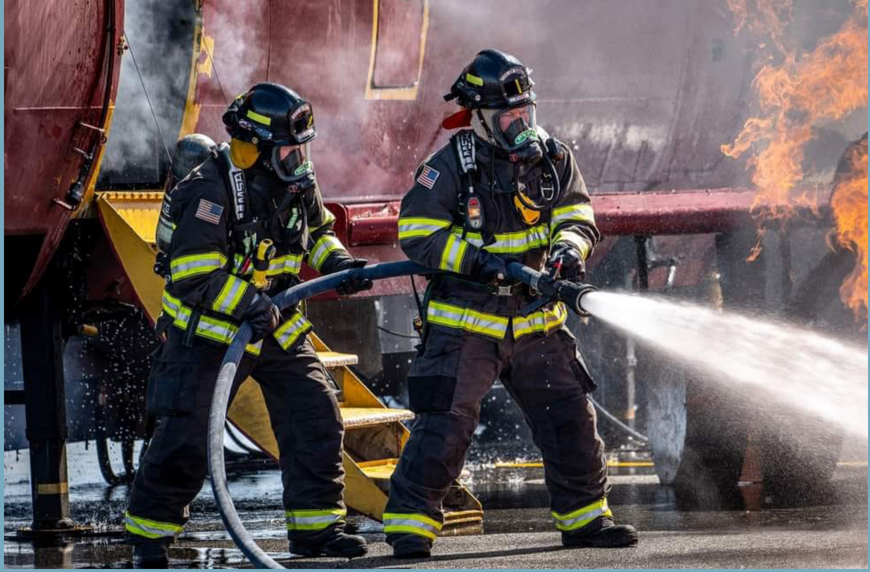

2022

ACTUARIAL VALUATION REPORT

Law Enforcement Officers' and Firefighters' Plan 2 Retirement Board

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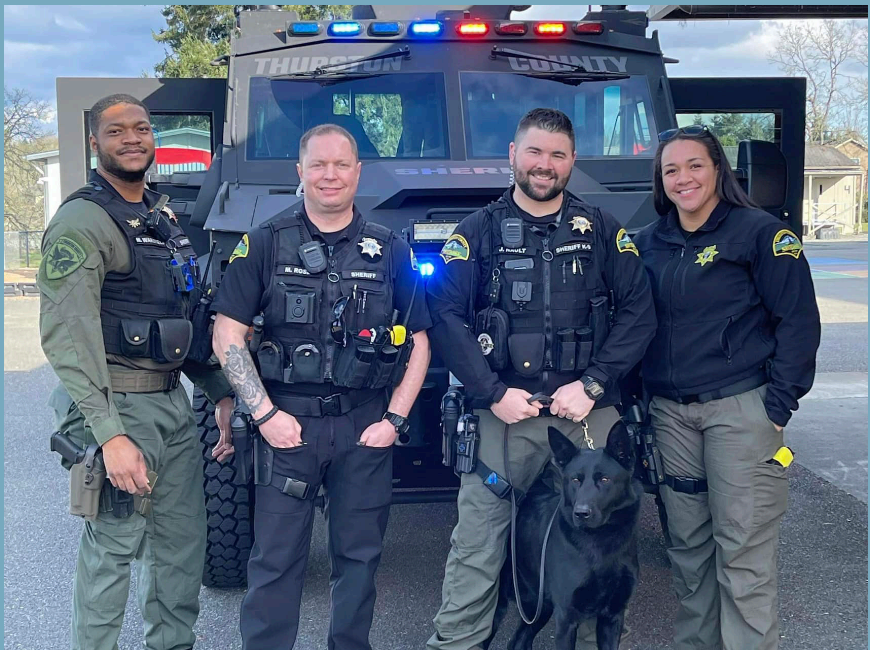

2022

ACTUARIAL VALUATION REPORT

Law Enforcement Officers' and Firefighters' Plan 2 Retirement Board

Table of Contents

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Washington State Investment Board

Legislative Support Services

Legislative Evaluation and Accountability Program Committee

LEOFF Plan 2 Retirement Board

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Letter of Introduction and Actuarial Certification

LEOFF 2 Actuarial Valuation Report as of June 30, 2022

October 2023

This report documents the results of an actuarial valuation of the Law Enforcement Officers' and Fire Fighters' Retirement System Plan 2 (LEOFF 2) as defined under Chapter 41.26 of the Revised Code of Washington (RCW). The purpose of this valuation is to provide an update on the funding progress for the retirement plan based on a June 30, 2022, valuation/ measurement date. This report represents a "non-rate setting" valuation, meaning we do not provide calculated contribution rates for the plan. Instead, we update key plan funding measures and reflect material developments in the plan over the past year. This report should not be used for other purposes and is not intended to satisfy the accounting requirements under the Governmental Accounting Standards Board rules. Please replace this report with a more recent report when available.

This report is organized in the following sections.

- Summary of Key Results.
- Actuarial Exhibits.
- Participant Data.
- Actuarial Assumptions and Methods.
- Resources.

The **Summary of Key Results** provides a high-level summary of the valuation including commentary on risk, funding policy, and key plan provisions. The **Actuarial Exhibits** provide detailed actuarial asset and liability information. The **Participant Data** section provides key metrics of the participant data such as headcounts, average benefits, and average salary. The **Actuarial Assumptions and Methods** section contains principal actuarial assumptions and methods used in this valuation. The **Resources** section outlines additional supplemental information found on our website.

The economic and demographic assumptions used in this valuation were adopted by the LEOFF 2 Retirement Board. Please see our *2021 Economic Experience Study (EES)* for further information on the economic assumptions. We developed the demographic assumptions used in this valuation during the *2013-2018 Demographic Experience Study*. The Legislature prescribed the actuarial cost and asset valuation method and minimum contribution rate funding policy. In our opinion, all data, methods, assumptions, and calculations are reasonable for the purposes of this measurement and are in conformity

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with generally accepted actuarial principles and standards of practice as of the date of this publication. The use of different data, methods, or assumptions could also be reasonable and could produce materially different results.

The Department of Retirement Systems (DRS) provided us with audited member and beneficiary data. We checked the data for reasonableness based on the purpose of the valuation. The Washington State Investment Board (WSIB) and DRS provided audited financial and asset information. We relied on all the information provided as complete and accurate; however, we did make adjustments (noted in the report) to reflect certain material changes occurring after the June 30, 2022, measurement date.

Future actuarial measurements may differ significantly from the current measurements presented in this report if plan experience differs from that anticipated by the assumptions, or if changes occur in the methods, assumptions, plan provisions, or applicable law. The Risk Assessment page of our website provides information to help readers assess the financial risks to the pension systems from unexpected experience. The Commentary on Risk page of our website provides additional risk education.

The undersigned, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. While this report 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 report to our mailing address or email address at state.actuary@leg.wa.gov.

