00%	1.254
7	0.0185	0.0194	0.0138	0.0138	0.15	N/A	N/A	0.15	0.15	N/A	N/A	2.20%	1.272	1.272	1.272	1.272	1.30%	1.183
8	0.0158	0.0167	0.0138	0.0138	0.15	N/A	N/A	0.15	0.15	N/A	N/A	2.00%	1.245	1.245	1.245	1.245	1.30%	1.168
9	0.0158	0.0167	0.0138	0.0138	0.15	N/A	N/A	0.15	0.15	N/A	N/A	2.00%	1.221	1.221	1.221	1.221	1.30%	1.153
10	0.0158	0.0167	0.0087	0.0087	0.15	N/A	N/A	0.15	0.15	N/A	N/A	2.00%	1.197	1.197	1.197	1.197	1.30%	1.138
11	0.0133	0.0142	0.0087	0.0087	0.15	N/A	N/A	0.15	0.15	N/A	N/A	1.90%	1.173	1.173	1.173	1.173	1.30%	1.123
12	0.0133	0.0142	0.0087	0.0087	0.15	N/A	N/A	0.15	0.15	N/A	N/A	1.80%	1.151	1.151	1.151	1.151	1.30%	1.109
13	0.0133	0.0142	0.0087	0.0087	0.15	N/A	N/A	0.15	0.15	N/A	N/A	1.70%	1.131	1.131	1.131	1.131	1.30%	1.095
14	0.0090	0.0099	0.0087	0.0087	0.15	N/A	N/A	0.15	0.15	N/A	N/A	1.60%	1.112	1.112	1.112	1.112	1.30%	1.081
15	0.0090	0.0099	0.0064	0.0064	0.15	N/A	N/A	0.15	0.15	N/A	N/A	1.60%	1.095	1.095	1.095	1.095	1.30%	1.067
16	0.0090	0.0099	0.0064	0.0064	0.15	N/A	N/A	0.15	0.15	N/A	N/A	1.60%	1.077	1.077	1.077	1.077	1.30%	1.053
17	0.0061	0.0070	0.0064	0.0064	0.15	N/A	N/A	0.15	0.15	N/A	N/A	1.60%	1.060	1.060	1.060	1.060	1.30%	1.040
18	0.0061	0.0070	0.0064	0.0064	0.35	N/A	N/A	0.35	0.35	N/A	N/A	1.60%	1.044	1.044	1.044	1.044	1.30%	1.026
19	0.0061	0.0070	0.0064	0.0064	0.35	N/A	N/A	0.35	0.35	N/A	N/A	1.40%	1.027	1.027	1.027	1.027	1.30%	1.013
20	0.0061	0.0070	0.0019	0.0019	0.75	N/A	N/A	0.75	0.75	N/A	N/A	1.30%	1.013	1.013	1.013	1.013	0.00%	1.000
21	0.0061	0.0070	0.0019	0.0019	1.00	N/A	N/A	1.00	1.00	N/A	N/A	0.00%	1.000	1.000	1.000	1.000	0.00%	1.000
22	0.0061	0.0070	0.0019	0.0019	1.00	N/A	N/A	1.00	1.00	N/A	N/A	0.00%	1.000	1.000	1.000	1.000	0.00%	1.000
23	0.0061	0.0070	0.0019	0.0019	1.00	N/A	N/A	1.00	1.00	N/A	N/A	0.00%	1.000	1.000	1.000	1.000	0.00%	1.000
24	0.0061	0.0070	0.0019	0.0019	1.00	N/A	N/A	1.00	1.00	N/A	N/A	0.00%	1.000	1.000	1.000	1.000	0.00%	1.000

\*This assumption is the ratio of terminating members selecting an annuity in lieu of a return of contributions benefit.

Service Years	Termination (Continued)						Percent Vested* (Continued)						Salary Scale (Continued)					
	LEOFF 2		LEOFF 1		WSP		LEOFF 2		LEOFF 1		WSP		LEOFF 2		LEOFF 1		WSP	
	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
	% Increase	Ratio	% Increase	Ratio	% Increase	Ratio	% Increase	Ratio	% Increase	Ratio	% Increase	Ratio	% Increase	Ratio	% Increase	Ratio	% Increase	Ratio
25	0.0061	0.0070	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	25
26	0.0061	0.0070	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	26
27	0.0061	0.0070	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	27
28	0.0061	0.0070	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	28
29	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	29
30	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	30
31	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	31
32	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	32
33	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	33
34	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	34
35	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	35
36	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	36
37	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	37
38	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	38
39	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	39
40	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	40
41	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	41
42	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	42
43	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	43
44	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	44
45	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	45
46	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	46
47	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	47
48	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	48
49	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	49
50	0.0000	0.0000	0.0000	0.0000	1.00	N/A	1.00	1.00	1.00	0.00%	1.000	0.00%	1.000	0.00%	1.000	0.00%	1.000	50

\*This assumption is the ratio of terminating members selecting an annuity in lieu of a return of contributions benefit.

