

Washington State

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

**2008 Actuarial
Valuation Report**



As of June 30, 2008



Board for Volunteer Fire Fighters' and Reserve Officers'

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A special thank you to Hannah Leupold for the use of her photographs, "Car Fire," "Engulfed," and "VFF Engine;" and Elizabeth Hyde for the use of her photographs "Number 2" and "Engine One."

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

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Volunteer Fire Fighters' and Reserve Officers' Relief and Pension Fund Actuarial Valuation Report As of June 30, 2008 October 2009

As required under Chapter 41.24.320 RCW, this report documents the results of the actuarial valuation we performed of 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, 2008. 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 remaining 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,

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Section 1

Summary of Key Results



Intended Use

Our purposes for performing the Volunteer Fire Fighters' and Reserve Officers' Relief and Pension Fund Actuarial Valuation (VAVR) are 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.

Contribution Rates

We determine the pension rate by performing an actuarial valuation. This rate includes the normal cost rate, plus a rate to amortize the Unfunded Actuarial Accrued Liability (UAAL). We determine the relief rate and the operating expense rate based on the actual annual costs from the prior year. Only members of the pension plan pay for the pension costs. All members pay for the relief costs and operating expenses.

Per Person Annual Pension Contributions		
Valuation Year	2007	2008
Pension Rate		
Employee	\$30	\$30
Employer	\$30	\$30
State	<u>\$38</u>	<u>\$73</u>
Normal Cost Rate	\$98	\$133
State UAAL Rate	<u>(\$90)</u>	<u>(\$74)</u>
Total Pension Rate	\$8	\$59
Relief Rate		
Employer	\$30	\$30
State	<u>106</u>	<u>116</u>
Relief Rate	\$136	\$146
Operating Expenses		
Administration and Expenses	\$31	\$37

Actuarial Liabilities

Actuarial Liabilities		
(Dollars in Millions)	2007	2008
Present Value of Fully Projected Benefits	\$148.4	\$159.6
Unfunded Actuarial Accrued Liability	(9.9)	(7.8)
Entry Age Normal Accrued Liability	\$141.2	\$153.3
Valuation Interest Rate	7.00%	7.00%

Assets

Assets		
(Dollars in Millions)	2007	2008
Market Value of Assets	\$170.0	\$166.4
Actuarial Value of Assets	151.1	161.1
Contributions*	0.6	0.7
Disbursements	4.6	9.9
Investment Return	13.7	0.0
Other**	\$6.2	\$5.5
Rate of Return on Assets***	8.96%	(0.07%)

Note: The 2007 Valuation measured only a 6-month period.

* 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) liabilities calculated using the long-term interest rate assumption.

Funded Status		
(Dollars in Millions)	2007	2008
a. Entry Age Normal Accrued Liability	\$141.2	\$153.3
b. Actuarial Value of Assets	151.1	161.1
c. Unfunded Liability (a-b)	(\$9.9)	(\$7.8)
d. Funded Ratio (b/a)	107%	105%

* 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 starting July 1 and ending June 30 of the year shown.

Distribution of Membership Between 2007 and 2008			
	2007	2008	Increase
Number of Active Members in Relief Plan	14,066	13,393	(5%)
Number of Active Members in Pension Plan*	11,212	10,842	(3%)
Percent of Volunteers Covered by Pension Plan	80%	81%	2%
Average Age	41.4	41.5	0%
Average Years of Service	9.5	10.2	7%
Number of Retirees/Beneficiaries	3,437	3,575	4%
Number of Terminated Vested Members	5,211	5,866	13%
Number of Survivors (Line of Duty)	17	17	0%
Number of Disabilities	14	13	(7%)

*Includes 27 Emergency Medical Technicians and 243 Reserve Law Enforcement Officers in 2008.

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		
2007 Pension Rate	\$	7.89
Economic (Gains) / Losses		(62.98)
Demographic (Gains) / Losses		1.22
Present Value Future Service (Gains) / Losses		(1.01)
Other (Gains) / Losses		113.82
Total Change	\$	51.05
2008 Preliminary Pension Rate	\$	58.95
Laws of 2009		N/A
2008 Adjusted Pension Rate	\$	58.95

Relief Benefits Not Reflected in this Valuation

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 for Volunteer Fire Fighters (the Board) to perform an actuarial valuation of the relief plan during 2010 to be included in the 2009 VAVR.