Sincerely,

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

Kyle Stineman, ASA, MAAA
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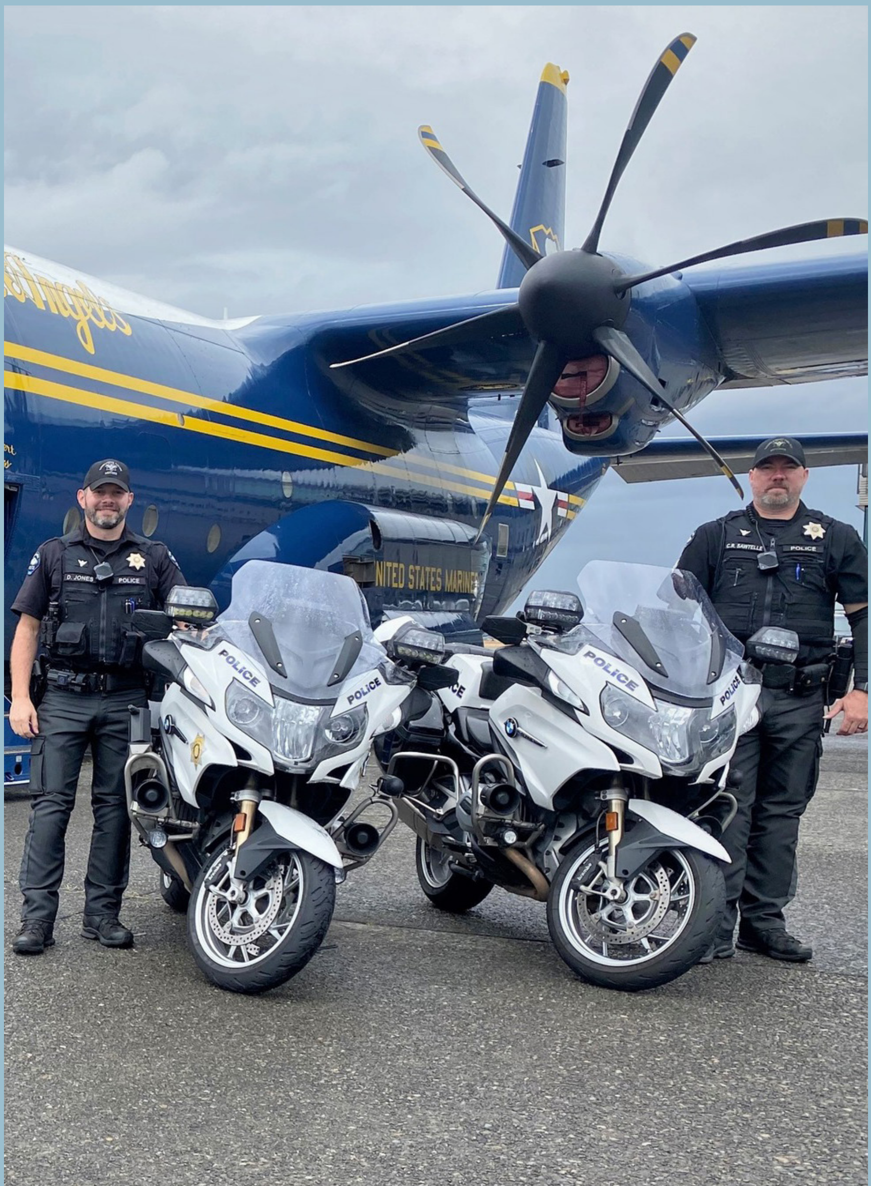
SECTION I.

SUMMARY OF KEY RESULTS



Comments on 2022 Valuation Results

Many factors influence actuarial valuation results from one measurement date to the next. These factors include changes in the plan provisions, changes in funding policy, changes in assumptions or methods, changes in the covered population and plan experience.

CHANGES IN PLAN PROVISIONS

Substitute House Bill (SHB) 1007, passed during the 2023 Legislative Session, provides fully subsidized interruptive military service credit to members of the state retirement systems who received an expeditionary medal during any armed conflict.

The law(s) noted above represent material changes to benefit plan provision from the 2023 Legislative Session and are not meant to be exhaustive.

CHANGES IN FUNDING POLICY

This valuation does not include any changes to funding policy since the prior measurement date.

CHANGES IN ASSUMPTIONS OR METHODS

- This valuation does not include any changes to economic or demographic assumptions since the prior valuation.
- We made adjustments to LEOFF 2 assets and participant data to reflect certain material changes occurring after the June 30, 2022, measurement date.

Please see the **Actuarial Assumptions or Methods** section of this report for more information and any further method and assumption changes since the last valuation.

CHANGES IN COVERED POPULATION AND PLAN EXPERIENCE

- The actual rate of investment return on the Market Value of Assets (MVA) for LEOFF 2, was 0.21 percent for Fiscal Year (FY) ending June 30, 2022.
- LEOFF 2 experienced a higher-than-expected number of terminations that exceeded prior valuation experience. This is reflective of the Great Resignation[1] that began in 2021.
- The plan experienced a larger number of new hires than in prior valuations; however, the active population ultimately declined over FY 2022 due to members leaving the plan.
- LEOFF 2 salaries grew notably more than expected.

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

Actuarial Liabilities

The following table summarizes key measures of actuarial liability along with the liabilities from last year's valuation. The Present Value of Fully Projected Benefits (PVFB) represents the total expected value of all future benefits payments for current members of LEOFF 2 when discounted at the valuation interest rate. The Actuarial Accrued Liability identifies the portion of the PVFB that has been accrued or "earned" as of the valuation date based on the Entry Age Normal (EAN) actuarial cost method.

[1] *Maury Gittleman, "The 'Great Resignation' in perspective", Monthly Labor Review, U.S. Bureau of Labor Statistics, July 2022.*

Actuarial Liabilities		
(Dollars in Millions)	**2022**	**2021**
Present Value of Fully Projected Benefits	$23,018	$21,075
Actuarial Accrued Liability	17,336	15,819
Valuation Interest Rate	7.00%	7.00%

See the **Actuarial Exhibits** section of this report for a summary of actuarial liabilities.

Assets

The following table shows the MVA and Actuarial Value of Assets (AVA) along with the approximate rates of investment returns.

We develop an AVA to limit the volatility in the reported funded status due to annual investment earnings. We smooth (or defer recognition of) the difference between actual and expected annual investment returns over a specific period not to exceed eight years.

Assets		
(Dollars in Millions)	**2022**	**2021**
Market Value of Assets (MVA)	$19,612	$19,637
Actuarial Value of Assets (AVA)*	17,985	16,494
Member/Employer Contributions	415	399
Disbursements	(499)	(425)
Investment Return	37	4,607
Other Revenue	$22	$21
MVA Return**	0.21%	31.65%
AVA Return*	9.69%	10.41%

**The AVA is used in determining contribution rates and funded status.*

***Dollar-weighted rate of return on the MVA, net of expenses. Please note the dollar-weighted investment return may differ from the time-weighted investment return published by the WSIB for the same period.*

See the **Actuarial Exhibits** section of this report for additional information and development of the AVA.

Funded Status

The following table displays the funded status for LEOFF 2.

Funded Status		
(Dollars in Millions)	**2022**	**2021**
a. Accrued Liability*	$17,336	$15,819
b. Market Value of Assets	19,612	19,637
c. Deferred Gains/(Losses)	1,628	3,142
d. Actuarial Value of Assets (b - c)	17,985	16,494
Unfunded Liability (a - d)	($648)	($676)
Funded Ratio (d / a)	**104%**	**104%**

Note: Totals may not agree due to rounding.