**Early Retirement Reduction Factors**

Years Early	Plan 2/3, PERS 1 TrmVst	LEOFF2, PERS1, TRS1, WSP TrmVst	Plan 2/3 Subsidized 3%*
0	1.0000	1.0000	1.00
1	0.9100	0.9200	0.97
2	0.8200	0.8400	0.94
3	0.7300	0.7600	0.91
4	0.6700	0.7100	0.88
5	0.6100	0.6600	0.85
6	0.5500	0.6100	0.82
7	0.4900	0.5600	0.79
8	0.4300	0.5100	0.76
9	0.4000	0.4700	0.73
10	0.3700	0.4300	0.70
11	0.3400	0.3900	N/A
12	0.3100	0.3500	N/A
13	0.2800	0.3100	N/A
14	0.2600	0.2900	N/A
15	0.2400	0.2700	N/A
16	0.2200	0.2500	N/A
17	0.2000	0.2300	N/A
18	0.1800	0.2100	N/A
19	0.1700	0.2000	N/A
20	0.1600	0.1900	N/A
21	0.1500	0.1800	N/A
22	0.1400	0.1700	N/A
23	0.1300	0.1600	N/A
24	0.1200	0.1500	N/A

*TrmVst=Terminated Vested.*

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

*All other plan 2/3 members must be at least 55 with 30 years of service to qualify.*

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**Early Retirement Reduction Factors**


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*(Continued)*

Years Early	Plan 2/3, PERS 1 TrmVst	LEOFF2, PERS1, TRS1, WSP TrmVst	Plan 2/3 Subsidized 3%*
25	0.1100	0.1400	N/A
26	0.1000	0.1300	N/A
27	0.1000	0.1200	N/A
28	0.1000	0.1100	N/A
29	0.1000	0.1000	N/A
30	0.1000	0.1000	N/A
31	0.1000	0.1000	N/A
32	0.1000	0.1000	N/A
33	0.1000	0.1000	N/A
34	0.1000	0.1000	N/A
35	0.1000	0.1000	N/A
36	0.1000	0.1000	N/A
37	0.1000	0.1000	N/A
38	0.1000	0.1000	N/A
39	0.1000	0.1000	N/A
40	0.1000	0.1000	N/A
41	0.1000	0.1000	N/A
42	0.1000	0.1000	N/A
43	0.1000	0.1000	N/A
44	0.1000	0.1000	N/A
45	0.1000	0.1000	N/A
46	0.1000	0.1000	N/A
47	0.1000	0.1000	N/A
48	0.1000	0.1000	N/A
49	0.1000	0.1000	N/A

*TrmVst=Terminated Vested.**\*LEOFF 2 members must be at least age 50 with 20 or more years of service to qualify.**All other plan 2/3 members must be at least 55 with 30 years of service to qualify.*

<b>Portability Load</b>	
LEOFF 2	0.1%
LEOFF 1	N/A
WSP	0.0%

*Reflects portability provisions for each plan.*

<b>Certain and Life Annuities: Years Certain</b>	
LEOFF 2	5
LEOFF 1	N/A
WSP	N/A

<b>Member/Beneficiary Age Difference (In Years)</b>		
	Male Member	Female Member
LEOFF 2	4	(4)
LEOFF 1	4	(4)
WSP	3	(2)

*Age difference is Member age minus Beneficiary age.*

<b>Duty-Related Death Assumption</b>	
LEOFF 2	0.02%
LEOFF 1*	8.00%
WSP	0.02%

*\* For LEOFF 1 we assume a percentage of all deaths are duty related.  
A flat duty-death rate for all ages is used for LEOFF 2 and WSP.*

## 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/AFC	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: accrued benefit, minimum 10% of AFC
COLA	Lesser of CPI* or 3%
Minimum Benefit per Month / YOS	n/a
Gain-Sharing Benefit Provisions	n/a
Changes in Plan Provisions Since Last Valuation	Disability (C 451 L 05); EMTs addition (C 459 L 05)
Benefits not Included in This Valuation	None

