

Washington State

**Volunteer Fire Fighters' and
Reserve Officers'
Relief and Pension Fund**



2009 Actuarial Valuation Report

As of June 30, 2009



Board for Volunteer Fire Fighters and Reserve Officers

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A special thank you to Elizabeth Hyde for the use of her photographs "Number 2" and "Engine One."

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Volunteer Fire Fighters' and Reserve Officers' Relief and Pension Fund Actuarial Valuation Report As of June 30, 2009 October 2010

As required under RCW 41.24.320, this report documents the results of the actuarial valuation we performed on the Volunteer Fire Fighters' and Reserve Officers' Relief and Pension Fund of Washington.

Our primary purpose for performing this valuation is to determine the pension contribution requirements for the plan as of June 30, 2009. This valuation also provides information on the funding progress and developments in the plan over the past year. We organized the report into the following four sections:

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

The Summary of Key Results provides a high-level summary of the valuation results. The next two sections of the report provide detailed actuarial asset and liability information and membership data. The Appendices summarize the actuarial assumptions and methods, major plan provisions, and supporting information used to perform this valuation.

Please submit any questions concerning this report to our regular address or our e-mail address at 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
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Section One



Summary of Key Results

Intended Use

The purpose for performing the Volunteer Fire Fighters' and Reserve Officers' (VFF) Relief and Pension Fund Actuarial Valuation (VAVR) is to:

- Develop adequate contribution rates to pre-fund the pension benefits.
- Measure the pension system's funding progress.
- Compare experience with assumptions used.
- Detect significant demographic changes.
- Highlight significant plan, assumption, and method changes.

We don't intend this report to satisfy the accounting requirements under the Governmental Accounting Standards Board (GASB) rules.

Contribution Rates

We determine the pension contribution rate by performing an actuarial valuation. This rate includes the normal cost rate, plus a rate to amortize the Unfunded Actuarial Accrued Liability (UAAL). Consistent with current Board funding policy, we determine the relief rate and the operating expense rate based on the actual annual costs from the prior year. Pension costs are allocated to pension members while relief and operating costs are allocated to all members.

Per Person Annual Contributions		
Valuation Year	2008	2009
Pension Rate		
Employee	\$30	\$30
Employer	30	30
State	73	61
Normal Cost Rate	\$133	\$121
State UAAL Rate	(\$74)	(\$26)
Total Pension Rate	\$59	\$95
Relief Rate		
Employer	\$30	\$30
State	116	109
Relief Rate	\$146	\$139
Operating Expenses		
Administration and Expenses	\$37	\$37

Actuarial Liabilities

Actuarial Liabilities		
(Dollars in Millions)	2008	2009
Present Value of Fully Projected Benefits	\$159.6	\$168.7
Unfunded Actuarial Accrued Liability	(7.8)	(2.7)
Entry Age Normal Accrued Liability	\$153.3	\$163.0
Valuation Interest Rate	7.00%	7.00%

Assets

Plan Assets		
(Dollars in Millions)	2008	2009
Market Value of Assets	\$166.4	\$135.1
Actuarial Value of Assets	161.1	165.7
Contributions*	0.7	0.6
Disbursements	9.9	10.1
Investment Return	0.0	(27.6)
Other**	\$5.5	\$5.7
Rate of Return on Assets***	(0.07%)	(17.09%)

* Includes Employee and Employer contributions.

** Includes the Fire Insurance Premium Tax, Disability Fees, and Administrative Expenses.

*** This is the time-weighted rate of return on the Market Value of Assets. We use the Actuarial Value of Assets to determine contribution rates.

Funded Status

The funded status of the plan compares the plan's assets to the earned pension liabilities of its members. We determine this by comparing the Actuarial Value of Assets (AVA) to the Entry Age Normal (EAN) accrued liabilities calculated using the long-term interest rate assumption.

Funded Status		
(Dollars in Millions)	2008	2009
a. Entry Age Normal Accrued Liability	\$153.3	\$163.0
b. Actuarial Value of Assets	161.1	165.7
c. Unfunded Liability (a-b)	(\$7.8)	(\$2.7)
d. Funded Ratio (b/a)	105%	102%

Note: Totals may not agree due to rounding.

Participant Data

Changes in the size and composition of plan membership play a major role in the results of the valuation. We observed the following changes in plan membership from the previous valuation to the current valuation.

Changes in Participant Data			
	2008	2009	Increase
Number of Active Members in Relief Plan	13,393	13,417	0%
Number of Active Members in Pension Plan*	10,842	10,758	(1%)
Percent of Volunteers Covered by Pension Plan	81%	80%	(1%)
Average Age	41.5	41.7	0%
Average Years of Service	10.2	10.2	0%
Number of Retirees/Beneficiaries	3,575	3,612	1%
Number of Terminated Vested Members	5,866	6,059	3%
Number of Survivors (Line of Duty)	17	14	(18%)
Number of Members with Permanent Disabilities	13	13	0%

*Includes 26 Emergency Medical Technicians and 234 Reserve Law Enforcement Officers in 2009.

Actuarial Gain / Loss

This table describes the various sources that contribute to the change in contribution rates from one year to the next. For each source we compare the actual amount experienced by the plan to the amount we assumed. Any difference will increase or decrease the contribution requirements accordingly. The changes in contribution rates shown in the table below represent the total Pension Rate, or the sum of the changes to the Normal Cost rate and the UAAL. The Actuarial Gain / Loss tables in the Actuarial Exhibits section of the report provide further detail.

Change in Pension Contribution Rate by Source	
2008 Pension Rate	\$ 58.95
Liability (Gains) / Losses	0.84
Assets (Gains) / Losses*	(15.21)
Incremental Changes (Gains) / Losses	(9.41)
Other (Gains) / Losses	4.84
Total Change	\$ (18.94)
2009 Preliminary Pension Rate	\$ 40.00
Laws of 2010	\$ 55.14
2009 Adjusted Pension Rate	\$ 95.14

* Includes a gain from the receipt of the fire insurance premium tax. Contributions in excess of actuarial requirements for the plan's pension liabilities produce actuarial gains.

Relief Benefits Not Reflected in this Valuation

Consistent with current Board for Volunteer Fire Fighters (the Board) funding policy, we based the costs for the relief benefits, including medical benefits, disability payments, and death benefits, on actual annual costs. Calculating the cost of the relief benefits on a projected basis would require a separate medical valuation, which would include an assumption for the medical trend rate (a measure of the rate of change over time of the per capita health care costs). The projected costs of the relief benefits would be significantly higher than the annual costs shown in this report. We are working with the Board to perform an actuarial valuation of the relief plan during 2010 to be included in the 2010 VAVR.

Significant Changes Since the Prior Valuation

The following comments summarize the highlights of changes from the last valuation. Please see the Actuarial Certification for additional comments on the 2009 valuation results.

The most significant change since the last valuation was the actuarial loss on assets. The actual investment return on the market value of assets was -17.09 percent compared to the assumed rate of 7 percent. This loss of almost 24 percent will be smoothed over the next eight years based on the asset valuation method adopted by the Board. As a result, we expect to see upward pressure on future contribution rates and a decrease in projected funded status while we recognize this asset loss. Actual contribution rate increases and future funded status will depend on future contribution levels, actual investment returns, and future plan provisions.