**Liabilities valued using Entry Age Normal cost method.*

Funded status is one of several measures that helps explain the health of a pension plan. The funded status represents the portion of the actuarial accrued liabilities covered by today's actuarial assets. This means a plan with 100 percent funded status has one dollar in actuarial assets for each dollar of accrued liabilities at the valuation date. A plan with funded status around 100 percent is generally considered to be on target with funding. However, funded status above/below 100 percent is not automatically considered over-funded/at-risk. The funded statuses presented in this report are not sufficient to determine whether a plan has enough assets to terminate or settle the plan obligations. Furthermore, a plan with a funded status above 100 percent may still require ongoing contributions. See the *2021 LEOFF 2 Actuarial Valuation Report* (LAVR) (the last "rate-setting valuation") for additional details.

Summary of Participant Data

The following table summarizes participant data used in the actuarial valuation for the plan year ending June 30, 2022, along with information from the 2021 valuation. See the **Participant Data** section of this report for additional information.

Participant Data		
	2022	2021
Active Members		
Number	18,625	18,683
Average Annual Salary	$129,107	$122,513
Average Attained Age	41.7	42.3
Average Service	12.4	13.1
Retirees and Beneficiaries		
Number	8,597	7,574
Average Annual Benefit	$58,873	$56,202
Terminated Members		
Number Vested	1,437	1,115
Number Non-Vested*	2,872	2,626

**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

Key Economic Assumptions

This table shows key economic assumptions used in this actuarial valuation. There were no changes in these assumptions from our prior year's valuation. Please see our 2021 EES for information on the development of these assumptions and the asset allocation policy.

Key Assumptions	
Valuation Interest Rate	7.00%
General Salary Growth	3.25%
Inflation	2.75%

Commentary on Risk

Actuarial Standards of Practice (ASOP) guide actuaries when performing and communicating their work. ASOP No. 51 – *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions* is specific to communicating risk in defined benefit pension plans, particularly in how actual future measurements may differ significantly from expected future measurements.

In the course of developing our actuarial valuation we make hundreds of assumptions, such as the level of returns on future investments, rates of retirement and mortality, and the future salary growth for active members. In some cases, small changes in these assumptions or unexpected plan experience can lead to significant changes in measurements, like the calculation of a plan's contribution rates or the projection of a plan's funded status. This can affect plan risk, and these sensitivities can evolve as the plan grows and matures over time. The LEOFF 2 Board and the Legislature's response to these changes and their actions governing the state's pension system also affects plan risk. To help readers better understand some of these risks and their potential impacts, we have a Commentary on Risk webpage which can be found on our website.

Funding Policy and Contribution-Rate Setting Process

Washington State relies on systematic actuarial funding to finance the ongoing cost of the state retirement systems. Under this financing approach, we reduce the cost of future pension payments by the expected long-term return on invested contributions. The state's funding policy is found in Chapter 41.45 RCW – Actuarial Funding of State Retirement Systems. If all actuarial assumptions are realized and all future contributions required under the funding policy are made, we expect the funding policy to accumulate sufficient assets to provide for all future benefits for current members when due.

Under current Washington State law, in July of even-numbered years, the Board reviews the basic contribution rates calculated by the Board-retained actuary. These rates are based on an actuarial valuation performed on asset, participant, and plan information compiled in odd-numbered years. In calculating basic contribution rates, the Board-retained actuary applies the statutory funding policies described in this section. The Board then adopts contribution rates for LEOFF 2 as provided under RCW 41.26.720(1)(a). The adopted rates remain in place for the ensuing biennium, subject to revision by the Legislature. Furthermore, newly enacted benefit improvements may result in additional supplemental rates effective on September 1. The following table shows key information for the contribution rate-setting process in the current and subsequent biennia.

Contribution Rate-Setting Process			
	Contribution Rate Collection Period*		
	2023-25 Biennium	2025-27 Biennium	2027-29 Biennium
Actuarial Valuation Date	June 30, 2021	June 30, 2023	June 30, 2025
Asset Returns Included	Returns through June 30, 2021	Returns through June 30, 2023	Returns through June 30, 2025
Rates Adopted During	Summer of 2022	Summer of 2024	Summer of 2026

**Adopted contribution rates are subject to change by the Legislature.*

We did not calculate contribution rates as part of this non-rate setting valuation.

Projected Contribution Rates

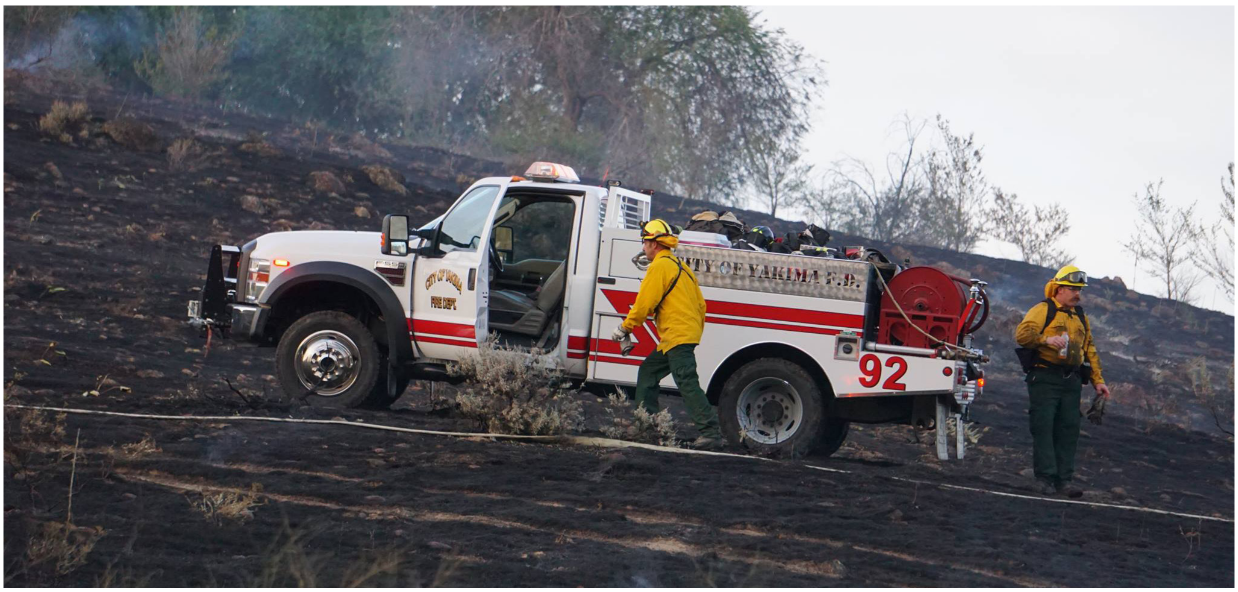
In addition to calculating contribution rates in the 2021 LAVR, we also estimate contribution rates for future biennia based upon projected assets and liabilities. These projected rates can be found on our website and will be available in the fall of 2023.

