



Office of the State Actuary

“Supporting financial security for generations.”

October 2022

Board for Volunteer Firefighters and Reserve Officers
605 E. 11 Avenue, Suite #112
Olympia, WA, 98507

SUBJECT: 2021 VOLUNTEER FIRE FIGHTERS’ AND RESERVE OFFICERS’ (VFF) RELIEF AND PENSION FUND ACTUARIAL VALUATION

The Office of the State Actuary (OSA) is required to perform actuarial services for the Board for Volunteer Fire Fighters and Reserve Officers (the Board) under the Revised Code of Washington (RCW) [41.24.320](#). These services include at least one actuarial valuation report per biennium, as agreed with the Board. We completed an actuarial valuation report in the prior Fiscal Year (FY) and will continue producing full reports in odd-numbered years. In even-number years, we intend to prepare a letter for the Board which provides an update on funding progress and information to assist the Board with their annual contribution rate adoption process.

Executive Summary

This letter represents the results of an actuarial valuation in which we used alternative methods to prepare the analysis. More specifically, we estimated liabilities by rolling forward the figures from our prior report to a measurement date of June 30, 2021. For assets, we relied on actual information as of June 30, 2021.

Many factors impact actuarial valuation results from one measurement date to the next. These factors can include changes in the plan provisions, assumptions, methods, the covered population, and experience that varies from our expectations. Below is a summary of the key changes since our [June 30, 2020, VFF Actuarial Valuation Report](#) (VAVR). Each of these factors is explored further in a corresponding section of the **Appendix**.

- ❖ **Participant Data** – We relied on participant data along with the economic and demographic assumptions from our 2020 VAVR to calculate the 2021 estimated liabilities.
- ❖ **Liabilities** – We estimate that the combined accrued liability for the pension and relief plans increased from \$253 to \$256 million.



- ❖ **Assets** – The Market Value of Assets (MVA) increased from \$265 to \$268 million and realized an investment return of 3.07 percent. The Actuarial Value of Assets (AVA) increased from \$262 to \$272 million.
- ❖ **Funded Status** – We estimate the funded ratio of the combined pension and relief plans increased from 104 to 106 percent.
- ❖ **Contribution Rates** – Given the roll-forward approach, we did not update the contribution rate calculations as part of this year’s analysis. However, we did consider the reasonableness of the 2020 VAVR calculated rates for purposes of the Board’s contribution rate adoption process this year.
 - **Pension** – We believe the calculated pension normal cost rate of \$123 per person from the 2020 VAVR remains reasonable, as this level-dollar rate was calculated using the Entry Age Normal (EAN) funding method.
 - **Relief** – We did not assess the reasonableness of the calculated relief rate from the 2020 VAVR, because the Aggregate funding method adopted by the Board tends to produce more volatile results on an annual basis. However, under a level-dollar EAN actuarial cost method, we believe the calculated relief normal cost rate of \$218 per person based on the 2020 VAVR remains reasonable. Note that this method has not been adopted by the Board, but OSA shared it as a possible alternative approach at the Board’s October 2021 meeting.

Actuarial Disclosures and Certification

This letter should not be used for purposes other than those stated above and is not intended to satisfy the accounting requirements under the Governmental Accounting Standards Board. Please replace this communication with a future report or letter when available.

Unless otherwise noted, all data, methods, and assumptions used in this letter are consistent with the 2020 VAVR. The disclosures and information we point to in that report remain reasonable for purposes of this valuation. This letter together with the 2020 VAVR form a complete actuarial communication.

We believe that the data, methods, and assumptions used are reasonable for the purposes of this valuation and are in conformity with generally accepted actuarial principles and standards of practice as of the date of this letter. The use of different data, methods, or assumptions could also be reasonable and could produce materially different results.

Consistent with the 2020 VAVR, this valuation includes the cost of [Engrossed Substitute Senate Bill 5829](#) (Chapter 144, Laws of 2020) which enhanced member benefits. To the extent that the actual commencement date of these benefits varies from what we assumed, the actual cost could differ; we will continue to monitor the implementation of this bill and will update our analysis accordingly as part of next year’s valuation.



Future actuarial measurements may differ significantly from the current measurements presented in this letter if plan experience differs from that anticipated by the assumptions or if changes occur in the methods, assumptions, plan provisions, or applicable law. We have not performed analysis of the potential range of such future measurements as part of this valuation. For more information regarding sensitivity and risks in the VFF plans, see the Commentary on Risk section of the 2020 VAVR.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this letter is intended to be complete, we are available to offer extra advice and explanations as needed. We encourage you to submit any questions you might have concerning this letter to us.