Liability gains or losses also impact contribution rates. These occur when annual economic and demographic experience differs from our long-term assumptions or when there are changes in plan provisions or actuarial assumptions or methods. Besides the asset loss mentioned above, other key factors that impacted the results of this valuation include the following:

- A change in plan provisions to allow members to return to actively volunteering without suspending their pension payments resulted in an actuarial loss.
- The assets include a gain from the receipt of the fire insurance premium tax. Contributions in excess of actuarial requirements for the plan's pension liabilities produce actuarial gains.
- More members terminated than expected producing an actuarial gain to the plan.

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.

Detailed gain and loss information by system can be found in the Actuarial Exhibits section of this report.

Section Two



Actuarial Exhibits



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**Actuarial Certification Letter
Volunteer Fire Fighters' and Reserve Officers'
Relief and Pension Fund
Actuarial Valuation Report
As of June 30, 2009
October 2010**

This report documents the results of the actuarial valuation we performed on the Volunteer Fire Fighters' and Reserve Officers' Relief and Pension Fund as defined under Chapter 41.24 of the Revised Code of Washington. The primary purpose for performing this valuation is to determine contribution requirements for the pension plan as of the valuation date June 30, 2009. This report should not be used for other purposes.

To produce the valuation results summarized in this report, we performed calculations requiring assumptions about future economic and demographic events. We believe that the assumptions and methods used in the 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 Washington State Board for Volunteer Fire Fighters and Reserve Officers (the Board) adopted the investment return assumption used in this valuation. We developed the demographic assumptions in the 2001 – 2006 Experience Study. The demographic assumptions include recognition of future improvements in assumed mortality, based on 50 percent of Scale AA. The Board adopted the asset valuation method and amortization policy for the UAAL. The Board also adopted the current policy to fund the relief benefits on a pay-as-you-go basis. We selected all other assumptions and methods used in this valuation. In our opinion, all methods, assumptions, and calculations are reasonable and are in conformity with generally accepted actuarial principles and standards of practice as of the date of this publication.

The Board provided member and beneficiary data. The Board implemented a new data collection process in 2007 and the 2009 data showed continued improvement. We checked the data for reasonableness as appropriate based on the purpose of the valuation. The Washington State Investment Board (WSIB) and the Office of the State Treasurer provided financial and asset information. An actuarial audit of the financial and participant data was not performed. We relied on all the information provided as complete and accurate. In our opinion, this information is adequate and substantially complete for the purposes of this valuation. However, continued improvement in the quality of the participant data will increase the reliability of future valuation results.

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The Board and OSA are actively working together to improve the quality of the participant data.

The Board adopted a new asset valuation method in 2008, which we included in the 2007 Volunteer Fire Fighters' Actuarial Valuation Report (VAVR). We believe the method will reduce the contribution rate volatility produced by the Entry Age Normal (EAN) actuarial funding method when used in combination with the existing asset allocation policy of WSIB. The combination of the current asset smoothing method with any other funding method or asset allocation policy may not be appropriate.

Consistent with current Board policy to fund relief benefits on a pay-as-you-go basis, the relief costs presented in this valuation represent the prior year's annual relief costs only. We have not provided a projected liability measure for the plan's relief benefits nor have we provided the annual contribution required to pre-fund future relief benefits. Consistent with the Board's future funding policy, we will include this information in next year's actuarial valuation.

We recently discovered that a small group of members currently receiving benefits under the relief plan are also receiving pension benefits or are eligible for a deferred pension benefit. We have not valued these pension liabilities in this actuarial valuation or prior actuarial valuations. We determined the liability is immaterial to the results shown in this report. We will include this liability in the 2010 VAVR.

The undersigned, with actuarial credentials, meet 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

Lisa A. Won, ASA, MAAA
Actuary

Contribution Rates

We used the Entry Age Normal (EAN) funding method to determine the pension contribution rates as a level dollar amount. This method divides the contribution rate into two parts: a Normal Cost rate and a rate to amortize the Unfunded Actuarial Accrued Liability (UAAL). The total contribution rate, which is the sum of the two rates, should be sufficient to fund all projected pension benefits of today's members. However, this assumes:

- Members' contributions, employers' contributions, and premium taxes are collected regularly.
- The Legislature does not improve benefits.
- Assumptions prove reasonable.

We do not expect a smooth pattern of future contributions due to the variability of the premium tax on fire insurance policies. The plan receives a portion of the annual premium taxes, which serve as a main revenue source of the system. See the Actuarial Methods section of the Appendices for more detail.

Pension and Relief Plans Required Annual Contributions		
	Per Person*	Total
Pension Benefits	(Dollars)	(\$ in 1000's)
Normal Cost	\$120.75	\$1,299
Cost of UAAL	(25.61)	(275)
Total Pension Rate	\$95.14	\$1,024
Relief Benefits		
Medical Costs	\$85.63	\$1,149
Temporary or Permanent Disability	34.91	468
Survivors	18.48	248
Total Relief Rate	\$139.03	\$1,865
Total Pension and Relief	\$234.17	\$2,889
Operating Expense		
Administration and Expenses**	\$37.31	\$501
Total for Pension, Relief, and Expenses	\$271.48	\$3,389

*The Per Person rate is based on the number of active members in the data.

**Estimated using actual dollars.

Notes: Totals may not agree due to rounding. Pension costs are allocated to pension members; relief and operating costs are allocated to all members. Employers pay 1.5% of salary for paid fire fighters not in LEOFF. Emergency medical service districts and reserve law enforcement officers pay the full rate, including administration expenses.

Actuarial Liabilities

Present Value of Benefits for the Pension Plan*		
Liability Measures (\$ in Thousands)	Entry Age Normal	Fully Projected
Active Members		
Retirement	\$41,426	\$44,500
Vesting	12,703	14,782
Death Benefits	1,023	1,137
Withdrawal	1,498	1,951
Total Actives	\$56,650	\$62,371
Inactive Members		
Retirees	\$62,227	\$62,227
Terminated Vested	40,089	40,089
Survivor	4,031	4,031
Total Inactives	\$106,347	\$106,347
2009 Total	\$162,996	\$168,717
2008 Total	\$153,258	\$159,640

Note: Totals may not agree due to rounding.

*Includes pension benefits only. Does not include benefits under the relief plan.

Development of Pension Plan Normal Cost*	
(\$ in Thousands)	Total
a. Present Value of Fully Projected Benefits (PVFB)	\$168,717
b. Entry Age Normal Actuarial Accrued Liability (AAL)	162,996
c. Present Value of Future Normal Costs (PVFNC) (a-b)	\$5,721
d. Present Value of Future Service (PVFS)	47,380
e. Per Person Entry Age Normal Cost (c/d in Dollars)	\$121
f. Number of Active Members in Pension Plan	10,758
g. Entry Age Normal Cost (e*f)	\$1,299

Note: Totals may not agree due to rounding.