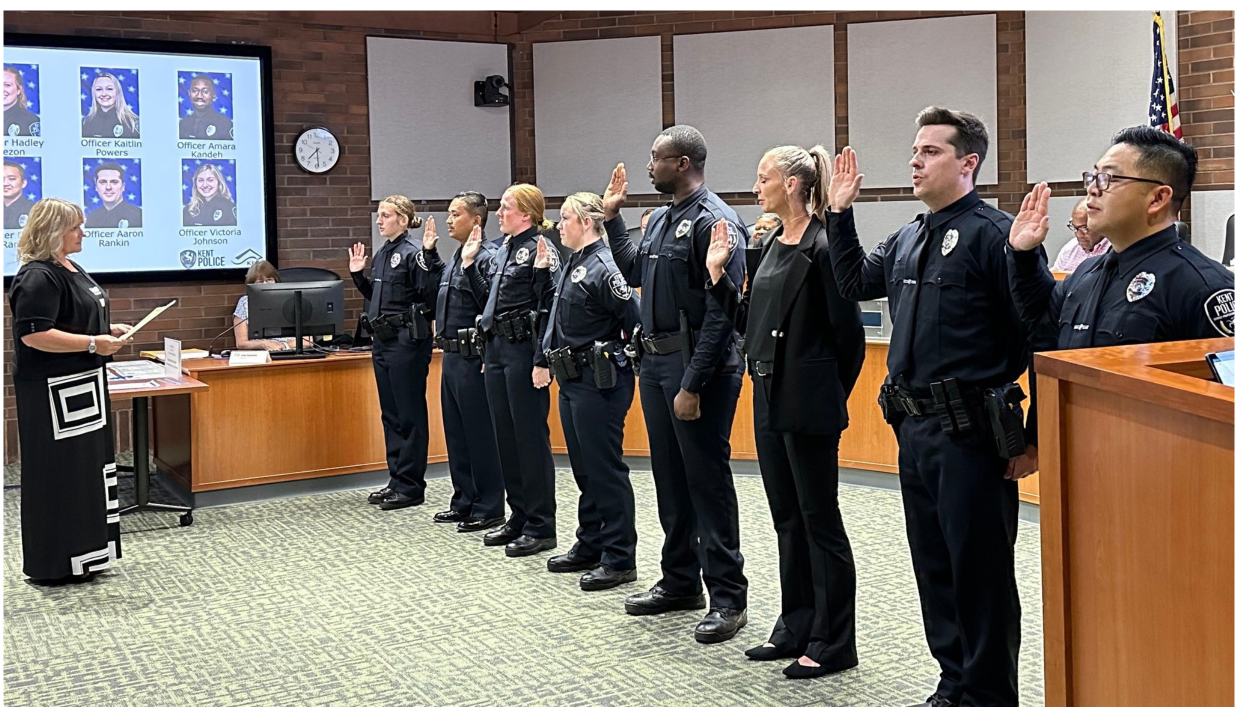
Please note that these projected rates are subject to change based on modifications to plan provisions, assumptions, and the actual experience of the systems.

Summary of Plan Provisions

Please see the plan provisions section of the prior valuation for a list of key plan provisions that change frequently. Our website contains information on COLAs and a Summary of Plan Provisions that infrequently change.

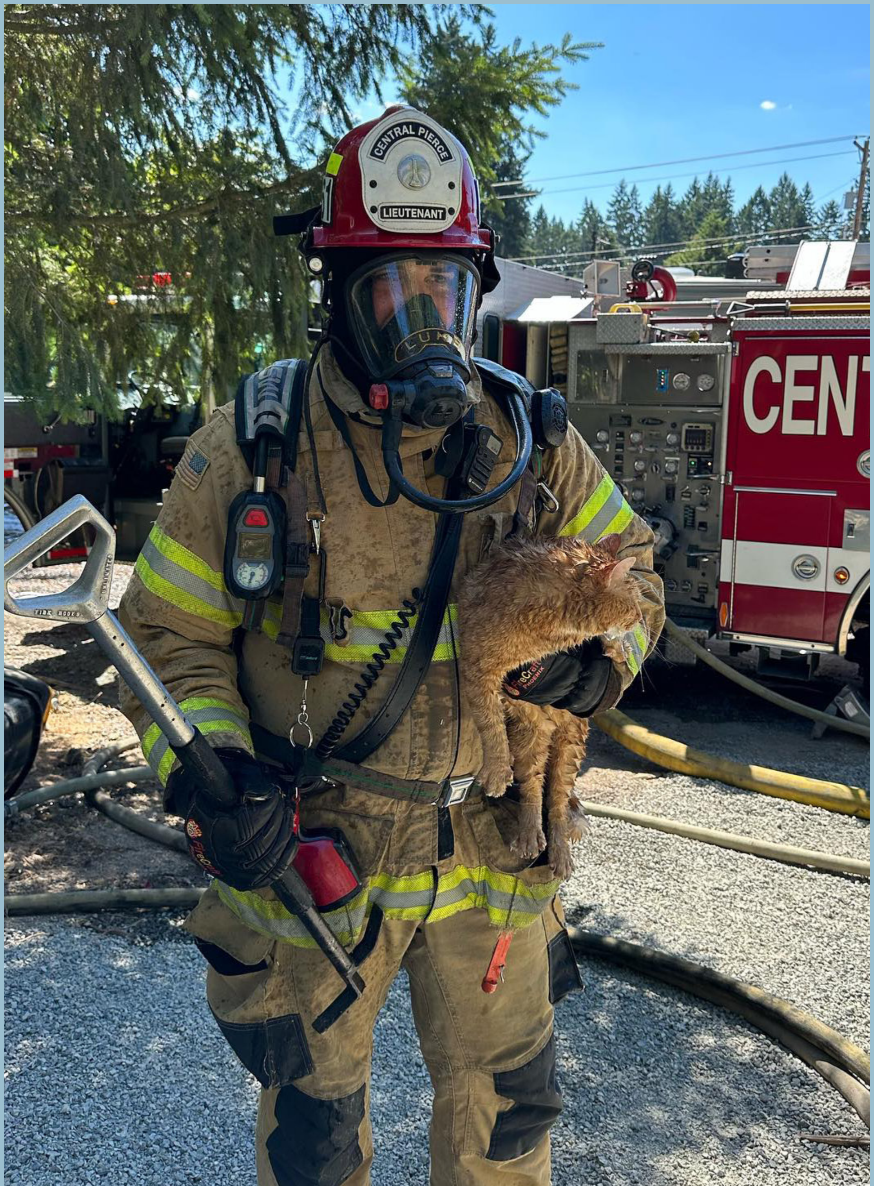
Not reflected in this report is the reduction of interest applied to Plans 1 and 2 employee contributions to the defined benefit plans from 5.5 percent to 2.75 percent, effective July 1, 2022. This change will primarily impact members who elect to receive a return of contributions upon termination from employment and will first be reflected in the 2023 LAVR. Otherwise, no significant plan provisions were excluded from this valuation.





SECTION II.

ACTUARIAL EXHIBITS



Key Results

The following table shows select liability, salary, assets, and funded status measurements as of June 30, 2022.