Significant Changes Since Prior Valuation

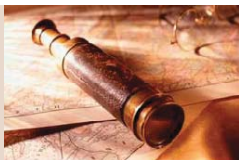
Since the 2007 VAVR, we've experienced one of the most dramatic declines in stock market history. Through the 2009 fiscal year, the Washington State Investment Board's Commingled Trust Fund (CTF) returned -23 percent. Based upon the VFF asset allocation, we expect approximately a -17 percent return for the VFF pension fund over the same period. We expect to see a decline in the VFF plan's funded status as the asset loss flows through the asset smoothing method. We also expect the plan's surplus to become an unfunded liability. This could lead to increased contribution requirements for the plan and the plan's members and employers. Also we will produce the first relief valuation in 2010. The results of the relief valuation will also increase plan costs and decrease the plan's funded status.

We produced a handout for the October 16, 2009, Board meeting. The handout contained more information about the future funded status and contribution requirements of the plan given the asset losses since the valuation date.

Section 2

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, 2008
October 2009**

This report documents the results of the actuarial valuation we performed of the Volunteer Fire Fighters' and Reserve Officers' Relief and Pension Fund as defined under Chapter 41.24 of the RCW. Our primary purpose for performing this valuation is to determine contribution requirements for the pension plan as of the valuation date June 30, 2008. 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. 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 to us this year. The Board implemented a new data collection process in 2007. The 2008 data showed continued improvement. We intend to monitor the quality of data provided by the Board to ensure its reasonableness. 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

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of future valuation results. 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.

The valuation includes all benefits in effect on the valuation date with the exception of the annuity and return of contributions benefits provided to the survivor of a terminated vested member who dies prior to the commencement of their deferred retirement benefit. We will include this liability in next year's valuation.

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

Chris Jasperson, ASA, MAAA
Associate Pension 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. 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 and premium taxes are collected regularly.
- The Washington State Board for Volunteer Fire Fighters and Reserve Officers (the Board) does not increase 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	\$132.87	\$1,441
Cost of Unfunded Actuarial Accrued Liability	<u>(\$73.93)</u>	<u>(\$802)</u>
Total Pension Contribution Rate	\$58.95	\$639
Relief Benefits (Medical, Disability, and Survivor Benefits)		
Medical Costs	\$93.71	\$1,255
Temporary or Partial Disability	32.07	\$430
Survivors	20.47	\$274
Total Relief Rate	\$146.26	\$1,959
Total Pension and Relief	\$205.20	\$2,598
Operating Expense		
Administration and Expenses**	\$37.11	\$497
Total for Pension, Relief, and Expenses	\$242.32	\$3,095

*The Per Person rate is based on the number of active members provided in the data, not the actual number of rate payers provided by the Board.

**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)	Projected Unit Credit	Entry Age Normal	Fully Projected
Active Members			
Retirement	\$30,774	\$34,456	\$37,309
Vesting	12,055	13,111	15,295
Death Benefits	1,861	1,233	2,104
Withdrawal	<u>1,766</u>	<u>1,446</u>	<u>1,921</u>
Total Actives	\$46,455	\$50,246	\$56,628
Inactive Members			
Retirees	62,371	62,371	62,371
Terminated Vested	36,706	36,706	36,706
Survivor	<u>3,935</u>	<u>3,935</u>	<u>3,935</u>
Total Inactives	\$103,012	\$103,012	\$103,012
2008 Total	\$149,467	\$153,258	\$159,640
2007 Total	\$136,300	\$141,197	\$148,400

Note: Totals may not agree due to rounding.

* Includes pension benefits only, not medical, disability, or survivor relief benefits.

Calculation of Pension Plan Unfunded Actuarial Accrued Liability	
(\$ in Thousands)	Total
a. Present Value of Fully Projected Benefits	\$159,640
b. Actuarial Value of Assets	<u>161,069</u>
c. Unfunded Present Value of Fully Projected Benefits (a-b)	(\$1,429)
d. Present Value of Future Normal Costs	
Employer	1,441
Employee	1,441
State	<u>3,500</u>
Total	\$6,382
e. Unfunded Actuarial Accrued Liability (c-d)	(\$7,811)
f. Contribution to Amortize the Unfunded Actuarial Accrued Liability	(\$802)

Note: Totals may not agree due to rounding.