*We use a modified version of the Entry Age Normal cost method since members of the pension plan do not contribute beyond 25 years of service, but can continue to volunteer beyond 25 years. We calculate the EAN accrued liability over all future years of service, but calculate the present value of future service over no more than 25 years of service for purposes of calculating the normal cost.

Development of Pension Plan UAAL	
<i>(\$ in Thousands)</i>	Total
a. Present Value of Fully Projected Benefits (PVFB)	\$168,717
b. Actuarial Value of Assets (AVA)	165,681
c. Unfunded PVFB (a-b)	\$3,036
d. Present Value of Future Normal Costs (PVFNC)	
Employer	1,421
Employee	1,421
State	2,878
Total	\$5,721
e. Unfunded Actuarial Accrued Liability (UAAL) (c-d)	(\$2,685)
f. Contribution to Amortize the UAAL (Rolling 15-Year)	(\$275)
g. Number of Active Members in Pension Plan	10,758
h. Per Person UAAL Contribution (f/g in Dollars)	(\$26)

Note: Totals may not agree due to rounding.

Plan Assets

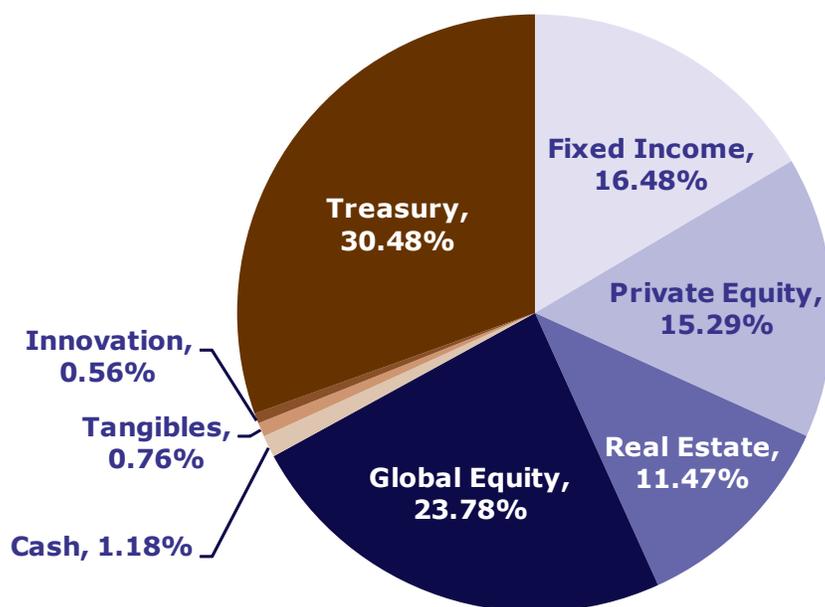
Calculation of the Actuarial Value of Assets	
Assets as of June 30, 2009	
<i>(\$ in Thousands)</i>	
(a) Market Value of Assets	\$135,082
Deferred Investment Gains (Losses)	
2009	(33,987)
2008	(8,788)
2007	5,203
2006	5,254
2005	1,381
2004	338
(b) Total Deferred Investment Gains (Losses)	(30,599)
(c) Actuarial Value of Assets (a-b)	\$165,681
(d) Ratio of Actuarial to Market (c/a)	123%

Note: Totals may not agree due to rounding.

Assets as of June 30, 2008	
<i>(\$ in Thousands)</i>	
(a) Market Value of Assets	\$166,375
(b) Deferred Investment Gains (Losses)	5,306
(c) Actuarial Value of Assets (a-b)	\$161,069
(d) Ratio of Actuarial to Market (c/a)	97%

Note: The actuarial value of assets may not exceed 130% nor drop below 70% of the market value of assets.

Asset Allocation as of June 30, 2009*



*Washington State Investment Board asset allocation for the quarter ending June 30, 2009. This includes assets in the Commingled Trust Fund (CTF) and assets currently invested by the State Treasurer.

Change in Market Value of Assets	
(\$ in Thousands)	
Market Value as of June 30, 2008	\$166,375
Revenue:	
Member Pension Contributions	\$126
Employer Pension Contributions	486
Relief Plan Contributions	494
Investment Earnings Net of Expenses	(27,568)
Net Fire Insurance Premium Tax	5,794
Allocation to the Administration Fund*	(567)
Total Revenue	(\$21,235)
Disbursements:	
Refunds	\$15
Expenses	23
Disability and Survivor Benefits	716
Miscellaneous	26
Medical Benefits	1,149
Retirement Pensions (monthly and lump sums)	8,129
Total Disbursements	\$10,058
Market Value as of June 30, 2009	\$135,082

Note: Totals may not agree due to rounding.

*Actual administration costs = \$500,648.

Annual Income vs. Costs	
Pension and Relief Plans	Total
(\$ in Thousands)	
Actuarial Costs	
Normal Cost	\$1,299
UAAL (Surplus)	(275)
Pension	\$1,024
Relief ¹	1,865
Total Actuarial Costs	\$2,889
Income	
Fire Insurance Premium Tax ¹	\$5,794
Administration and Expenses ¹	(501)
	\$5,293
Pension:	
Employer	\$315
Employee	315
Other Pension ²	31
	\$661
Relief:	
Employer ⁴	\$394
Other Relief ^{2,3}	38
	\$432
Total Income	\$6,387
Surplus (deficit) Income	\$3,498

Note: Totals may not agree due to rounding.

¹ Estimated using actual dollars.

² Emergency Medical Services Districts and Reserve Law Enforcement Officers pay full cost of their benefits.

³ Employer pays 1.5% of salary for paid fire fighters not in LEOFF.

⁴ Relief fees based on the rate of \$30 per member.

Funded Status

We report a plan's funded status by comparing the plan's current assets to the present value of the earned pensions of its members. For this valuation report, we present the funded status on an Actuarial Value Basis. This measure compares the Actuarial Value of Assets (AVA) to the EAN accrued liabilities calculated using a long-term interest rate assumption.

The funded status on an actuarial value basis assumes the plan is on-going and therefore uses the same long-term assumptions and methods to develop the assets and liabilities as used in determining the contribution requirements of the plan. We do not 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.

We use an asset valuation method to determine the AVA. This asset valuation method smoothes the inherent volatility in the Market Value of Assets (MVA) by deferring a portion of annual investment gains or losses for a certain number of years. Investment gains and losses occur when the annual return on investments varies from the long-term assumed rate of 7 percent. The AVA provides a more stable measure of the plan's assets on an on-going basis.

We use the EAN actuarial cost method to determine the present value of earned pensions (liabilities). The EAN liabilities are based on the difference between PVFB and PVFNC (the value of all future normal costs). They reflect future service credits for determining benefit eligibility. The EAN cost method determines each year's normal cost as a level annual amount that, if collected from each member's entry age to their projected retirement age, would completely fund their projected pension benefits. The EAN 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 funded status serves as an independent measure to assess the pension system's funding progress and is a consistent measure to compare to the funded statuses of other retirement systems.