Actuarial Results	
(Dollars in Millions)	
Present Value of Fully Projected Benefits	
Active Members	$14,111
Inactive Members	8,907
2022 Total	**$23,018**
Present Value of Projected Salaries to Current Members (PVS)	
Plan 2	$28,558
Entry Age Normal Actuarial Accrued Liability	
Active Members	$8,430
Inactive Members	8,907
2022 Total (A)	**$17,336**
Assets	
Market Value of Assets	$19,612
Actuarial Value of Assets (B)	$17,985

Funded Ratio	
Unfunded Accrued Liability (A) - (B)	($648)
2022 Funded Ratio (B) / (A)	**104%**
Historical Funded Ratio	
2021	104%
2020	113%
2019	111%
2018	108%
2017	109%
2016	105%
2015	105%
2014	107%

Note: Totals may not agree due to rounding.

Please keep in mind a few important notes on funded status. A plan with a funded status above 100 percent will still require future contributions if the plan has not yet accumulated sufficient assets to cover the PVFB. The funded status will change if calculated using assumptions and methods that vary from this report. Please visit our Interactive Reports webpage for funded status measures that vary by interest rate and asset valuation method under the latest rate setting valuation (2021 LAVR).

Plan Assets

The following tables show the MVA changes from the previous valuation and development of the AVA. We calculated the AVA by smoothing or deferring investment gains or losses and recognizing past deferred assets consistent with funding policy in RCW 41.45.035. Please visit the Asset Valuation Method section in our Actuarial Methods webpage for more information.

Change in Assets	
(Dollars in Millions)	
Reconciliation of Market Value of Assets	
2021 LAVR Market Value	**$19,637**
Remove Prior Adjustments to 2021 LAVR	(450)*
2021 Unadjusted Market Value	**$19,187**
Contributions	415
Investment Returns	37
Other Revenue**	22
Disbursements	(499)
2022 Adjustments to Market Value	451*
2022 LAVR Market Value (A)	**$19,612**
Development of Actuarial Value of Assets	
Deferred Investment Gain/(Loss)* **	
Plan Year Ending 6/30/2022	($1,112)
Plan Year Ending 6/30/2021	2,643
Plan Year Ending 6/30/2020	0
Plan Year Ending 6/30/2019	0
Plan Year Ending 6/30/2018	0
Plan Year Ending 6/30/2017	97
Plan Year Ending 6/30/2016	0
Total Deferred Investment Gain/(Loss) (B)	**$1,628**
2022 Actuarial Value (A) - (B)	**$17,985**
Ratio (Actuarial Value/Market Value)	**92%**

**Re-stated the 2021 Market Value of Assets adjustment to include the balance of the Benefit Improvement Account, as of the current valuation date, to reflect the transfer into the LEOFF 2 trust under SHB 1701 (Chapter 125, Laws of 2022).*

***Includes additional annuity purchases and service credit purchases.*

****The investment losses for plan year ending 6/30/2022 are smoothed over a 7-year period. Please see the 2021 LAVR for a list of smoothing periods for the remaining plan years.*

Investment Gains and (Losses) for Fiscal Year		
(Dollars in Millions)		
a.	**2021 Market Value***	$19,121
b.	**Total Cash Flow**	(65)
c.	**2022 Market Value***	19,095
d.	**Actual Return (c - b - a)**	**$39**
e.	**Weighted Asset Amount**	$19,094
f.	**Expected Return (7.0% x e)**	1,337
g.	**Investment Gain/(Loss) for Prior Year (d - f)**	($1,297)
h.	**Dollar-Weighted Rate of Return***	0.21%

Note: Totals may not agree due to rounding.

**Source: Washington State Investment Board.*

Additional information on the Retirement Commingled Trust Fund, including the asset allocation policy, can be found in the most recent EES.

Actuarial Gain/Loss

Actuaries use gain/loss analysis to compare actual changes to assumed changes from various sources with respect to assets, liabilities, and salaries. We also use this analysis to determine:

- The accuracy of our valuation model and annual processing.
- Why the unfunded liability changed.
  - We observe changes to contribution rates during rate-setting LAVRs.
- The reasonableness of the actuarial assumptions.

Actuarial gains will reduce unfunded liabilities and increase funded status; actuarial losses will increase unfunded liabilities and decrease funded status. Under a reasonable set of actuarial assumptions, actuarial gains and losses will offset over long-term experience periods. The following tables display actuarial gains and losses expressed as the change in unfunded PVFB. Unfunded PVFB is the difference between PVFB (today's value of all future benefits for current members when discounted at the valuation interest rate) and the AVA. It is used in the development of normal cost contribution rates in rate-setting valuations. This is a useful metric for actuarial gain/loss because it reflects changes in liabilities during FY 2022 along with any changes in plan assets.

Change in Unfunded PVFB by Source	
(Dollars in Millions)	
2021 Unfunded PVFB Before Laws of 2022	**$4,580***
Expected Change	(113)
Expected 2022 Unfunded PVFB	**$4,467**
Liabilities	
Salaries	$475
Termination	(203)
Retirement	58
Disability	1
Mortality	(2)
Growth/Return to Work	605
Other Liabilities	37
Total Liability Gains/(Losses)	**$971**
Assets**	
Contributions	($18)
Disbursements	(1)
Investment Returns	(400)
Total Asset Gains/(Losses)	**($419)**
Incremental Changes	
Plan Change	$0
Method Change	0
Assumption Change	0
Correction Change	0
Experience Study Change	0
Other Changes	0
Total Incremental Changes Gains/(Losses)	**$0**
Other Gains/(Losses)	(0)
2022 Results	
Total Change	**$552**
2022 Preliminary Unfunded PVFB	**$5,019**
Laws of 2023	$14
2022 Adjusted Unfunded PVFB	**$5,033**