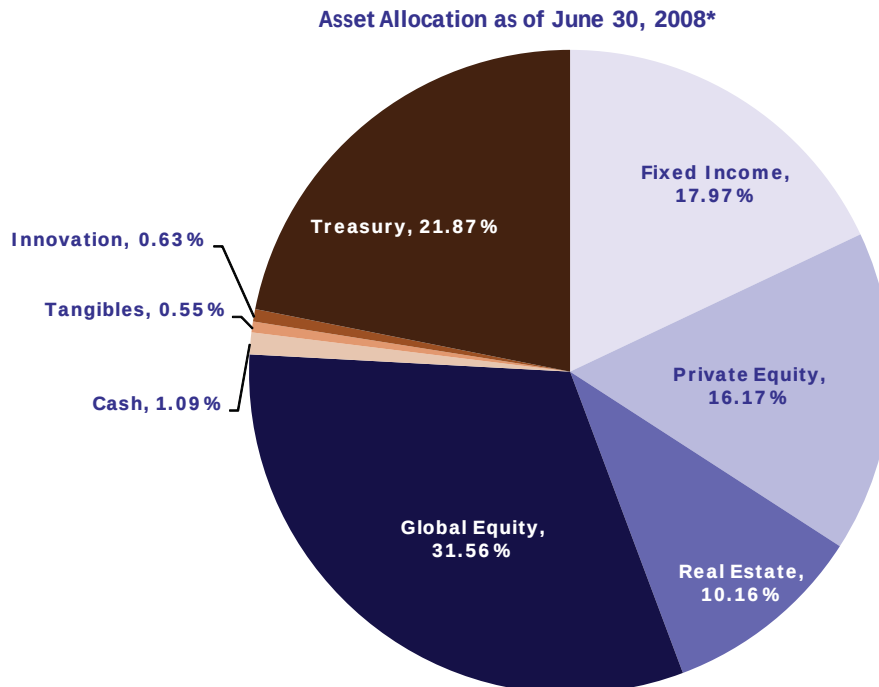
Plan Assets

Calculation of the Actuarial Value of Assets	
Assets as of June 30, 2008	
(\$ in Thousands)	
(a) Market Value of Assets	\$166,375
2008 Deferred Investment Gains (Losses)	(10,253)
2007 Deferred Investment Gains (Losses)	6,244
2006 Deferred Investment Gains (Losses)	6,567
2005 Deferred Investment Gains (Losses)	2,071
2004 Deferred Investment Gains (Losses)	<u>676</u>
(b) Deferred Investment Gains (Losses)	<u>5,306</u>
(c) Actuarial Value of Assets (a-b)	\$161,069
(d) Ratio of Actuarial to Market (c/a)	97%

Note: Totals may not agree due to rounding.

Assets as of June 30, 2007	
(\$ in Thousands)	
(a) Market Value of Assets	\$170,016
(b) Deferred Investment Gains (Losses)	<u>18,941</u>
(c) Actuarial Value of Assets (a-b)	\$151,075
(d) Ratio of Actuarial to Market (c/a)	<u>89%</u>

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



*Washington State Investment Board (WSIB) asset allocation for the quarter ending June 30, 2008. This includes assets in the Commingled Trust Fund (CTF) and assets currently invested by the State Treasurer.

Change in Market Value of Assets	
Market Value as of June 30, 2007	\$170,016
(\$ in Thousands)	
Revenue	
Contributions	
Member	\$142
Employer	556
Disability Fees	501
Investment Earnings Net of Expenses	15
Miscellaneous	0
Net Fire Insurance Premium Tax	5,853
Allocation to the Administration Fund*	(833)
Total Revenue	\$6,234
Disbursements	
Refunds	\$9
Expenses	0
Disability and Survivor	704
Medical	1,255
Retirement Pensions (monthly and lump sums)	7,907
Total Disbursements	\$9,875
Market Value June 30, 2008	\$166,375
<i>Note: Totals may not agree due to rounding.</i>	
<i>*Actual administration costs = \$497,000.</i>	

Annual Income vs. Costs	
Pension and Relief Plans	Total
(\$ in Thousands)	
Actuarial Costs:	
Normal Cost	\$1,441
UAAL (Surplus)	(802)
Pension	\$639
Relief ¹	<u>1,959</u>
Total Actuarial Costs	\$2,598
Income:	
Fire Insurance Premium Tax ¹	\$5,853
Administration and Expenses ¹	(497)
	\$5,356
Pension:	
Employer	\$325
Employee	325
Other Pension ²	<u>36</u>
	\$686
Relief:	
Employer ⁴	\$402
Other Relief ^{2,3}	<u>50</u>
	452
Total Income	<u>\$6,495</u>
Surplus (deficit) Income	\$3,897

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 full paid fire fighters not in LEOFF.*

⁴ *Relief fees based on the rate of \$30.00 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 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. The EAN liabilities are based on the difference between PVFB and PVFNC. That is, the difference between today's value of all benefits paid by the plan and today's value of the future normal costs required by the funding method. 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. We use the valuation date using the valuation interest rate to determine the present value (today's value) of the EAN liabilities. 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.