Funded Status on Actuarial Value Basis

(\$ in Thousands)

Entry Age Normal Accrued Liability*	\$162,996
Actuarial Value of Assets	\$165,681
Unfunded Liability	(\$2,685)

Funded Ratio

June 30, 2009***	102%
June 30, 2008	105%
June 30, 2007**	107%
December 31, 2006	103%
December 31, 2005**	95%
December 31, 2004	113%
December 31, 2003	116%
December 31, 2002***	122%
December 31, 2001**	142%
December 31, 2000**	144%
December 31, 1999	132%
December 31, 1998***	120%
December 31, 1997	144%
December 31, 1996	129%
December 31, 1995**	118%
December 31, 1994	112%
December 31, 1993**	114%
December 31, 1992	108%
December 31, 1991***	103%
December 31, 1990	111%
December 31, 1989**	112%
December 31, 1988	98%

* Prior to 2007, we used the Projected Unit Credit Liability to calculate the funded status.

** Actuarial assumptions changed.

*** Benefits increased.

Funded Status at Variable Interest Rate Assumptions*		
(\$ in Thousands)	6.25% ROR	7.75% ROR
Entry Age Normal Accrued Liability	\$178,328	\$149,709
Actuarial Value of Assets	\$165,681	\$165,681
Unfunded Liability	\$12,647	(\$15,972)

Funded Ratio:		
June 30, 2009***	93%	111%
June 30, 2008	96%	115%
June 30, 2007**	98%	117%

* The present value of actuarial liabilities is sensitive to the interest rate assumption. This table shows how the funded status changes when we use different interest rate assumptions. We calculated the liabilities using a 6.25% and 7.75% Rate of Return (ROR) to show this sensitivity.

** Actuarial assumptions changed.

*** Benefits increased.

Economic Experience

The economic experience will reflect the current economic, financial, and inflationary environment. These factors change more rapidly than the factors affecting our demographic assumptions.

- Investment Returns** – We assume future investment returns at a rate of 7.0 percent per year. This assumption represents the average annual rate of return we expect the assets of the plan to earn over the long-term. Actual annual investment performance over short-term periods will deviate from this long-term assumption. To reduce the volatility on contribution rates and reported funded status, the Board adopted an asset smoothing method that limits short-term fluctuations in the actuarial value of assets due to the underlying volatility in the market value of assets. We estimated a -17 percent rate of investment return on the market value of assets for the plan year ending on the valuation date. In comparison, we calculated a 5.2 percent rate of investment return on the actuarial value of assets (dollar-weighted return).
- Premium Tax** – As the state’s contribution to the plan, the Office of the State Treasurer contributes 40 percent of the premium tax paid on fire insurance policies to fund the plan. The level of annual premium tax fluctuates because the amount of the contribution equals the total amount paid by insurers to guarantee associations.

Premium Taxes Contributed to Plan	
Year	(\$ in Thousands)
2009	\$5,794
2008	\$5,853
2007	\$5,689
2006	\$5,186
2005	\$4,808
2004	\$4,726
2003	\$4,112
2002	\$3,605
2001	\$3,320
2000	\$2,869
1999	\$2,706
1998	\$2,285
1997	\$2,539
1996	\$2,973
1995	\$2,330
1994	\$2,370
1993	\$2,016
1992	\$1,736
1991	\$2,081
1990	\$1,892
1989	\$1,900

Demographic Experience

Actual vs. Expected Demographic Counts			
Counts by Decrement Type	Actual	Expected	Act / Exp
New Entrants	1620	N/A	0.00
Retirements	53	94	0.56
Terminations	1615	1202	1.34
Deaths - Active Members	6	19	0.31
Active Disabilities	0	N/A	0.00
Deaths - Inactive Members	93	187	0.50

Actuarial Gain / Loss

Change in Pension Rate by Source		
2008 Pension Rate Before Laws of 2009	\$	58.95
Liabilities		
Termination		(1.02)
Retirement		0.41
Mortality		(2.44)
Growth / Return to Work		3.87
Other Liabilities		0.02
Total Liabilities (Gains) / Losses	\$	0.84
Assets (Gains) / Losses*	\$	(15.21)
Incremental Changes		
Plan Changes		-
Method Changes		-
Assumption Changes		0.80
Correction Changes		(10.21)
Total Incremental Changes (Gains) / Losses	\$	(9.41)
Other (Gains) / Losses	\$	4.84
Total Change	\$	(18.94)
2009 Preliminary Pension Rate	\$	40.00
Laws of 2010	\$	55.14
2009 Adjusted Pension Rate	\$	95.14

* Includes a gain from the receipt of the fire insurance premium tax. Contributions in excess of actuarial requirements for the plan's pension liabilities produce actuarial gains.

Change in Normal Cost Rate by Source	
2008 Normal Cost Rate Before Laws of 2009	\$ 132.87
Liabilities	
Termination	-
Retirement	-
Mortality	-
Growth / Return to Work	-
Other Liabilities	-
Total Liabilities (Gains) / Losses	\$ -
Assets (Gains) / Losses	\$ -
Incremental Changes	
Plan Changes	-
Method Changes	-
Assumption Changes	0.12
Correction Changes	(15.12)
Total Incremental Changes (Gains) / Losses	\$ (15.00)
Other (Gains) / Losses	\$ (0.05)
Total Change	\$ (15.05)
2009 Preliminary Normal Cost Rate	\$ 117.82
Laws of 2010	\$ 2.92
2009 Adjusted Normal Cost Rate	\$ 120.75

Change in UAAL Rate by Source	
2008 UAAL Rate Before Laws of 2009	\$ (73.93)
Liabilities	
Termination	(1.02)
Retirement	0.41
Mortality	(2.44)
Growth / Return to Work	3.87
Other Liabilities	0.02
Total Liabilities (Gains) / Losses	\$ 0.84
Assets (Gains) / Losses*	\$ (15.21)
Incremental Changes	
Plan Changes	-
Method Changes	-
Assumption Changes	0.68
Correction Changes	4.91
Total Incremental Changes (Gains) / Losses	\$ 5.58
Other (Gains) / Losses	\$ 4.89
Total Change	\$ (3.90)
2009 Preliminary UAAL Rate	\$ (77.82)
Laws of 2010	\$ 52.22
2009 Adjusted UAAL Rate	\$ (25.61)

*Includes a gain from the receipt of the fire insurance premium tax.
Contributions in excess of actuarial requirements for the plan's pension liabilities produce actuarial gains.

Effect of Plan, Assumption, and Method Changes

Per Person Annual Contribution Rates			
Valuation Year	2008	Incremental	2009
Pension Rate	Final	Changes	Final
Employee	\$30	\$30	\$30
Employer	30	30	30
State	73	61	61
Normal Cost Rate	\$133	\$121	\$121
State UAAL or (Surplus) Rate	(74)	(16)	(26)
Pension Rate	\$59	\$104	\$95

Plan Changes

- **HB 2823, Laws of 2010** – This legislation allows members to return to actively volunteering without suspending their pension payments. With this legislation, we assume that once members earn the maximum possible pension amount (25 years of service at age 65), that a vast majority would commence their retirement benefit even if they continue to volunteer. Prior to this legislation, we assumed some members would continue to volunteer once they earned their maximum pension but they would defer receiving their pension until they retired. See the Retirement Rates in the Actuarial Assumptions section of the Appendices for further details.