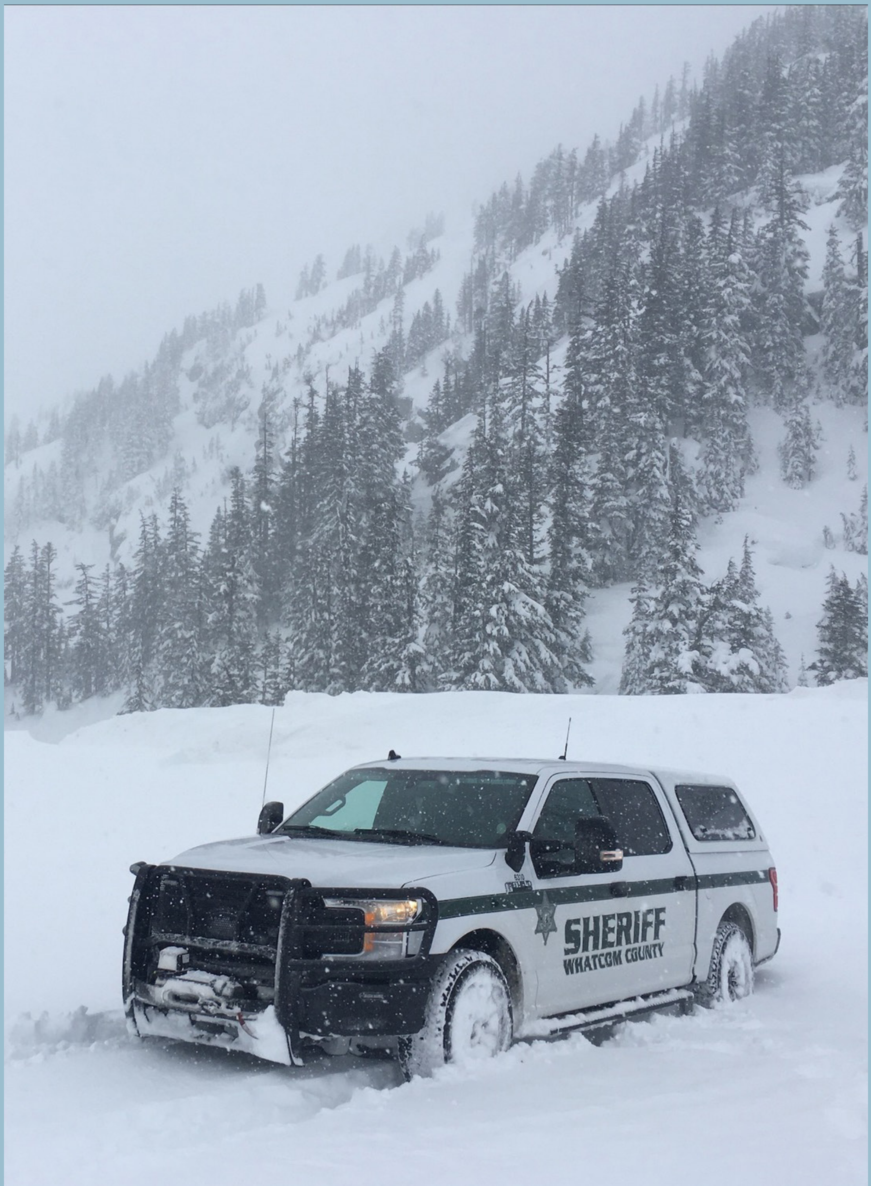
Note: Totals may not agree due to rounding.

**Includes the liabilities from benefit improvements under SHB 1701 (Chapter 125, Laws of 2022).*

***Asset Gain/Loss performed on AVA not MVA.*

SECTION III.

PARTICIPANT DATA



LEOFF 2 membership includes firefighters; emergency medical technicians; law enforcement officers including sheriffs; university, port, city police officers; and enforcement officers with the Department of Fish and Wildlife.

The following table shows participant data changes from the prior valuation to this year's valuation. We divide the participant data into two main categories:

- **Actives** — Members actively employed and accruing benefits in the plan.
- **Annuitants** — Members and beneficiaries receiving post-retirement benefits from the plan.

We also provide the ratio of active to annuitant members. This is one way to track overall plan maturity, and its associated risks, with a smaller ratio indicating a more mature plan. Risks can emerge over time just by the nature of a pension plan growing or maturing. For example, as a plan matures - with fewer active, contributing members relative to the retiree population – the plan's obligations become larger relative to its source of contributions. Additional Commentary on Risk can be found on our website.

Reconciliation of Active and Annuitant Data	
2021 Actives	18,683
Hires/Rehires	1,770
New Retirees	(907)
Deaths	(26)
Terminations	(895)
2022 Actives	**18,625**
2021 Annuitants	7,574
New Retirees	1,061
Annuitant Deaths	(69)
New Survivors	46
Other	(15)
2022 Annuitants	**8,597**
Ratio Actives to Annuitants	**2.17**

Note: Figures exclude legal order payees entitled to a portion of member benefits under a court-ordered property division.

Summary of Plan Participants

Summary of Plan Participants	2022	2021
Active Members		
Number	18,625	18,683
Total Salaries *(Dollars in Millions)*	$2,405	$2,289
Average Age	41.7	42.3
Average Service	12.4	13.1
Average Salary	$129,107	$122,513
Terminated Members		
Vested	1,437	1,115
Non-Vested*	2,872	2,626
Total Terminated	**4,309**	**3,741**
Annuitants**		
Service Retired***	7,606	6,698
Disability Retired	615	543
Survivors	376	333
Total Annuitants	**8,597**	**7,574**
Avg. Monthly Benefit, All Annuitants	$4,906	$4,684
Number of New Service Retirees	980	821
Avg. Benefit, New Service Retirees	$5,888	$5,597

Note: Totals may not agree due to rounding. Figures exclude legal order payees entitled to a portion of member benefits under a court-ordered property division.

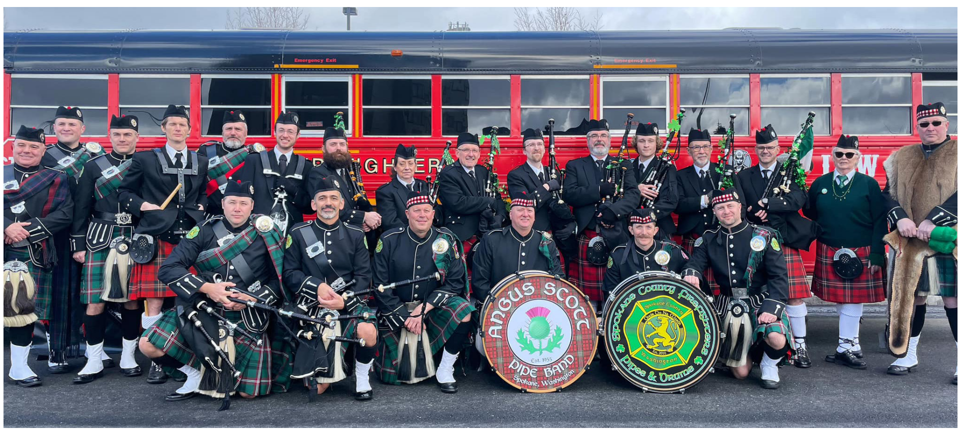
**Members who terminated without a vested lifetime benefit but are eligible for a refund of their employee contributions with interest that currently reside in the trust.*

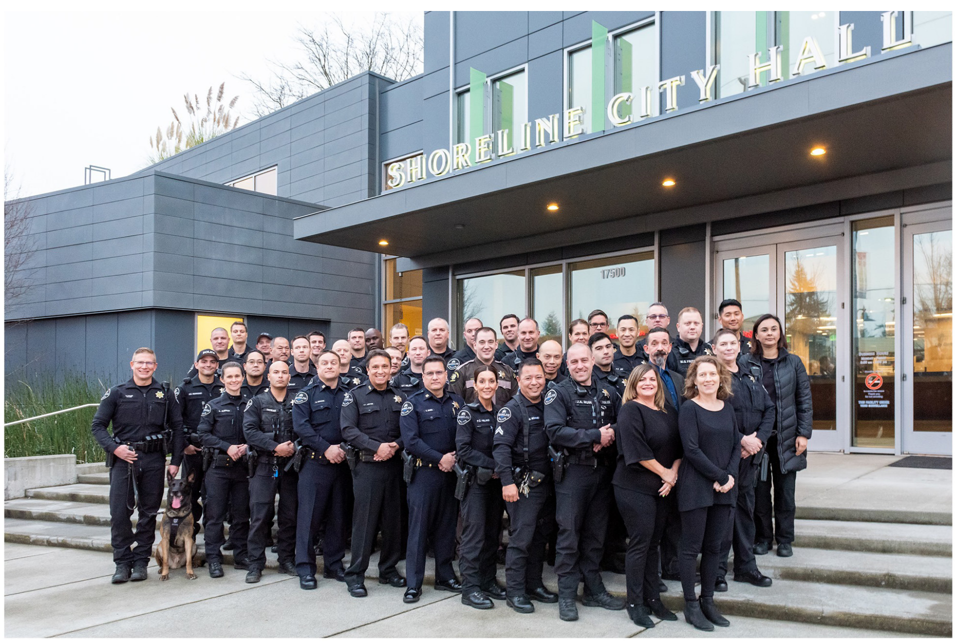
***Includes adjustments to reflect newly retired members who selected a higher retirement benefit in lieu of a lump sum payment under SHB 1701 (Chapter 125, Laws of 2022).*

