

Virginia Retirement System

Actuarial Valuation Report of the Line of Duty Act Fund

As of June 30, 2022





April 4, 2023

Board of Trustees
Virginia Retirement System
1200 E. Main Street
Richmond, VA 23219

Dear Trustees:

The results of the June 30, 2022 annual actuarial valuation of the Virginia Retirement System (VRS) Line of Duty Act (LODA) Fund are presented in this report. This report was prepared at the request of the Board and is intended for use by the VRS and those designated or approved by the Board. This report may be provided to parties other than the VRS only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The purpose of the valuation is to provide pay-as-you-go full-time equivalent employer contribution rate for the Fiscal Year ending June 30, 2024 and to develop an Actuarially Determined Employer Contribution Rate (ADEC) to be used in Governmental Accounting Standards Board (GASB) Statement Nos. 74 and 75 reporting. This report should not be relied on for any other purpose.

Future actuarial measurements may differ significantly from those presented in this report due to such factors as experience differing from that anticipated by actuarial assumptions, changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. This valuation was based on the assumption that the participating employers will continue to be able to make any contributions necessary to fund the plan in the future. A determination of the participating employers' ability to make the necessary contributions in the future is beyond the scope of our expertise and was not performed by us.

The findings in this report are based on data and other information through June 30, 2022. The valuation was based upon information furnished by the VRS, concerning LODA health care claims, financial transactions, plan provisions and active members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the VRS.

Valuation liabilities were prepared using ProVal's valuation model, a software product of Winklevoss Technologies. We are relying on the ProVal model. We performed tests of the ProVal model with this assignment and made a reasonable attempt to understand the developer's intended purpose of, general operation of, major sensitivities and dependencies within, and key strengths and limitations of the ProVal model. In our professional judgment, the ProVal valuation model has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses.

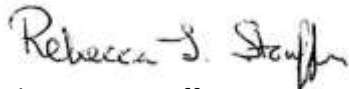
Financial results were prepared using our financing model which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report was prepared during the COVID-19 pandemic, which is likely to influence demographic, economic and health care experience, at least in the short term. Results in this report are developed based on available data without adjustment. We will continue to monitor these developments and their impact on the Fund. Actual experience will be reflected in each subsequent report, as experience emerges.

This report was prepared using assumptions adopted by the Board. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the Plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Rebecca L. Stouffer, Kurt Dosson, James D. Anderson and Michael D. Kosciuk are Members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

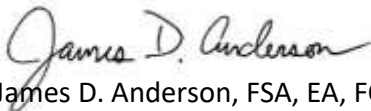
Respectfully submitted,
Gabriel, Roeder, Smith & Company



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RLS/KD/JDA/MDK:sc



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EXECUTIVE SUMMARY

Executive Summary

1. Introduction and Purpose

This report contains the results of the June 30, 2022 actuarial valuation of the LODA Fund.

The historic practice has been that odd year valuations develop the Full-Time Equivalent (FTE) employer contribution rate to fund the plan on a pay-as-you-go basis. Each odd year valuation develops a flat annual contribution rate for two years, such that the resulting Fund balance at the end of the biennium is \$0. For example, the June 30, 2021 valuation developed the fiscal year 2023 and 2024 FTE employer contribution rate.

Even year valuations, such as this one, generally provide intermediate results and updates on the current and projected Fund status for informational purposes.

In the process of developing the informational results for the June 30, 2022 actuarial valuation, it was determined a revision to the previously established fiscal year 2024 FTE employer contribution rate was necessary in order to maintain short-term solvency of the Fund (please see item 2).

2. Development of LODA Fund FTE Employer Contribution Rate

Using scheduled fiscal year 2023 contributions and projected fiscal year 2024 contributions (based on the current 2024 Board certified FTE rate of \$681.84), the two-year cycle ending June 30, 2024 projects the Fund to be insolvent. The primary cause of the deficiency is a decrease in the count of eligible active participants, and thus a decrease in the amount of projected FTE employer contributions.

As a result, this June 30, 2022 valuation recommends an adjusted fiscal year 2024 rate to ensure the Fund will have sufficient monies available to pay projected benefits. This valuation develops a revised fiscal year 2024 FTE employer contribution rate based on:

- Updated asset information at June 30, 2022 of \$7,213,739;
- Updated 2022 Department of Human Resource Management (DHRM) invoice premiums and participant and beneficiary data;
- Scheduled FTE employer contributions of \$13,254,190;
- No projected investment income for fiscal year 2023;
- Establishing a reserve at the end of each two-year cycle equal to approximately one month's worth of benefit payments; and
- Implementation of integer FTE employer contribution rates, rounded to the nearest \$5 increment.