Assumption Changes

- **Ratio of Survivors Selecting Annuities** – We updated this assumption to account for the increase in the expected number of eligible survivors resulting from the 2009 legislation regarding domestic partners. The percentage increase in this assumption is consistent with the changes we made to the assumption in PERS.

Method Changes

- **Duty-Related Lump Sum Death Benefit** – Historically we valued this benefit under RCW 41.24.160 as part of the pension valuation. Since this is a relief benefit, we removed it from the pension liabilities but will include it as part of the Relief Valuation to be completed June 30, 2011.
- **Terminated Vested Death Benefits** – Starting with this valuation, we include this benefit provision in the value of liabilities. This benefit provides the surviving spouse (if one exists) with the choice between: an actuarially reduced pension; or, a return of member and employer contributions without interest if the terminated vested member dies prior to the commencement of their benefit.

Section Three



Participant Data

Membership Data										
Actives	2000	2001	2002	2003	2004 ¹	2005	2006	2007 ²	2008 ³	2009
Members in Relief System	17,607	17,794	18,545	17,752	17,813	14,185	15,591	14,066	13,393	13,417
Members in Pension System	12,254	11,996	11,903	12,043	12,109	11,926	11,627	11,212	10,842	10,758
Percent of Volunteers Covered	70%	67%	64%	68%	68%	84%	75%	80%	81%	80%
Average Age	40.8	40.9	41.0	41.0	41.0	41.2	41.4	41.4	41.5	41.7
Average Total Service	10.1	10.1	10.1	10.0	10.0	10.2	10.3	9.5	10.2	10.2
Average Pension Benefit Service	8.8	8.8	8.8	8.7	8.8	8.7	7.5	9.1	9.1	9.2
Active Emergency Med. Technicians			26	28	38	38	40	33	27	26
Active Reserve Law Enf. Officer			244	259	290	288	283	255	243	234
Retirees										
Number of Retirees/Beneficiaries	2,638	2,743	2,854	2,993	3,110	3,208	3,309	3,437	3,575	3,612
Average Age	72.7	72.8	72.8	72.8	72.9	73.3	73.6	73.5	73.4	74.0
New Retirees	227	193	210	225	207	190	193	107	212	198
Average Annual Benefit	\$2,000	\$1,986	\$1,976	\$2,132	\$2,135	\$2,144	\$2,149	\$2,152	\$2,158	\$2,161
Annual Benefit Payments (,000)	\$5,277	\$5,448	\$5,639	\$6,383	\$6,639	\$6,877	\$7,112	\$7,397	\$7,716	\$7,804
Term Vested										
Number of Term Vested	3,960	4,210	4,389	4,511	4,657	4,891	4,966	5,211	5,866	6,059
Survivor & Disabled										
Number of Survivors	13	14	14	13	14	14	15	17	17	14
Number of Disabled	12	14	15	16	16	13	13	14	13	13
Average Annual Benefit	\$16,947	\$17,086	\$17,828	\$18,026	\$18,333	\$17,380	\$18,930	\$18,450	\$18,447	\$20,205

¹ The number of Relief members in 2004 estimated at 15,844 with multiple memberships once only.

² New Retirees count updated to reflect six-month valuation year.

³ Retired counts include members who retired after the valuation date.

Age and Membership Service Distribution of Active Members										
Membership Service	Attained Age									
	< 25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+	Total
1	725	320	255	206	151	92	95	35	45	1,924
2	269	168	106	101	69	74	40	24	49	900
3-4	337	234	205	176	139	122	73	43	62	1,391
5-9	143	392	346	358	314	266	234	141	179	2,373
10-14	-	59	168	201	217	216	202	135	122	1,320
15-19	-	-	34	133	177	215	210	162	134	1,065
20-24	-	-	-	9	91	155	219	186	179	839
25 +	-	-	-	-	12	104	244	282	304	946
Total	1,474	1,173	1,114	1,184	1,170	1,244	1,317	1,008	1,074	10,758

Benefit Service	Age and Benefit Service Distribution of Active Members										Total
	Attained Age										
	< 25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+		
1	536	242	193	157	113	76	74	28	62	1,481	
2	382	187	140	122	90	77	55	34	57	1,144	
3-4	397	301	230	198	156	130	95	63	82	1,652	
5-9	159	373	347	376	302	290	240	150	165	2,402	
10-14	-	70	172	197	241	226	217	153	142	1,418	
15-19	-	-	32	123	167	205	209	156	148	1,040	
20-24	-	-	-	11	88	151	225	195	174	844	
25 +	-	-	-	-	13	89	202	229	244	777	
Total	1,474	1,173	1,114	1,184	1,170	1,244	1,317	1,008	1,074	10,758	

Service Retirees*		
Age	Number of Retirees	Average Annual Benefit
60	15	\$1,244
61	18	\$1,709
62	33	\$1,948
63	72	\$1,905
64	105	\$2,049
65	128	\$2,159
66	191	\$2,266
67	217	\$2,196
68	207	\$2,207
69	172	\$2,088
70	188	\$2,247
71	197	\$1,965
72	188	\$2,158
73	165	\$2,083
74	162	\$2,087
75	165	\$2,180
76	123	\$2,269
77	138	\$2,175
78	120	\$2,147
79	134	\$2,230
80	116	\$2,263
81	121	\$2,253
82	113	\$2,258
83	107	\$2,244
84	100	\$2,165
85	66	\$2,113
86	47	\$2,221
87	50	\$2,329
88	46	\$2,341
89	42	\$2,149
90 +	66	\$2,104
Total	3,612	\$2,161

*Includes beneficiaries of service retirees.

Retirees with Disabilities		
Age	Number of Retirees	Average Annual Benefit
36	1	\$19,073
53	1	\$22,893
55	2	\$20,983
56	1	\$19,073
60	1	\$22,893
61	1	\$22,893
69	1	\$22,893
71	1	\$19,073
72	1	\$19,073
74	1	\$22,893
75	1	\$22,893
84	1	\$22,893
Total	13	\$21,424

Line-of-Duty Death Survivors		
Age	Number of Survivors	Average Annual Benefit
33	1	\$19,073
48	1	\$19,073
51	2	\$19,073
67	1	\$19,073
68	1	\$19,073
71	1	\$19,073
73	2	\$19,073
85	1	\$19,073
86	1	\$19,073
89	1	\$19,073
92	2	\$19,073
Total	14	\$19,073

Section Four



Appendices

Actuarial Assumptions

Investment Returns

We assumed an annual investment rate of return of 7 percent.

Mortality Rates

We use the Public Employees' Retirement System (PERS) Plan 2/3 RP-2000 Combined Healthy Mortality Table with improvements projected to the year 2031 using 50 percent of Scale AA. The Society of Actuaries published both the RP-2000 and Scale-AA tables. See the Mortality Rates tables for the actual mortality rates by age. We developed a unisex mortality table based upon the percent male assumption below and apply it to the active and retired member population. However, we use the opposite percent male assumption when applying the mortality table to surviving spouses.

Percent Male

Our current membership data does not include sufficient gender information. We assume 90 percent male for the entire population. We expect future data to include gender-based information.