****Includes retirements from active and terminated with vested status.*

Active Membership By Employer	
State Agencies	136
Higher Education	92
Counties	2,872
County Sub Divisions	434
First Class Cities	5,003
Other Cities	5,118
Ports	205
Fire Districts	4,765
Total	**18,625**

Retirement Age and Service		
	2022	2021
All Retired Law Enforcement Officers		
Average Entry Age	31.8	32.0
Average Age at Retirement	55.9	56.0
Average Service at Retirement	24.1	24.0
All Retired Fire Fighters		
Average Entry Age	31.1	31.2
Average Age at Retirement	57.2	57.2
Average Service at Retirement	26.1	26.0
All Members who Retired in the Last Year *(With 21-25 Years of Service)*		
Average Monthly Final Average Salary	**$10,244**	**$10,037**

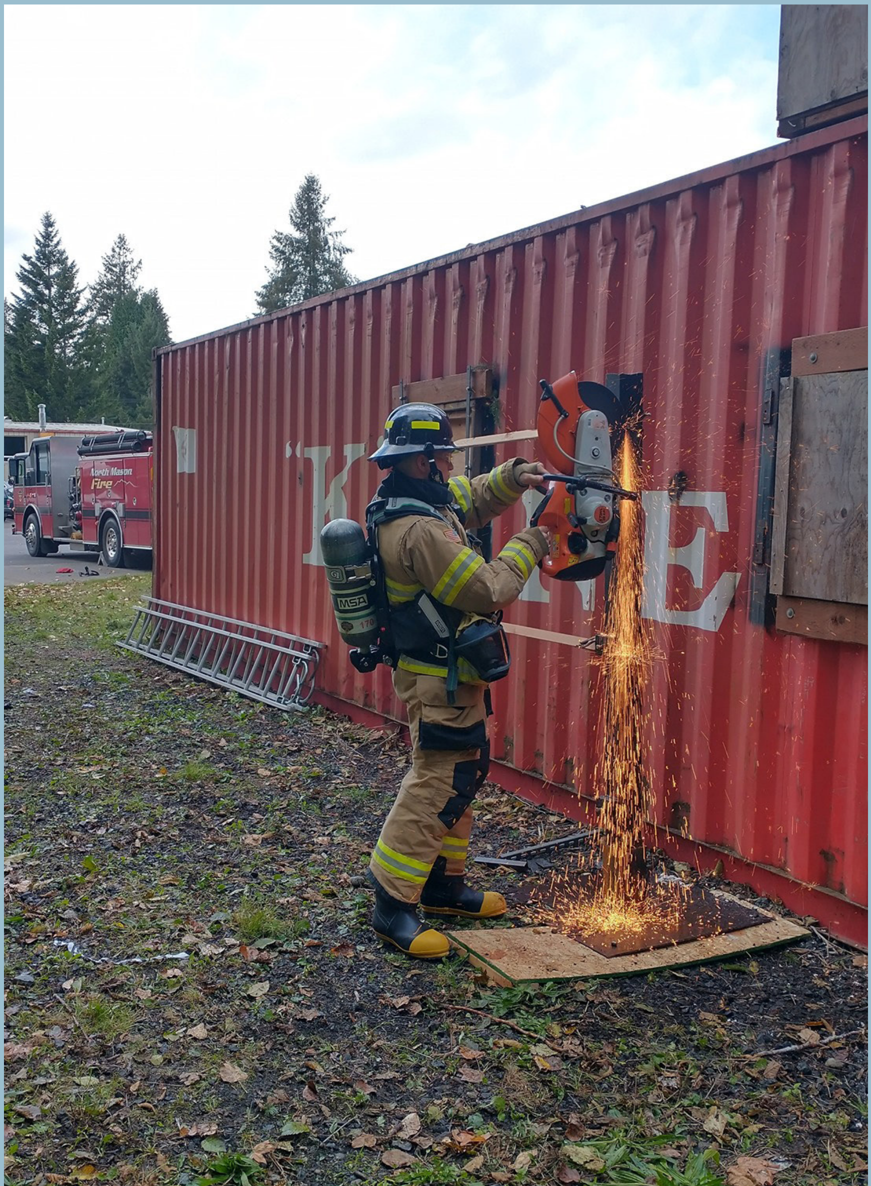




Shoreline Police Department
December 2019

SECTION IV.

ACTUARIAL ASSUMPTIONS OR METHODS



The section below lists the methods and assumptions that change regularly or are new since the last valuation report. Please see our Actuarial Methods webpage for descriptions of the actuarial cost methods and asset valuation method we use for this valuation, and please see our Actuarial Assumptions webpage for descriptions of all remaining assumptions.

Changes in Methods and Assumptions Since the Last Valuation

We adjusted LEOFF 2 liabilities and plan assets in relation to SHB 1701 (Chapter 125, Laws of 2022). This bill provided an increase to pension benefits, moved assets from the LEOFF 2 Benefit Improvement Account (BIA) to the trust fund making those assets available to fund current law benefits, and adjusted minimum contribution rate policy. We originally incorporated the impacts of this legislation in the 2021 LAVR. For this year's valuation, we made the following adjustments:

- Using supplemental information provided by DRS, we modified the 2022 participant data file to reflect higher retirement benefits for newly retired members of LEOFF 2 who selected the tiered service credit multiplier. This modification accounts for the higher monthly benefits, and retroactive payments to the date of retirement, that were provided to these members near the start of calendar year 2023.
- We included the balance of the LEOFF 2 BIA as of June 30, 2022, to model the transfer to the LEOFF 2 trust directed under SHB 1701 (Chapter 125, Laws of 2022). Previously, we relied on the June 30, 2021, BIA balance.
- We updated liabilities associated with retiree lump sum benefit payments based on actual payment information supplied by DRS and the new valuation date.