At the November 15, 2022 Board of Trustees meeting, a FTE employer contribution rate of \$830 was recommended and approved for FY 2024.

3. Experience

There are three general reasons why rates change from one valuation to the next. The first is a change in the benefits or eligibility conditions of the plan. The second is a change in the valuation assumptions used to project future occurrences. The third is the difference during the year between the plan's actual experience and what the assumptions expected.



There were no significant changes in plan benefits or eligibility conditions since the prior valuation.

Changes in valuation assumptions since the last valuation follow:

- Age grading factors for medical and prescription drug costs are updated based on aging on claims utilization tables developed by the Society of Actuaries in 2013;
- Age grading is removed from Medicare Part B premiums;
- Health care cost trend rates were reset; and
- Medicare Part B trend rates were updated to reflect the 2022 Medicare Trustees report.

Plan experience differed from expectations as follows:

- For the period ending June 30, 2022, the VRS reported investment return of 0.6% on a market value basis fell short of the assumed level of 6.75%;
- The number of FTE active participants decreased from 19,087 to 17,900; and
- The Department of Human Resource Management (DHRM) provided updated monthly invoice costs for LODA beneficiaries:
 - Pre-Medicare premiums increased roughly 6.7%, versus 7.0% expected;
 - Medicare eligible premiums increased roughly 1.0%, versus 5.25% expected; and
 - Medicare Part B premiums decreased roughly 3.1%, versus an increase of 6.97% expected.

See page 7 for additional details of the impact of assumption changes and plan experience.

4. General Comments

Section 9.1-400.1 of the Code of Virginia requires participating employers to make annual contributions to the Fund as determined by VRS. The amount of the contribution for each participating employer shall be determined on a current disbursement basis (i.e., pay-as-you-go) in accordance with the provisions of the Act. The Fund shall be used to provide the benefits of the Act to eligible disabled persons, deceased persons, dependents, and spouses on behalf of participating employers and to pay related administrative costs. Any moneys remaining in the Fund at the end of a biennium cycle shall not revert to the general fund but remain in the Fund.

In this report, employer contributions per FTE are computed for fiscal year 2024 such that projected assets at the end of fiscal year 2024 (the end of the biennium cycle) are expected to be sufficient to cover costs for the two-year period and provide approximately a one-month benefit reserve.

Future biennium LODA Fund contributions are projected to increase, due to the following:

- Health care inflation;
- A projected increase in the number of beneficiaries; and
- A projected static FTE employee count.

Lastly, the Actuarially Determined Contribution Rate (ADEC) for GASB Statement No. 74 reporting purposes increased from the prior valuation result of \$1,705.75 per FTE for fiscal year 2023 to \$1,917.15 per FTE for fiscal year 2024.



SECTION A

VALUATION RESULTS

Determination of Full-Time Equivalent Rate

The chart below shows the projected employer contributions, net benefit costs, administrative expenses and investment income. Employer contributions are projected over a level FTE employee base and projected to be sufficient over each biennium to provide a margin approximately equal to one month of benefit payments.

LODA fund assets are expected to earn 6.75% investment return annually. Projected benefit costs include death benefit payments and DHRM health care premium payments, which are offset by health insurance credit (HIC) reimbursements. Administrative expenses are projected to increase 3% annually from each prior year.

The Board certified rate for FY 2024 is \$830.00, set November 15, 2022.