Pension Plan Funded Status	
(\$ in Thousands)	
Entry Age Normal Accrued Liability***	\$153,258
Actuarial Value of Assets	<u>\$161,069</u>
Unfunded Liability	(\$7,811)

Funded Ratio:	
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%

* Actuarial assumptions changed.

** Benefits increased.

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

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** – The investment return assumption represents the annual rate of return we expect the assets of the plan to earn over the long-term. We expect significant variations of investment earnings from those assumed over short periods. Funding pensions requires a long-term view and deviations from the assumptions over a short time do not necessarily affect long-term costs. We calculated the dollar-weighted annual rate of return for the year at 9.1 percent based on the AVA. The WSIB reported a -1.2 percent annual return on MVA for the year. We assume future investment returns at a rate of 7.0 percent per year.
- **Premium Tax** - 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 VFF	
Year	(\$ in Thousands)
2008	\$5,853
2007	\$5,689
2007	\$5,186
2006	\$4,808
2005	\$4,726
2004	\$4,112
2003	\$3,605
2002	\$3,320
2001	\$2,869
2000	\$2,706
1999	\$2,285
1998	\$2,539
1997	\$2,973
1996	\$2,330
1995	\$2,370
1994	\$2,016
1993	\$1,736
1992	\$2,081
1991	\$1,892
1990	\$1,900

Demographic Experience

Demographic Changes			
Counts by Decrement Type	Actual	Expected	Act / Exp
New Entrants	1714	N/A	0.00
Retirements	99	89	1.11
Terminations	1891	1316	1.44
Active Deaths	6	19	0.31
Active Disabilities	0	N/A	0.00
Inactive Deaths	205	181	1.13

Actuarial Gain / Loss

Change in Normal Cost Rate by Source			
2007 Normal Cost Rate Before Laws of 2008		\$	98.29
Asset			-
Fire Insurance Taxes			-
Economic (Gains) / Losses		\$	-
Termination			-
Retirement			-
Other			-
Demographic (Gains) / Losses		\$	-
Present Value Future Service (Gains) / Losses		\$	(0.82)
Plan Changes			1.85
Method Changes			21.17
Assumption Changes			-
Correction Changes			3.43
VFF Data Changes			-
Miscellaneous Changes			8.96
Total Other (Gains) / Losses		\$	35.40
Total Change		\$	34.58
2008 Preliminary Normal Cost Rate		\$	132.87
Laws of 2009			N/A
2008 Adjusted Normal Cost Rate		\$	132.87

Change in UAAL Rate by Source	
2007 UAAL Rate Before Laws of 2008	\$ (90.40)
Asset	(12.31)
Fire Insurance Taxes	<u>(50.67)</u>
Economic (Gains) / Losses	\$ (62.98)
Termination	(3.79)
Retirement	3.66
Other	<u>1.35</u>
Demographic (Gains) / Losses	\$ 1.22
Present Value Future Service (Gains) / Losses	\$ (0.19)
Plan Changes	13.16
Method Changes	39.30
Assumption Changes	-
Correction Changes	(21.99)
VFF Data Changes	54.89
Miscellaneous Changes	<u>(6.93)</u>
Total Other (Gains) / Losses	\$ 78.43
Total Change	<u>\$ 16.47</u>
2008 Preliminary UAAL Rate	\$ (73.93)
Laws of 2009	<u>N/A</u>
2008 Adjusted UAAL Rate	\$ (73.93)

Effect of Plan, Assumption, and Method Changes

Per Person Annual Contribution Rates			
Valuation Year	2007	Method	2008
Pension Rate	Final	Changes	Final
Employee	\$30	\$30	\$30
Employer	30	30	30
State	<u>38</u>	<u>67</u>	<u>73</u>
Normal Cost Rate	\$98	\$127	\$133
State UAAL or (Surplus) Rate	<u>(90)</u>	<u>(60)</u>	<u>(74)</u>
Pension Rate	\$8	\$67	\$59

Plan Changes

No changes to the Plan Provisions occurred since the last valuation.