COMMENTS ON VALUATION MODEL

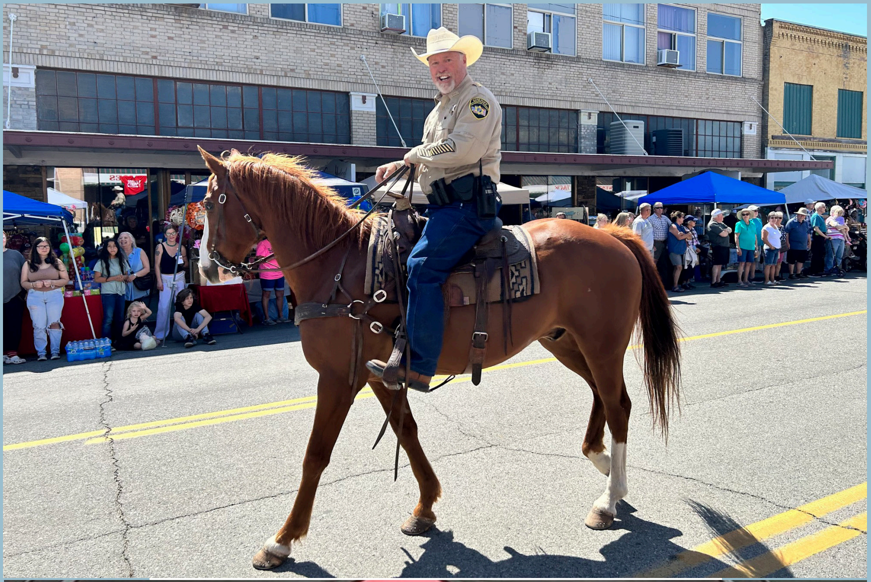
As required under ASOP No. 56 – *Modeling*, we share the following comments related to our reliance on the ProVal® software developed by Winklevoss Technologies.

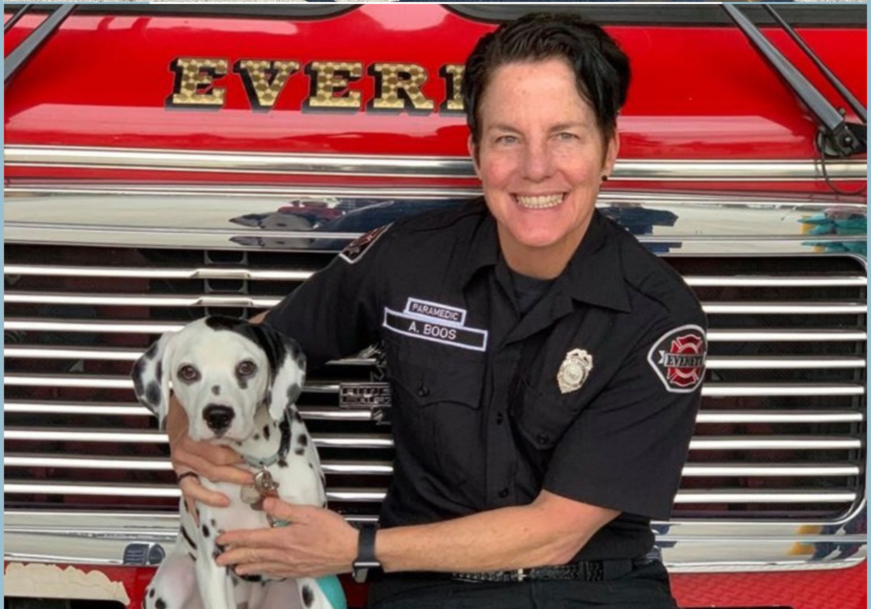
- We understand this software model was primarily created for use by actuaries when performing valuations and projections of pension and retiree medical plans. The use of the model for this analysis is appropriate given it's intended purpose.
- To assess the general operation of the model, we reviewed the output for reasonableness. This includes comparing the results to our simplified estimates done in Microsoft Excel and examining sample lives to confirm the programming is working as intended. We are not aware of any known weaknesses or limitations of the model that have a material impact on the results.
- The Board hires auditors to independently review and replicate the results of rate-setting valuations. This process provides an additional reasonableness check of the model output.

Additionally, we considered how the use of different inputs to the model (e.g., data/assumptions/provisions) produce different results and evaluated the relative impacts to our expectations. This allows us to gain a deeper knowledge of the model's important dependencies and major sensitivities.

SECTION V.

RESOURCES





The Office of the State Actuary's Website

Our website contains additional information and educational material not included in this report. The site also contains an archive of prior Actuarial Valuation Reports and other recent studies that OSA has produced. The following is a list of materials found on our website that could be useful to the reader.

Glossary

Definitions for frequently used actuarial and pension terms.

Age Distributions

Tables summarizing valuation statistics as of the latest rate-setting valuation.

Historical Data

Tables summarizing valuation statistics by valuation period.

Prior Actuarial Valuation Reports

Archive of valuations over the past several years.

2021 Report on Financial Condition and Economic Experience Study

Report examining the financial health of the retirement systems and long-term economic assumptions.

2013-2018 Demographic Experience Study

Most recent report examining demographic behavior.

Risk Assessment

Information examining the effect of unexpected experience on the retirement systems.

Commentary on Risk

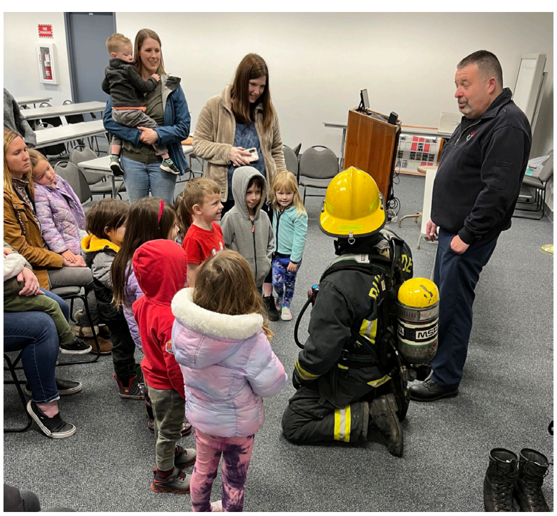
Educational information on the risks inherent in our actuarial measurements and how these measurements could vary under different circumstances.

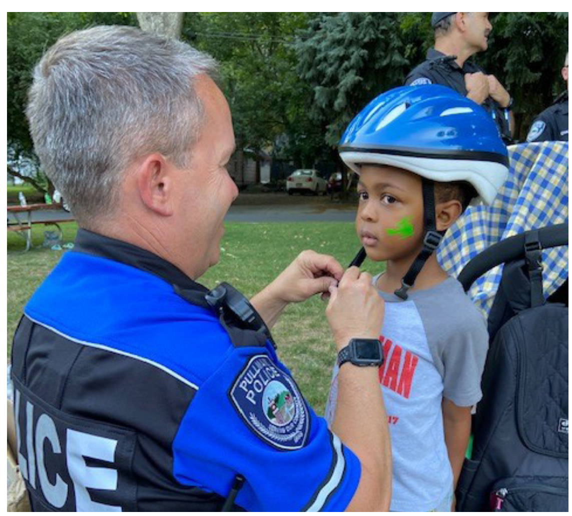
Contribution Rate Projections

Forecasts for future contribution rates based on projected assets and liabilities.

Interactive Reports

Set of reports displaying funded status, projected benefit payments, and contribution rates as of the latest rate-setting valuation.





2022

ACTUARIAL VALUATION REPORT

Law Enforcement Officers' and Firefighters' Plan 2 Retirement Board

Office of the State Actuary
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