All Participating Employer Groups - June 30, 2022 Valuation Basis							
	Actual		Projected				
	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
FTE Employees	19,087.20	17,899.70	17,899.70	17,899.70	17,899.70	17,899.70	17,899.70
Cash Flow (Per FTE Employee)							
Employer Contribution Rate ¹	\$ 722.55	\$ 740.47	\$ 830.00	\$ 1,150.00	\$ 1,150.00	\$ 1,350.00	\$ 1,350.00
Benefit Costs	(714.49)	(849.84)	(963.10)	(1,054.21)	(1,149.70)	(1,255.34)	(1,351.46)
Administrative Expenses	(38.43)	(42.21)	(43.48)	(44.78)	(46.13)	(47.51)	(48.94)
Investment Income	13.71	0	10.94	7.32	7.86	8.42	8.97
Net Cash Flow	(16.66)	(151.58)	(165.64)	58.33	(37.97)	55.57	(41.43)
Cash Flow							
Employer Contributions	13,770,559	13,254,190	14,821,207	20,552,494	20,552,494	24,188,015	24,188,015
Benefit Costs ²	(13,637,574)	(15,211,889)	(17,239,265)	(18,870,100)	(20,579,335)	(22,470,283)	(24,190,682)
Administrative Expenses ³	(733,600)	(755,608)	(778,277)	(801,625)	(825,674)	(850,444)	(875,957)
Investment Income ⁴	261,657	0	195,903	130,976	140,770	150,771	160,565
Net Cash Flow	(338,958)	(2,713,307)	(3,000,432)	1,011,745	(711,745)	1,018,059	(718,058)
End of Year Net Position	\$ 7,213,739	\$ 4,500,432	\$ 1,500,000	\$ 2,511,745	\$ 1,800,000	\$ 2,818,059	\$ 2,100,001

¹ The FY 2022 rate is the actual rate, as adjusted by the state legislature, to cover legislation effective July 1, 2021. The FY 2023 rate is an illustrative rate based upon a total scheduled employer contribution of \$13,254,190 with the reported June 30, 2022 FTE census. FY 2024 and subsequent rates reflect the revised method of developing an integer FTE rate, rounded to the nearest \$5 increment.

² Benefit costs are net of Health Insurance Credit offsets.

³ Net of Non-Participating Employer Administrative Fees.

⁴ FY 2023 calculation assumes no investment income.



Full-Time Equivalent Contribution Basis

Employers contribute on the basis of full-time equivalent active members (“employees”). Full-time, paid, and part-time positions are each considered in the determination of full weighting. Part-time members (National Guard) and volunteer positions are weighted 10% and 25%, respectively, of a full-time position, with the idea that these members are proportionately likely to incur duty death or disability benefits.

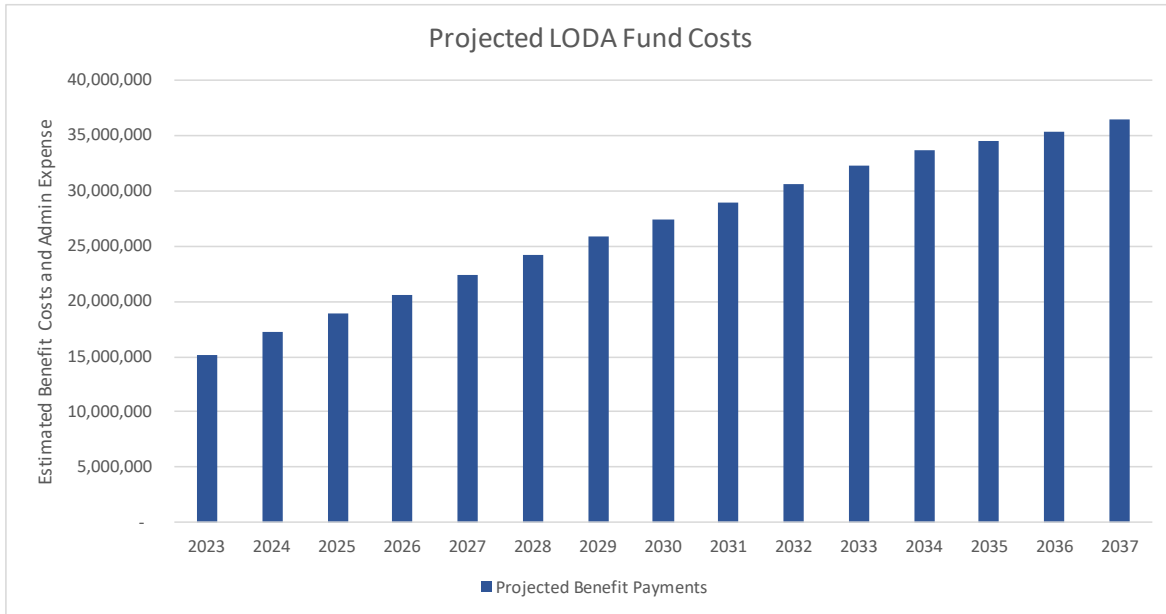
Employer Group	Weight	Fiscal Year Ending June 30, 2021		Fiscal Year Ending June 30, 2022	
		Active Employees	FTE Employees	Active Employees	FTE Employees
State/ValORS/SPORS	100%	9,577	9,577.00	8,701	8,701.00
National Guard					
Full-Time	100%	1,044	1,044.00	1,044	1,044.00
Part-Time	10%	7,522	752.20	7,522	752.20
<i>Total State & National Guard Employees</i>		18,143	11,373.20	17,267	10,497.20
Participating Political Subdivisions					
Full-Time	100%	7,106	7,106.00	6,875	6,875.00
Volunteers	25%	2,432	608.00	2,110	527.50
<i>Total Political Subdivision Employees</i>		9,538	7,714.00	8,985	7,402.50
<i>Aggregated Total</i>		27,681	19,087.20	26,252	17,899.70