Assumption Changes

No changes to the Assumptions occurred since the last valuation.

Method Changes

- **Present Value of Future Service (PVFS)** – To accurately model the expected future contributions to the plan, we made adjustments to the termination and retirement rates. Since members can only make up to 25 annual pension payments towards their benefit, we modified the rates solely for the purpose of calculating the PVFS. However, we still expect members to continue volunteering beyond 25 years of membership service and not start collecting their pensions for several years. In other words, we did not change the liabilities, rather we simply decreased the PVFS by assuming that all members either terminate or retire once they reach 25 years of service.
- **New Survivor Mortality Table** – In the previous valuation, we applied a unisex mortality table to members and survivors based upon an assumed 90 percent male member population. To more accurately model the expected future lifetime of surviving spouses, we changed the mortality table that applies to beneficiaries to reflect an assumed 90 percent female population.
- **Non-Duty Related Death Benefits** – In the 2007 Volunteer Fire Fighters' Actuarial Valuation Report (VAVR), we applied mortality rates to the active population. In the 2008 VAVR we included the active non-duty death benefits that members would receive. For members with less than ten years of service, the surviving spouse will receive a return of member contributions without interest. For members with greater than or equal to ten years of service, the surviving spouse will receive the choice between: an actuarially reduced pension; and, a return of member and employer contributions without interest. See the Summary of Plan Provisions in the Appendices for further details.
- **Survivor Options** – When a member retires they have the option to select a beneficiary who will continue to receive their pension after the death of the member. The Board provides data on whether a member selected this 100 percent Joint and Survivor option or a Single Life annuity. We modified our programming to value the survivor benefit for members who have selected this option at retirement. Otherwise we assume all members take the single life option. This change required an additional benefit that increases the retirees benefit amount should the spouse die before the member (or the "pop-up" benefit).

Section 3

Participant Data



Membership Data										
Actives	1999	2000	2001	2002	2003	2004 ¹	2005	2006	2007 ²	2008 ³
Members in Relief System	18,053	17,607	17,794	18,545	17,752	17,813	14,185	15,591	14,066	13,393
Members in Pension System	12,210	12,254	11,996	11,903	12,043	12,109	11,926	11,627	11,212	10,842
Percent of Volunteers Covered	67%	70%	67%	64%	68%	68%	84%	75%	80%	81%
Average Age	40.8	40.8	40.9	41.0	41.0	41.0	41.2	41.4	41.4	41.5
Average Total Service	10.1	10.1	10.1	10.1	10.0	10.0	10.2	10.3	9.5	10.2
Average Pension Benefit Service	8.8	8.8	8.8	8.8	8.7	8.8	8.7	7.5	9.1	9.1
Active Emergency Med. Technicians				26	28	38	38	40	33	27
Active Reserve Law Enf. Officer				244	259	290	288	283	255	243
Retirees										
Number of Retirees/Beneficiaries	2,473	2,638	2,743	2,854	2,993	3,110	3,208	3,309	3,437	3,575
Average Age	72.6	72.7	72.8	72.8	72.8	72.9	73.3	73.6	73.5	73.4
New Retirees	186	227	193	210	225	207	190	193	107	212
Average Annual Benefit	\$2,021	\$2,000	\$1,986	\$1,976	\$2,132	\$2,135	\$2,144	\$2,149	\$2,152	\$2,158
Annual Benefit Payments (,000)	\$4,999	\$5,277	\$5,448	\$5,639	\$6,383	\$6,639	\$6,877	\$7,112	\$7,397	\$7,716
Term Vested										
Number of Term Vested	3,751	3,960	4,210	4,389	4,511	4,657	4,891	4,966	5,211	5,866
Survivor & Disabled										
Number of Survivors	14	13	14	14	13	14	14	15	17	17
Number of Disabled	12	12	14	15	16	16	13	13	14	13
Average Annual Benefit	\$16,884	\$16,947	\$17,086	\$17,828	\$18,026	\$18,333	\$17,380	\$18,930	\$18,450	\$18,447