Purchase of Membership Service Credit

We assume all eligible members will purchase service credits for each year they did not make past pension contributions. As a result, we value all benefits, except for return of contributions, with eligibility and benefit amount based on membership service instead of benefit service.

Retirement Rates

Retirement rates begin at age 60 for active members. See the Probability of Retirement table for the actual retirement rates by age. We assume that terminated members with vested benefits will defer retirement to age 65.

Termination Rates

We model the termination rates as a function of membership service. Members are entitled to a deferred retirement pension after ten years of service. We set higher rates at 25 years when members reach the maximum benefit level. See the Probability of Termination table for the actual termination rates by age.

Mortality Rates								
RP-2000 Mortality Rates			50% Scale AA*			Projected Mortality		
Combined Healthy Table			PERS Plan 2/3 - 2031					
Age	Male	Female	Age	Male	Female	Age Offsets	Male -1	Female -1
20	0.000345	0.000191	20	0.009500	0.008000	20	0.000257	0.000149
21	0.000357	0.000192	21	0.009000	0.008500	21	0.000260	0.000147
22	0.000366	0.000194	22	0.008500	0.008500	22	0.000274	0.000147
23	0.000373	0.000197	23	0.007500	0.008000	23	0.000289	0.000151
24	0.000376	0.000201	24	0.006500	0.007500	24	0.000304	0.000156
25	0.000376	0.000207	25	0.005000	0.007000	25	0.000320	0.000161
26	0.000378	0.000214	26	0.003000	0.006000	26	0.000341	0.000171
27	0.000382	0.000223	27	0.002500	0.006000	27	0.000349	0.000178
28	0.000393	0.000235	28	0.002500	0.006000	28	0.000353	0.000185
29	0.000412	0.000248	29	0.002500	0.006000	29	0.000364	0.000195
30	0.000444	0.000264	30	0.002500	0.005000	30	0.000381	0.000212
31	0.000499	0.000307	31	0.002500	0.004000	31	0.000411	0.000232
32	0.000562	0.000350	32	0.002500	0.004000	32	0.000462	0.000271
33	0.000631	0.000394	33	0.002500	0.004500	33	0.000520	0.000305
34	0.000702	0.000435	34	0.002500	0.005000	34	0.000584	0.000338
35	0.000773	0.000475	35	0.002500	0.005500	35	0.000650	0.000367
36	0.000841	0.000514	36	0.002500	0.006000	36	0.000715	0.000395
37	0.000904	0.000554	37	0.002500	0.006500	37	0.000778	0.000421
38	0.000964	0.000598	38	0.003000	0.007000	38	0.000825	0.000446
39	0.001021	0.000648	39	0.003500	0.007500	39	0.000866	0.000474
40	0.001079	0.000706	40	0.004000	0.007500	40	0.000903	0.000513
41	0.001142	0.000774	41	0.004500	0.007500	41	0.000940	0.000559
42	0.001215	0.000852	42	0.005000	0.007500	42	0.000979	0.000613
43	0.001299	0.000937	43	0.005500	0.007500	43	0.001026	0.000675
44	0.001397	0.001029	44	0.006000	0.007500	44	0.001080	0.000742
45	0.001508	0.001124	45	0.006500	0.008000	45	0.001143	0.000803
46	0.001616	0.001223	46	0.007000	0.008500	46	0.001215	0.000864
47	0.001734	0.001326	47	0.007500	0.009000	47	0.001282	0.000925
48	0.001860	0.001434	48	0.008000	0.009000	48	0.001354	0.001002
49	0.001995	0.001550	49	0.008500	0.009000	49	0.001430	0.001084

* Scale AA represents annual improvements in mortality rates. We project these improvements in mortality to the specified year based on 50% of scale AA.

Mortality Rates (continued)								
RP-2000 Mortality Rates			50% Scale AA*			Projected Mortality		
Combined Healthy Table			PERS Plan 2/3 - 2031					
Age	Male	Female	Age	Male	Female	Age Offsets	Male -1	Female -1
50	0.002138	0.001676	50	0.009000	0.008500	50	0.001510	0.001188
51	0.002449	0.001852	51	0.009500	0.008000	51	0.001593	0.001305
52	0.002667	0.002018	52	0.010000	0.007000	52	0.001796	0.001485
53	0.002916	0.002207	53	0.010000	0.006000	53	0.001953	0.001670
54	0.003196	0.002424	54	0.010000	0.005000	54	0.002135	0.001884
55	0.003624	0.002717	55	0.009500	0.004000	55	0.002374	0.002134
56	0.004200	0.003090	56	0.009000	0.003000	56	0.002734	0.002468
57	0.004693	0.003478	57	0.008500	0.002500	57	0.003219	0.002855
58	0.005273	0.003923	58	0.008000	0.002500	58	0.003653	0.003218
59	0.005945	0.004441	59	0.008000	0.002500	59	0.004111	0.003630
60	0.006747	0.005055	60	0.008000	0.002500	60	0.004635	0.004109
61	0.007676	0.005814	61	0.007500	0.002500	61	0.005335	0.004678
62	0.008757	0.006657	62	0.007500	0.002500	62	0.006078	0.005380
63	0.010012	0.007648	63	0.007000	0.002500	63	0.007033	0.006160
64	0.011280	0.008619	64	0.007000	0.002500	64	0.008053	0.007077
65	0.012737	0.009706	65	0.007000	0.002500	65	0.009073	0.007975
66	0.014409	0.010954	66	0.006500	0.002500	66	0.010390	0.008981
67	0.016075	0.012163	67	0.006500	0.002500	67	0.011772	0.010136
68	0.017871	0.013445	68	0.007000	0.002500	68	0.012949	0.011255
69	0.019802	0.014860	69	0.007000	0.002500	69	0.014374	0.012441
70	0.022206	0.016742	70	0.007500	0.002500	70	0.015704	0.013751
71	0.024570	0.018579	71	0.007500	0.003000	71	0.017584	0.015276
72	0.027281	0.020665	72	0.007500	0.003000	72	0.019456	0.016927
73	0.030387	0.022970	73	0.007500	0.003500	73	0.021603	0.018565
74	0.033900	0.025458	74	0.007500	0.003500	74	0.024062	0.020604
75	0.037834	0.028106	75	0.007000	0.004000	75	0.027225	0.022517
76	0.042169	0.030966	76	0.007000	0.004000	76	0.030430	0.024822
77	0.046906	0.034105	77	0.006500	0.003500	77	0.034399	0.027735
78	0.052123	0.037595	78	0.006000	0.003500	78	0.038864	0.030592
79	0.057927	0.041506	79	0.005500	0.003500	79	0.043865	0.033723

* Scale AA represents annual improvements in mortality rates. We project these improvements in mortality to the specified year based on 50% of scale AA.