Based upon 26,252 unique lives, the valuation projects employer contributions for a full-time equivalent member population of 17,899.70.

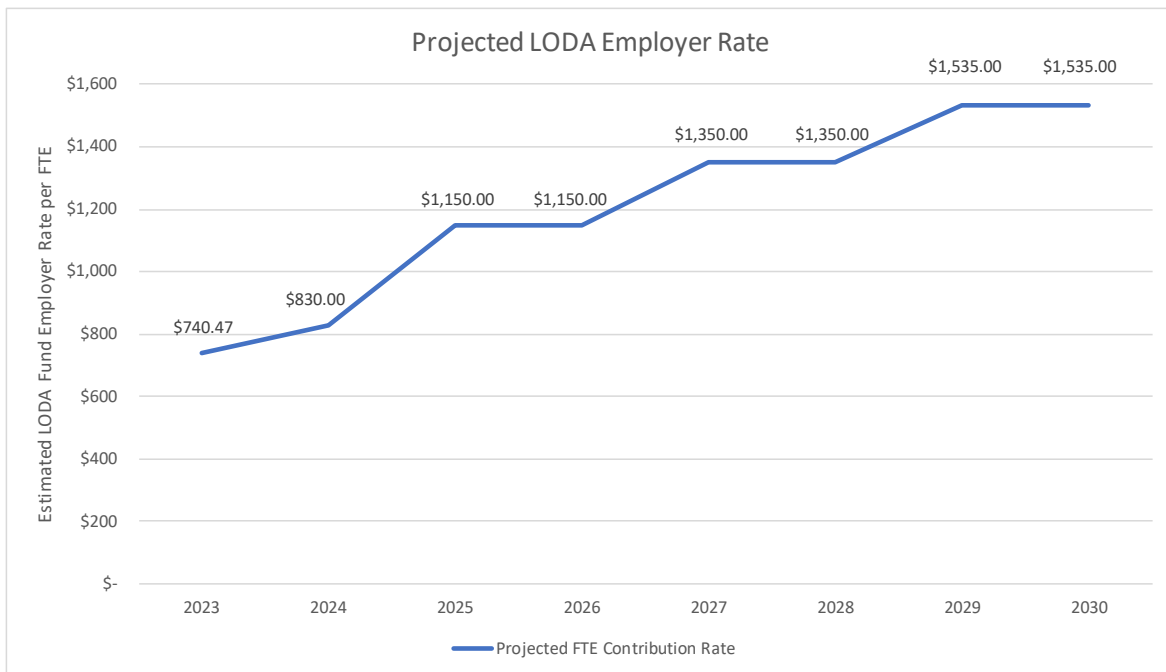
Projections of Benefit Payments and Contribution Rates

Looking Ahead

The graph below displays projected net benefit costs (death benefit payments and DHRM invoice premiums), net of projected HIC offsets. To the extent health care costs trend higher/(lower) than expected or more/(less) participants than expected qualify for benefits, the projected costs will be higher/(lower) than shown below.



The graph below projects the FTE Contribution Rate for the current and next three biennium.



Actuarially Determined Employer Contribution Rate

The chart below provides the Actuarially Determined Employer Contribution (ADEC), along with a comparison from the prior year. The ADEC is provided for use in Government Accounting Standards Board (GASB) Statements Nos. 74 and 75 reporting.