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

### Age/Service Distribution

Age and Service Distribution of Active Members (Number of Actives and Average Salary)																
LEOFF Plan 2: 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	33	54	36	14	2	1	0	0	0	0	0	0	0	0	140	
	\$42,045	\$45,567	\$50,820	\$57,323	\$66,825	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$47,710	
25-29	76	245	222	248	210	270	0	0	0	0	0	0	0	0	1,271	
	\$44,223	\$46,250	\$52,730	\$57,682	\$60,264	\$65,653	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$55,928	
30-34	72	182	211	265	242	1,385	306	1	0	0	0	0	0	0	2,664	
	\$44,247	\$48,648	\$54,576	\$56,832	\$61,099	\$66,400	\$70,605	*	\$0	\$0	\$0	\$0	\$0	\$0	\$62,712	
35-39	36	110	94	167	139	1,115	1,233	324	1	0	0	0	0	0	3,219	
	\$44,815	\$49,485	\$56,809	\$56,723	\$62,671	\$67,385	\$72,055	\$77,538	*	\$0	\$0	\$0	\$0	\$0	\$68,270	
40-44	14	56	44	73	75	512	896	930	288	8	0	0	0	0	2,896	
	\$46,896	\$52,536	\$59,843	\$57,587	\$61,709	\$66,484	\$72,520	\$76,623	\$81,184	\$83,797	\$0	\$0	\$0	\$0	\$72,304	
45-49	7	32	27	27	26	205	444	618	783	300	0	0	0	0	2,469	
	\$42,755	\$53,309	\$69,328	\$58,564	\$65,772	\$63,594	\$71,948	\$76,234	\$81,776	\$84,181	\$0	\$0	\$0	\$0	\$76,366	
50-54	9	18	23	11	16	115	166	291	506	368	0	0	0	0	1,523	
	\$45,753	\$60,295	\$70,891	\$67,758	\$62,638	\$63,170	\$71,078	\$75,075	\$79,202	\$79,439	\$0	\$0	\$0	\$0	\$75,571	
55-59	1	15	9	9	8	35	47	86	146	103	1	0	0	0	460	
	*	\$54,541	\$70,747	\$76,249	\$74,925	\$64,722	\$70,697	\$72,309	\$76,275	\$81,173	*	\$0	\$0	\$0	\$74,263	
60-64	1	3	5	2	0	10	24	26	22	11	0	0	0	0	104	
	*	\$76,242	\$41,464	\$61,120	\$0	\$79,461	\$63,751	\$75,361	\$68,403	\$73,955	\$0	\$0	\$0	\$0	\$69,402	
65-69	1	0	0	0	0	0	2	4	0	0	0	0	0	0	7	
	*	\$0	\$0	\$0	\$0	\$0	\$50,968	\$63,679	\$0	\$0	\$0	\$0	\$0	\$0	\$56,601	
70 & Over	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
	\$0	\$0	\$0	\$0	\$0	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	*	
<b>Total</b>	<b>250</b>	<b>715</b>	<b>671</b>	<b>816</b>	<b>718</b>	<b>3,648</b>	<b>3,119</b>	<b>2,280</b>	<b>1,746</b>	<b>790</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14,754</b>	
	\$44,232	\$48,768	\$55,694	\$57,573	\$61,596	\$66,417	\$71,879	\$76,258	\$80,302	\$81,434	*	\$0	\$0	\$0	\$69,098	
<b>Average:</b>	<b>Age</b>	<b>40.1</b>	<b>Number of Participants:</b>			<b>Vested</b>	<b>11,231</b>	<b>Males</b>	<b>13,548</b>	<b>Early Retirement Eligible:</b>	<b>615</b>					
	<b>Service</b>	<b>11.3</b>	<b>Not Vested</b>			<b>3,523</b>	<b>Females</b>	<b>1,206</b>	<b>Normal Retirement Eligible:</b>	<b>951</b>						

\*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 All Annuitant Members  
(Number of All Annuitant Members and Average Monthly Benefit)