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

² New Retirees count updated to reflect 6-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+
1	690	337	210	196	129	119	79	51	60
2	302	155	123	89	76	51	31	22	27
3-4	358	240	222	205	159	117	77	43	72
5-9	151	382	354	369	318	259	233	152	161
10-14	-	50	185	207	221	234	223	121	93
15-19	-	-	39	139	164	229	233	167	133
20-24	-	-	-	19	88	174	236	206	141
25 +	-	-	-	-	14	133	237	260	277
Total	1,501	1,164	1,133	1,224	1,169	1,316	1,349	1,022	964
									10,842

Age and Benefit Service Distribution of Active Members										
Benefit Service	Attained Age									
	< 25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+	Total
1	539	233	147	137	91	76	62	37	66	1,388
2	378	203	152	124	102	74	51	52	59	1,195
3-4	407	277	234	221	151	128	100	44	65	1,627
5-9	177	402	381	379	339	281	243	156	162	2,520
10-14	-	49	183	222	238	235	231	147	116	1,421
15-19	-	-	36	122	159	241	232	179	140	1,109
20-24	-	-	-	19	77	178	238	189	140	841
25 +	-	-	-	-	12	103	192	218	216	741
Total	1,501	1,164	1,133	1,224	1,169	1,316	1,349	1,022	964	10,842

Service Retirees*		
Age	Number of Retirees	Average Annual Benefit
60	24	\$1,247
61	21	\$1,707
62	54	\$1,846
63	93	\$2,027
64	101	\$2,041
65	171	\$2,245
66	209	\$2,183
67	208	\$2,207
68	171	\$2,093
69	187	\$2,247
70	201	\$1,972
71	188	\$2,154
72	167	\$2,096
73	163	\$2,099
74	168	\$2,180
75	126	\$2,256
76	142	\$2,175
77	125	\$2,145
78	135	\$2,226
79	120	\$2,262
80	124	\$2,265
81	115	\$2,258
82	115	\$2,250
83	106	\$2,176
84	71	\$2,138
85	48	\$2,190
86	53	\$2,342
87	51	\$2,334
88	43	\$2,162
89	27	\$2,165
90 +	48	\$2,165
Total	3,575	\$2,158

* Includes beneficiaries of service retirees.

Retirees with Disabilities		
Age	Number of Retirees	Average Annual Benefit
35	1	\$18,543
52	1	\$22,251
54	2	\$20,397
55	1	\$18,543
56	1	\$19,852
59	1	\$22,251
60	1	\$22,251
68	1	\$22,251
70	1	\$18,543
71	1	\$18,543
73	1	\$23,049
74	1	\$22,251
Total	13	\$20,702

Line-of-Duty Death Survivors		
Age	Number of Survivors	Average Annual Benefit
32	1	\$18,543
35	1	\$7,200
51	2	\$18,543
54	1	\$18,891
71	1	\$18,543
72	2	\$18,808
79	1	\$9,900
84	1	\$18,543
85	1	\$18,543
88	2	\$14,221
90	1	\$15,300
91	2	\$18,568
97	1	\$18,543
Total	17	\$16,723

Section 4

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 <i>(continued)</i>								
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
60	4%
61	2%
62	11%
63	7%
64	5%
65	42%
66-79	20%
80+	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 rates 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 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. We believe our current termination and retirement rates reflect our best estimate of the behavior of pension members. Currently, the rates extend beyond 25 years of service, which is the maximum number of pension payments 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

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.

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.
- **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 2008 calendar year was \$115.00.

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 dependant 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** - the maximum of \$2,550 is increased annually in line with the CPI-W – All Cities.

RCW 41.24.160

- **Duty Death** - A lump sum of \$150,000 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 show 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 to 14	15 to 19	20 to 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

Experience of the plan, from one year to the next, which differs from that assumed, results in an actuarial gain or loss. For example, an actuarial gain would occur if assets earned 10 percent for a given year since the assumed interest rate in the valuation is 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 difference between the level amount that would fund the member's pension benefits if collected from entry age to retirement.

Funded Status

The ratio of a plan's current assets to the present value of earned pensions. Actuaries use several methods to measure a plan's assets and liabilities. In financial reporting of public pension plans, funded status is reported using consistent measures by all governmental entities. According to the Governmental Accounting Standards Board (GASB), the funded ratio equals the actuarial value of assets divided by the actuarial accrued liability. We calculated the accrued liability using the EAN cost method.

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.

Projected Unit Credit (PUC) Funding Method

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

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

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

Unfunded Actuarial Accrued Liability (UAAL)

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



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