	Valuation Date	
	June 30, 2021	June 30, 2022
Number of FTE Employees	19,087.20	17,899.70
Number Receiving Benefits	<u>1,189.00</u>	<u>1,240.00</u>
Total	20,276.20	19,139.70
(a) Present Value of Future Benefits - Active Members	\$ 191,933,921	\$ 213,690,189
(b) Present Value of Future Benefits - Beneficiaries	<u>215,990,947</u>	<u>219,319,892</u>
(c) Present Value of Future Benefits - Total	407,924,868	433,010,081
(d) Present Value of Future Normal Cost	<u>152,660,290</u>	<u>160,835,724</u>
Total Actuarial Accrued Liability	255,264,578	272,174,357
Present Assets for Valuation Purposes	<u>7,553,000</u>	<u>7,213,739</u>
Unfunded Actuarial Accrued Liability	247,711,578	264,960,618
Actuarially Determined Employer Contribution (Dollars)		
Normal Cost	\$ 18,767,471	\$ 19,387,539
Administrative Expenses	565,000	733,600
Accrued Liability ¹	<u>13,225,521</u>	<u>14,146,433</u>
Total Contribution	\$ 32,557,992	\$ 34,267,572
Actuarially Determined Employer Contribution (Per FTE)		
Normal Cost	\$ 983.25	\$ 1,083.12
Administrative Expenses	29.60	40.98
Accrued Liability ¹	<u>692.90</u>	<u>790.32</u>
Total Contribution	\$ 1,705.75	\$ 1,914.42

¹ The unfunded actuarial accrued liabilities are amortized as a level percent of pay amount over a period of 30 years, resetting to 30 years each valuation.

Experience Gain/(Loss)

A. Derivation of Actuarial Gain/(Loss):

1. Unfunded Actuarial Accrued Liability (UAAL) - Previous Valuation	\$ 247,711,578
2. Total Normal Cost for Year Ending 6/30/2022	18,767,471
3. Total Contributions for Year Ending 6/30/2022	13,770,559
4. Interest on:	
a. UAAL: Discount Rate ¹ x (1)	16,720,532
b. Normal Cost and Contributions: Discount Rate / 2 x [(2) - (3)]	168,646
c. Net Total: (a) + (b)	16,889,178
5. Change in UAAL due to Benefit Changes	-
6. Change in UAAL due to Assumptions (Trend/Spouse Medicare)	6,710,660
7. Change in UAAL due to Methods (Age-Rating Factors/Part-B)	(6,003,670)
8. Expected UAAL Current Year:	
(1) + (2) - (3) + (4c) + (5) + (6) + (7)	270,304,658
9. Actual UAAL Current Year	264,960,618
10. Experience Gain/(Loss): (7) - (8)	5,344,040

B. Approximate Portion of Gain/(Loss) due to Investments (227,879)

C. Approximate Portion of Gain/(Loss) due to Liabilities: (A.9) - (B) 5,571,919

¹ Discount rate is 6.75%.

Experience Gain/(Loss) By Source

	Gain/(Loss)
1. Premiums. Gains and losses resulting from actual health care premiums in valuation year versus that assumed from prior valuation.	\$ 4,271,686
2. Investment Income. If there is greater investment income than assumed, there is a gain. If less income, a loss.	(227,879)
3. Demographic and Other. Gains and losses resulting from demographic experience, data adjustments, timing of financial transactions, etc.	1,300,233
4. Composite Gain/(Loss) During Year.	\$ 5,344,040



Comments

Comment A: LODA Fund benefits are funded on a pay-as-you-go basis, such that at the end of each biennium, Fund assets are expected to be depleted. Given the relative unpredictability of health care cost trends and recent declines in active member base, depleting the assets to a projected \$0 position may result in an asset deficiency. Effective with the June 30, 2022 valuation, a margin of approximately one month of projected benefit payments was introduced to provide a cushion for this uncertainty. Although unlikely, it is possible LODA Funds may be depleted in future years if many (or all) of the following occur in a particular year:

- Investment income is less than 6.75%;
- Employer contributions are less than projected;
- Health care costs increase at rates higher than assumed trend levels; or
- More active participants become beneficiaries than expected.

An analysis to the extent of future experience differing from expected is outside the scope of this study, and was not performed.

Comment B: LODA Fund assets are assumed to earn a 6.75% return on investment income. Generally, this is the actuarial assumption that has the largest impact on valuation results. However, given the nature of the pay-as-you-go funding, and relative magnitude of expected asset levels to benefit payments, the assumption, while still important, becomes less critical. Higher assumed investment return assumptions will result in a slightly lower FTE contribution rate.

Comment C: This valuation uses assumptions specific to the group of the participant, based on the following employment groups: VRS State Employees, VRS VaLORS, VRS SPORS, Top 10 Locals, and Non-Top 10 Locals. For purposes of valuation assumptions, National Guard members are included with Non-Top 10 specific assumptions. Assumptions used in this valuation rely heavily on analysis prepared for pension benefit purposes. To the degree future disability incidence doesn't align with assumptions, we will review the assumption for potential adjustment.