LEOFF Plan 2: 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	1	4	4	0	4	0	0	0	0	0	0	0	0	0	13
	*	\$1,060	\$831	\$0	\$371	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$847
50-54	28	24	6	6	4	0	1	0	0	0	0	0	0	0	69
	\$2,045	\$1,978	\$1,589	\$1,415	\$1,760	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,888
55-59	17	33	44	34	36	3	0	1	0	0	0	0	0	0	168
	\$2,153	\$1,973	\$1,543	\$1,555	\$1,384	\$1,029	\$0	*	\$0	\$0	\$0	\$0	\$0	\$0	\$1,640
60-64	9	15	16	8	7	36	1	0	0	0	0	0	0	0	92
	\$2,016	\$1,427	\$1,463	\$2,412	\$1,523	\$965	*	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,397
65-69	4	3	7	3	7	24	9	0	0	0	0	0	0	0	57
	\$1,765	\$933	\$1,533	\$1,040	\$1,384	\$1,032	\$622	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,118
70-74	0	0	0	0	1	12	7	1	1	0	0	0	0	0	22
	\$0	\$0	\$0	\$0	*	\$1,349	\$951	*	\$0	\$0	\$0	\$0	\$0	\$0	\$1,106
75-79	0	0	0	0	0	0	4	5	0	0	0	0	0	0	9
	\$0	\$0	\$0	\$0	\$0	\$0	\$891	\$680	\$0	\$0	\$0	\$0	\$0	\$0	\$774
80-84	0	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	\$0	*
85-89	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	\$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>59</b>	<b>79</b>	<b>78</b>	<b>51</b>	<b>59</b>	<b>75</b>	<b>22</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>432</b>
	\$2,051	\$1,785	\$1,480	\$1,643	\$1,352	\$1,050	\$780	\$567	*	\$0	\$0	\$0	\$0	\$0	\$1,485

Average: Age 59.5 Years Retired 3.5 Males 386 Females 46

\*Monthly benefit omitted for privacy reasons



## Historical Data

Historical Data						
(Dollars in millions)	2004	2003	2002	2001 <sup>1</sup>	2000	1999
<b>Contribution Information</b>						
Employer Rate	4.57%	4.32%	3.84%	3.03%	2.41%	3.46%
State Rate	3.03%	2.88%	2.57%	2.02%	1.61%	2.31%
Employee Rate	7.60%	7.20%	6.41%	5.05%	4.02%	5.77%
<b>Funded Status</b>						
Credited Projected Liability	\$2,521	\$2,194	\$1,937	\$1,668	\$1,528	\$1,408
Market Value of Assets	\$2,984	\$2,541	\$2,136	\$2,210	\$2,378	\$2,288
Actuarial Value of Assets	\$2,947	\$2,740	\$2,646	\$2,576	\$2,459	\$2,163
Unfunded Liability	(\$426)	(\$547)	(\$709)	(\$907)	(\$931)	(\$755)
Funded Ratio	116.89%	124.91%	136.62%	154.00%	161.00%	154.00%
<b>Participant Data</b>						
Number of Actives	14,754	14,560	14,011	13,585	13,133	12,713
Total Annual Salaries	\$1,020	\$967	\$902	\$831	\$780	\$725
Number of Terminated Vested	521	439	376	303	248	216
Number of Terminated, Not Vested	1,233	1,186	1,137	1,051	940	875
Number of Retirees and Beneficiaries	432	316	244	184	143	100
Total Annual Benefits	\$8	\$5	\$3	\$2	\$2	\$1
<b>Assumptions</b>						
Valuation Interest Rate	8.00%	8.00%	8.00%	5.90%	8.00%	7.50%
Salary Increase	7.60%	7.70%	7.80%	5.80%	4.00%	4.00%
Inflation <sup>2</sup>	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Growth in Membership	1.25%	1.25%	1.25%	0.94%	1.25%	1.25%
<b>Actuarial Experience</b>						
Return on Market Value	13.64%	15.13%	(6.31%)	(9.77%)	0.37%	18.54%
Return on Actuarial Value	4.11%	0.60%	0.10%	2.00%	9.80%	16.60%
Salary Increase	5.20%	4.80%	7.00%	4.60%	5.90%	3.90%
Inflation	1.41%	1.81%	3.55%	3.75%	3.10%	2.63%
Growth in Membership	0.33%	2.59%	1.73%	1.83%	1.22%	4.33%
COLA <sup>3</sup>	3.00%	3.00%	3.00%	3.00%	3.00%	2.63%-3%

<sup>1</sup>For the 2001 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 that has been 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 will result 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). It is common for actuaries to select an actuarial valuation method that smoothes the effects of short-term volatility in the market value of assets.

**Entry Age Normal (EAN) Funding Method:** The EAN funding method is a standard actuarial funding method. The annual cost of benefits under EAN 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.

**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 is the total normal cost of the plan reduced by employee contributions.

**Present value of credited projected benefits:** The actuarial accrued liability computed under the Projected Unit Credit (PUC) funding method.

**Present value of fully projected benefits:** Computed by projecting the total future benefit cash flow from the plan, using actuarial assumptions (i.e., probability of death, retirement, salary increases, etc.), and then discounting the cash flow to the valuation date using the valuation interest rate.

**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 is the estimated present value of projected benefits to be earned in the current plan year.

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

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