Sincerely,

Michael Harbour

Michael T. Harbour, ASA, MAAA
Actuary

Kyle Stineman

Kyle Stineman, ASA, MAAA
Actuary

cc:

Matt Smith, FCA, EA, MAAA, State Actuary
Office of the State Actuary

Lisa Won, ASA, FCA, MAAA, Deputy State Actuary
Office of the State Actuary

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APPENDIX

Participant Data

To conduct our analysis, we relied on participant data from the 2020 VAVR. The table below summarizes some key statistics of that covered population. Please see the 2020 VAVR for further details on the participant data, plus the provisions of the Pension and Relief plans.

June 30, 2020, Participant Data	
Actives	
Number of Members in Pension Plan	8,244
Average Age	42.6
Average Total Service	10.5
Number of Members in Relief Plan	9,651
Percent of Volunteers Covered by Pension Plan	85%
Inactives	
Number of Retirees/Beneficiaries	4,669
Average Age	75.6
Average Annual Benefit	\$2,329
Number of Terminated Vested Members	6,148
Average Age	61.1
Number of Duty-Death Survivors	11
Number of Duty-Related Disability Members	10

Liabilities

Since the publication of our 2020 VAVR, we finalized our [2022 VFF Economic Experience Study](#). However, this study did not result in a change to our economic assumptions, so we continued to rely on the assumptions disclosed in the 2020 VAVR to estimate liabilities.

For purposes of this valuation, we rolled-forward the accrued liabilities from the 2020 VAVR by one year. This approach assumes members age, earn service credit, and exit the plans consistent with our expectations. The following table displays this roll-forward of pension and relief plan liabilities. The liabilities in this letter are measured under the EAN actuarial cost method which produces an Actuarial Accrued Liability (AAL) that represents the portion of the present value of future benefits that have been earned by members as of the measurement date. Please see the 2020 VAVR for additional details on the methods and demographic assumptions used.

Change in AAL for the Pension and Relief Plans			
<i>(Dollars in Millions)</i>	Pension	Relief	Total
EAN AAL at June 30, 2020	\$243.7	\$9.2	\$252.9
Normal Cost	0.9	1.9	2.8
Interest	14.3	0.6	14.9
Other Changes*	0.0	0.0	0.0
Expected Benefit Payments	(12.7)	(2.2)	(15.0)
Estimated EAN AAL at June 30, 2021	\$246.1	\$9.5	\$255.6

*Includes plan provisions, assumption, and other changes.



Please note that we did not reflect the impact of new hires joining the plan over the past year. Including them would slightly increase the EAN AAL because these members only accrue a small portion of their benefits in the first year of volunteering.

Assets

For purposes of this valuation, we reflected actual asset experience over FY 2021 and relied on the current asset valuation method. The tables below display the change in MVA for the year ending June 30, 2021, and the updated AVA. Over this period, the MVA investment rate of return was 3.07 percent.

Change in Market Value of Assets	
<i>(Dollars in Thousands)</i>	
Market Value as of June 30, 2020	\$265,340
Revenue	
Member Pension Contributions	\$58
Employer Pension Contributions	394
Relief Plan Contributions	408
Investment Earnings Net of Expenses	8,058
FIPT Allocated to Trust Fund*	7,667
Total Revenue	\$16,586
Disbursements	
Refunds	\$13
Expenses	51
Disability and Survivor Benefits	530
Miscellaneous	0
Medical Benefits	485
Retirement Pensions (Monthly and Lump Sums)	12,637
Total Disbursements	\$13,717
Market Value as of June 30, 2021	\$268,209

Note: Totals may not agree due to rounding.

**The remaining \$1,397k in Fire Insurance Premium Tax (FIPT) revenue was allocated to the Board's administrative account. Actual administrative costs for the prior year were approximately \$485k.*



Calculation of the Actuarial Value of Assets				
<i>(Dollars in Thousands)</i>				
a. Market Value at June 30, 2021				\$268,209
Deferred Gains and (Losses)				
Plan Year Ending	Original Deferred Gain/Loss	Years Deferred	Years Remaining	Current Deferred Gain/Loss
6/30/2021	(7,598)	3	2	(5,065)
6/30/2020	(6,788)	3	1	(2,263)
6/30/2019	3,117	2	0	0
6/30/2018	4,322	2	0	0
6/30/2017	12,591	7	2	3,598
b. Total Deferral				(\$3,730)
c. Market Value Less Deferral (a - b)				\$271,939
d. 70% of Market Value of Assets				187,746
e. 130% of Market Value of Assets				348,672
f. Actuarial Value of Assets*				\$271,939
g. Ratio of Actuarial Value to Market Value (f/a)				101%

Note: Totals may not agree due to rounding.