Mortality Rates (continued)								
RP-2000 Mortality Rates			50% Scale AA*			Projected Mortality		
Combined Healthy Table			PERS Plan 2/3 - 2031					
Age	Male	Female	Age	Male	Female	Age Offsets	Male -1	Female -1
80	0.064368	0.045879	80	0.005000	0.003500	80	0.049516	0.037231
81	0.072041	0.050780	81	0.004500	0.003500	81	0.055885	0.041154
82	0.080486	0.056294	82	0.004000	0.003500	82	0.063528	0.045550
83	0.089718	0.062506	83	0.004000	0.003500	83	0.071082	0.050496
84	0.099779	0.069517	84	0.003500	0.003500	84	0.080357	0.056068
85	0.110757	0.077446	85	0.003500	0.003000	85	0.089503	0.063239
86	0.122797	0.086376	86	0.003500	0.002500	86	0.099350	0.071556
87	0.136043	0.096337	87	0.003000	0.002000	87	0.111708	0.081056
88	0.150590	0.107303	88	0.002500	0.002000	88	0.125696	0.090540
89	0.166420	0.119154	89	0.002500	0.001500	89	0.139347	0.102270
90	0.183408	0.131682	90	0.002000	0.001500	90	0.156171	0.113736
91	0.199769	0.144604	91	0.002000	0.001500	91	0.172371	0.125695
92	0.216605	0.157618	92	0.001500	0.001500	92	0.190399	0.138029
93	0.233662	0.170433	93	0.001500	0.001000	93	0.206756	0.152575
94	0.250693	0.182799	94	0.001500	0.001000	94	0.223038	0.165228
95	0.267491	0.194509	95	0.001000	0.001000	95	0.242672	0.177216
96	0.283905	0.205379	96	0.001000	0.001000	96	0.259322	0.188569
97	0.299852	0.215240	97	0.001000	0.000500	97	0.275235	0.201916
98	0.315296	0.223947	98	0.000500	0.000500	98	0.294796	0.211929
99	0.330207	0.231387	99	0.000500	0.000500	99	0.310445	0.220502
100	0.344556	0.237467	100	0.000500	0.000500	100	0.329712	0.231040
101	0.358628	0.244834	101	0.000000	0.000000	101	0.344556	0.237467
102	0.371685	0.254498	102	0.000000	0.000000	102	0.358628	0.244834
103	0.383040	0.266044	103	0.000000	0.000000	103	0.371685	0.254498
104	0.392003	0.279055	104	0.000000	0.000000	104	0.383040	0.266044
105	0.397886	0.293116	105	0.000000	0.000000	105	0.392003	0.279055
106	0.400000	0.307811	106	0.000000	0.000000	106	0.397886	0.293116
107	0.400000	0.322725	107	0.000000	0.000000	107	0.400000	0.307811
108	0.400000	0.337441	108	0.000000	0.000000	108	0.400000	0.322725
109	0.400000	0.351544	109	0.000000	0.000000	109	0.400000	0.337441
110	0.400000	0.364617	110	0.000000	0.000000	110	1.000000	1.000000

* Scale AA represents annual improvements in mortality rates. We project these improvements in mortality to the specified year based on 50% of scale AA.

Probability of Retirement*		
Age	Rate	
	MS < 25	MS = 25
60	4%	4%
61	2%	2%
62	11%	11%
63	7%	7%
64	5%	5%
65	42%	90%
66-79	20%	90%
80+	100%	100%

* For calculating the PVFS, we assume 100% retirement at 25 years of service.

Probability of Termination*	
Service Years**	Rate
1-4	18%
5-9	12%
10-14	9%
15-24	5%
25	13%
26-34	9%
35+	0%

* The service based reduction factors improve at 10, 15, 20, and 25 years of membership service.

** For calculating the PVFS, we assume 100% termination at 25 years of service.

Actuarial Methods

Asset Valuation Method

The asset valuation method adopted by the Board for Volunteer Fire Fighters, starting with the 2007 Volunteer Fire Fighters' and Reserve Officers' Relief and Pension Fund Actuarial Valuation (VAVR), smoothes the volatility of the contribution rates. This method provides up to eight years of smoothing for asset returns and is used in combination with the funding method described below.

The asset valuation method is an adjusted market value method. We determine the actuarial value of assets 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 annual recognition rates per year.

Annual Gain/Loss		
Rate of Return	Smoothing Period	Annual Recognition
14% and up	8 years	12.50%
13-14%	7 years	14.29%
12-13%	6 years	16.67%
11-12%	5 years	20.00%
10-11%	4 years	25.00%
9-10%	3 years	33.33%
8-9%	2 years	50.00%
6-8%	1 year	100.00%
5-6%	2 years	50.00%
4-5%	3 years	33.33%
3-4%	4 years	25.00%
2-3%	5 years	20.00%
1-2%	6 years	16.67%
0-1%	7 years	14.29%
0% and lower	8 years	12.50%

Note: The actuarial value of assets may not exceed 130% nor drop below 70% of the market value of assets.

Actuarial Cost Method

Every actuarial cost method is comprised of two components:

- Normal Cost.
- Unfunded Actuarial Accrued Liability.

We develop the contribution rate as the sum of the Normal Cost and an amount to amortize the Unfunded Actuarial Accrued Liability (UAAL).

We use the Entry Age Normal Cost Method to develop the pension contribution rates for the Volunteer Fire Fighters' Relief and Pension Fund. The Normal Cost is the level dollar amount, calculated individually, that would fund each member's pension benefits from their date of entry to the plan to their assumed retirement.

The UAAL represents the excess of the Present Value of Fully Projected Benefits (PVFB) over the sum of the Present Value of Future Normal Costs (PVFNC) and the Actuarial Value of Assets (AVA).

In equation form: $UAAL = PVFB - PVFNC - AVA$

Such an excess can arise for numerous reasons. For example:

- Benefits granted for service prior to establishment of the plan.
- Retroactive benefit increases or benefit improvements.
- Changes to actuarial assumptions and methods.
- Actual experience under the plan that varies from the assumptions.

We developed the UAAL contribution rate in this valuation as a level dollar amount, amortized over a rolling 15-year period. That means we recalculate the UAAL contribution rate each year using a new 15-year period.

Present Value of Future Service

The actuarial cost method utilizes the Present Value of Future Normal Costs (PVFNC) to calculate the UAAL. We determine the PVFNC by estimating the Present Value of Future service (PVFS) for all current pension members. The expected total years of future service depends on when we assume members will terminate or retire. Our current termination and retirement rates reflect our best estimate of the future behavior of pension members. Currently, the rates extend beyond 25 years of service, which is the maximum number of pension payments (contributions) members may make. Therefore, for the purposes of determining the PVFNC, we estimate the PVFS assuming all members either terminate or retire once they reach 25 years of service.

Relief Plan

Consistent with the Board's current funding policy, the fund pays relief costs on a pay-as-you-go basis. We used last year's actual costs to determine this year's contribution rates. We did not use any projection of costs or medical trend assumption in this valuation. The results of the Relief Valuation in 2010 will be incorporated into the 2010 VAVR.

Operating Expenses

We used the actual administration and other miscellaneous expenses incurred last year to determine this year's contribution rates.

Summary of Plan Provisions

There are two employee benefits provided to volunteer fire fighters:

- Optional membership in the retirement plan.
- Mandatory death and disability coverage for duty-related injuries.

These benefits are part of two distinct plans authorized by different sections of statute.

The following section summarizes the benefits and contributions established under Chapter 41.24 RCW. This section is for reference only and does not detail the rules and regulations upon which the actuarial calculations are made.