**The AVA may not exceed 130% nor drop below 70% of the MVA.*

This analysis is based on actual financial and asset information from the Washington State Investment Board, Office of the State Treasurer, and Office of Financial Management as of June 30, 2021. We relied on this information as complete and accurate but did not perform an audit. Please see our 2020 VAVR for a description of the asset valuation method, as well as for additional information on the development and use of the AVA.

Funded Status

Funded status is one measure that helps explain the health of a pension plan and represents the portion of members' earned benefits (measured by the EAN AAL) covered by the plan's valuation assets (measured by the AVA). The table below shows the combined funded status of the pension and relief plans for the last two measurement dates. Please note that we are showing this combined measure for educational purposes only, since the Board's adopted funding policy first allocates assets to fund pension benefits; any assets above the pension benefits' EAN AAL are then allocated to the relief benefits. For additional considerations on how to interpret the funded status, see our 2020 VAVR.

Change in Combined Funded Status for Pension and Relief Plans		
<i>(Dollars in Millions)</i>	2021	2020
EAN Accrued Liability	\$255.6	\$252.9
Actuarial Value of Assets	271.9	262.0
Unfunded Liability	(\$16.3)	(\$9.1)
Funded Ratio	106%	104%



Contribution Rates

The Volunteer Fire Fighter member contribution rates are set in statute, whereas the Board annually adopts contribution rates for Reserve Law Enforcement Officers (RLEO) and Emergency Medical Technicians (EMTs). As per RCW [41.24.030](#), employers of RLEOs and EMTs are required to pay the full cost of their benefits. As of the 2020 VAVR, RLEOs and EMTs comprise less than 2 percent of volunteers in the plans.

OSA did not update the contribution rate calculations for this valuation because they rely on the Present Value of Future Benefits (PVFB) and the Present Value of Future Service (PVFS) figures which were not updated as part of this roll-forward approach. These actuarial measures can be sensitive to the impacts of new hires who join the plan over the year, and as mentioned in the Liabilities portion of the Appendix, our roll-forward assumes no new hires.

In lieu of providing updated contribution rate calculations, we assess the reasonableness of the calculated pension and relief contribution rates from the 2020 VAVR.

Pension

Under current Board funding policy, the EAN funding method is used to determine pension contribution rates as a level-dollar amount. This method divides the contribution rate into a normal cost rate and a rate to amortize the Unfunded Actuarial Accrued Liability (UAAL).

In last year's valuation, we calculated the pension normal cost rate to be \$123 per person. By definition, we expect the level-dollar normal cost rate under the EAN funding method to remain stable over time. Therefore, we believe this calculated pension rate remains reasonable for the Board's consideration in their contribution rate adoption process this year. In addition, the 2021 AVA is larger than the estimated 2021 pension AAL, so we anticipate the UAAL contribution rate would remain at \$0.

Relief

Under current Board funding policy, the Aggregate funding method is used to determine relief contribution rates as a level-dollar amount. This method relies on PVFB and PVFS which we did not roll-forward as part of this valuation. In addition, when combined with the Board's adopted funding policy regarding the allocation of assets, this funding method tends to produce volatile calculated relief contribution rates from year to year. As a result, we did not assess the continued reasonableness of the calculated relief rate from the 2020 VAVR.

To address the annual volatility in the calculated relief contribution rate, OSA has been having conversations with the Board regarding the possibility of using the EAN funding method to calculate relief rates. Based on information from the 2020 VAVR, the calculated relief normal cost rate under the EAN funding method would have been \$218 per person (as shown in the table below, but not included in that report). Like the pension plan, we expect the level-dollar normal cost rate under the EAN funding method to remain stable over time, and therefore remains reasonable for the Board's consideration in their contribution rate adoption process this year.



**Development of Relief Plan Normal Cost
as of the 2020 VAVR**

(Dollars in Thousands)

Future Value of Fully Projected Benefits	\$42,377
a. Present Value of Fully Projected Benefits	\$19,325
b. Entry Age Normal Actuarial Accrued Liability	\$9,231
c. Present Value of Future Normal Costs (a - b)	\$10,094
d. Present Value of Future Service (PVFS)*	\$46,289
e. Per Person Entry Age Normal Cost (c/d in Dollars)	\$218

Note: Totals may not agree due to rounding.

**We calculated the Relief PVFS over all active relief members.*