Participation

RCW 41.24.010 (10)

“Participant” means: (a) For purposes of relief, any reserve officer who is or may become eligible for relief under this chapter or any fire fighter or emergency worker; and (b) for purposes of retirement pension, any fire fighter, emergency worker, or reserve officer who is or may become eligible to receive a benefit of any type under the retirement provisions of this chapter, or whose beneficiary may be eligible to receive any such benefit.

Contributions

- **Death and Disability** - The member does not make contributions for this benefit. Municipalities contribute \$30 annually on behalf of each member plus 1.5 percent of the annual salary of paid fire fighters not covered under LEOFF. Reserve law enforcement officers and emergency medical technicians are required to pay the amount adopted annually by the Board for Volunteer Fire Fighters and Reserve Officers. That amount for the 2009 calendar year was \$135.
- **Retirement** - If a member chooses to enroll, he/she contributes \$30 annually and the municipality also contributes \$30. Municipalities may pay the entire contribution for the member. Also, 40 percent of the net premium taxes on fire insurance policies are paid into the plan. Reserve law enforcement officers and emergency medical technicians are required to pay the amount adopted annually by the Board for Volunteer Fire Fighters and Reserve Officers. That amount for the 2009 calendar year was \$100.

Refund of Contributions

Upon termination, the member may receive a refund of their contributions without interest. If the member chooses this option, he/she then forfeits any earned pension benefits.

Buying Back Past Service

If a member misses a pension contribution payment in any year following enrollment in the plan, they may make the contribution at a later date. Interest is added at a rate of 1 percent per month.

Medical Benefits (Relief Plan)

Physician and hospitalization costs are covered to the extent set out in RCW 41.24.220.

Disability Payments (Relief Plan)

RCW 41.24.150

- **Duty Disability** - Members receive payments of \$2,550 per month for up to six months. If the disability continues, the member receives \$1,275 per month, their spouse receives \$255, and each dependent child receives \$110. Disability benefits are subject to a maximum of \$2,550 per month.
- **Effective July 1, 2001** - Benefits are increased annually in line with the CPI Urban Wage Earners and Clerical Workers (CPI-W – All Cities).
- **Non-Duty Disability** - None.

Death Benefits (Relief Plan)

RCW 41.24.160

- **Survivors** - Surviving spouses of members who die while on active duty shall be paid \$1,275 monthly. An additional \$110 is paid monthly to each of the member's surviving children while they are under 18-years-old. The survivor benefits are subject to a maximum of \$2,550 per month.
- **Effective July 1, 2001** - Benefit are increased annually in line with the CPI-W – All Cities.

RCW 41.24.160

- **Duty Death** - A lump sum of \$152,000 is paid.

RCW 41.24.230

- **Funeral and Burial Expenses** - A lump sum of \$2,000 is paid for members who die while on active duty. A \$500 lump sum is paid at the time of death for members who receive disability benefits.

Death Benefits

RCW 41.24.180

- **Non-Duty Death** - If the member had less than ten years of service, the spouse will receive a refund of member contributions without interest. If the member had ten or more years of service, the spouse may elect an annuity or a refund of member and employer contributions without interest. The annuity is the member's accrued benefit actuarially adjusted to reflect a 100 percent joint and survivor pension and further actuarially reduced to reflect the difference in the number of years between the fire fighter's age at death and age 65.

Retirement Pensions

RCW 41.24.170

Normal retirement is available at age 65 with at least ten years of membership service. Early retirement eligibility begins at age 60 with ten years of service, with the benefit amount reduced 8 percent per year when retirement occurs prior to age 65. Under normal or early retirement, the pension is reduced for service less than 25 years as shown in the table below.

The monthly pension benefit formula is:

$$(\$50 + \$10 \times \text{Benefit Service}) \times (\text{Membership Service Factor}) \times (\text{Age Factor})$$

"Benefit Service" is the number of years the member made pension contributions. "Membership Service" is the number of years the member was a member of the relief plan. The maximum monthly pension benefit is \$300. There is no automatic post-retirement COLA applied to the benefit.

Membership Service Factor for Less than 25 Years of Service

Membership Service Reduction Factor				
Membership Service	10-14	15-19	20-24	25 +
Retirement Factor	20%	35%	75%	100%

Age Factor for Retirement Before Age 65

Age Reduction Factor						
Age	60	61	62	63	64	65
Retirement Factor	60%	68%	76%	84%	92%	100%

Actuarially Equivalent Early Retirement Reduction Factors

We apply these factors to calculate the annuity benefit paid to survivors of active members who die from a non-duty related cause.

Actuarially Equivalent ERFs	
Age	Factor
<35	10%
35	10%
36	10%
37	10%
38	11%
39	12%
40	13%
41	14%
42	15%
43	16%
44	17%
45	18%
46	20%
47	21%
48	23%
49	25%
50	27%
51	29%
52	32%
53	34%
54	37%
55	41%
56	44%
57	48%
58	52%
59	57%
60	62%
61	68%
62	75%
63	82%
64	91%
65	100%

Retirement Options

RCW 41.24.172

The normal payment form of the benefit is a single-life annuity.

Retirees have the option of selecting a 100 percent joint and survivor pop-up pension. The pension amount is reduced from the amount of the normal payment form in full to provide an ongoing survivor benefit. If the member dies first, the reduced pension continues to the spouse for their lifetime. If the spouse dies first, the pension pops up to the amount the member would have received under the single-life payment form.

Emergency Medical Service Districts

Chapter 331, Laws of 1993 extended the membership provisions of the pension and relief plans to include Emergency Medical Service District (EMSD) Volunteers. The applicable RCW states the funding of the EMSD volunteers should be consistent with the most recent actuarial valuation.

The funding of the system includes contributions from the members and their districts at a rate established in statute. The total of these is less than the normal cost. The balance of the normal cost comes from another revenue source, 40 percent of the state's premium tax on fire insurance policies. Since the premium tax is independent of the number of members, the addition of new members lowers the system's funding. To prevent this, the entire normal cost and administration expenses are paid by the EMSDs and their volunteers. Volunteers pay the fixed dollar rate established in statute. The EMSDs pay the fixed dollar rate plus any excess cost.

Reserve Law Enforcement Officers

Chapter 11, Laws of 1995 extended the membership provisions of the pension plan to include Reserve Law Enforcement Officers. The pension provisions mirror those of the EMSDs.

Chapter 148, Laws of 1999 extended the membership provisions of the relief plan to include Reserve Law Enforcement Officers. The relief provisions mirror those of the EMSDs.

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

A pension plan incurs actuarial gains or losses when the actual experience of the pension plan does not exactly match assumptions. 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 7 percent.

Actuarial Value of Assets (AVA)

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 often select an asset 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 EAN normal cost equals the level amount that would fund the member's projected pension benefits if collected from the member's entry to their assumed retirement.

Funded Status

The ratio of a plan's actuarial value of assets to the present value of earned pensions at the valuation date.

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 Future Benefits (PVFB)

Computed by projecting the total future benefit cash flow from the plan, using actuarial assumptions (such as the probability of death or retirement), and then discounting the cash flow to the valuation date using the valuation interest rate.

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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