Comment D: The following plan provisions are valued to the extent they are reflected in actual experience. Each is difficult to explicitly quantify.

- The discontinuance of spouse health care coverage due to divorce or a surviving spouse remarrying;
- The discontinuance of disability health coverage due to periodic reviews of disability status;
- The suspension of health benefits (for those disabilities occurring after June 30, 2017) in years when DHRM verifies current income exceeds salary at the time of the disability, indexed for inflation; and
- Any extra \$20,000 death benefit payable to national guard members killed in action in any armed conflict.

Comments

Comment E: The ADEC is shown using an amortization of 30 years. Given there is no formal pre-funding of benefits, the 30 years is reset each year. A shorter amortization period would result in a higher ADEC. The ADEC shown on page 6 uses administrative expenses equal to the immediately preceding fiscal year end's actual expenses. For purposes of FTE contribution rate projections, this amount is anticipated to increase 3.0% annually.

Comment F: Future trends in health costs defy accurate prediction. To the extent that future costs increase more (or less) than projected in this report, the computed liabilities and the actuarially determined employer contributions will be higher (or lower) than shown in this report.

Comment G: Because retiree health benefits are not related to active member payroll, actuarially determined employer contributions are reported as a dollar amount, instead of expressed as a percentage of payroll. In cases where valuation payroll is missing or not provided, a value of \$10,000 is used (\$1 for volunteers).

Comment H: Unless otherwise indicated, any funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regards to any funded status measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. In addition, the measurement is inappropriate for assessing benefit security for the membership.
- (2) The measurement is dependent upon the actuarial cost method, which, in combination with the plan's funding policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions.

Comment I: Results shown prior to Fiscal Year ending June 30, 2022 were developed by the prior actuary.

SECTION B

FUND ASSETS

Reconciliation of Market Value of Assets

As of June 30, 2022, there is \$7,213,739 in the Fund for the sole purpose of providing benefits to qualified members and beneficiaries of the Act. The chart below shows the additions and deductions of asset values for the two prior fiscal years.

	For the Fiscal Year Ending	
	June 30, 2021	June 30, 2022
1. Funds available at beginning of year	\$ 4,333,324	\$ 7,552,697
Revenue for the year		
Employer contributions	13,632,927	13,770,559
Health Insurance Credit Offset	475,746	474,802
Administrative expenses - Non-Participating	153,750	177,000
Net investment income	3,031,369	261,657
2. Total revenue	\$ 17,293,792	\$ 14,684,018
Expenditures for the year		
Line of Duty Act reimbursements		
Health Care Benefits	13,094,992	13,987,376
Death Benefits	0	125,000
Administrative expenses - Participating	825,677	733,600
Administrative expenses - Non-Participating	153,750	177,000
Other expenses	0	0
3. Total Expenditures	\$ 14,074,419	\$ 15,022,976
4. Revenue less expenditures (2) - (3)	3,219,373	(338,958)
5. Funds available at end of year (1) + (4)	\$ 7,552,697	\$ 7,213,739

SECTION C

MEMBERSHIP DATA

Membership Data

Active Data

Data for use in the June 30, 2022 actuarial valuation of the Fund was provided by VRS. VRS collected active member participant data from the following participating employer groups:

- Virginia Law Enforcement Officers Retirement System (VaLORS)
- State Police Officers Retirement System (SPORS)
- Virginia State Lottery
- Virginia Department of Conservation and Recreation
- Virginia Department of Forestry
- Virginia Department of Motor Vehicles
- Virginia Department of Emergency Management
- Virginia Air National Guard[^]
- Virginia Army National Guard[^]
- Virginia Port Authority
- Fire companies or departments that provide fire protection services to the Virginia National Guard or Virginia Air National Guard facilities
- VRS Local Employers' Law Enforcement Officers of participating political subdivisions
- VRS Local Employers' members performing hazardous duties for participating political subdivisions
- Arlington County, Town of Appalachia, Town of Boones Mill, and Town of Pocahontas (independent from VRS)
- Law Enforcement, Firefighters, and EMTs of associated participating political subdivisions
- Firefighter trainees enrolled in a Fire Service course offered by the Virginia Department of Fire Programs

[^] Air National Guard and Army National Guard active membership data as of June 30, 2022 was not available, and June 30, 2021 data was used as a proxy.

Membership Data

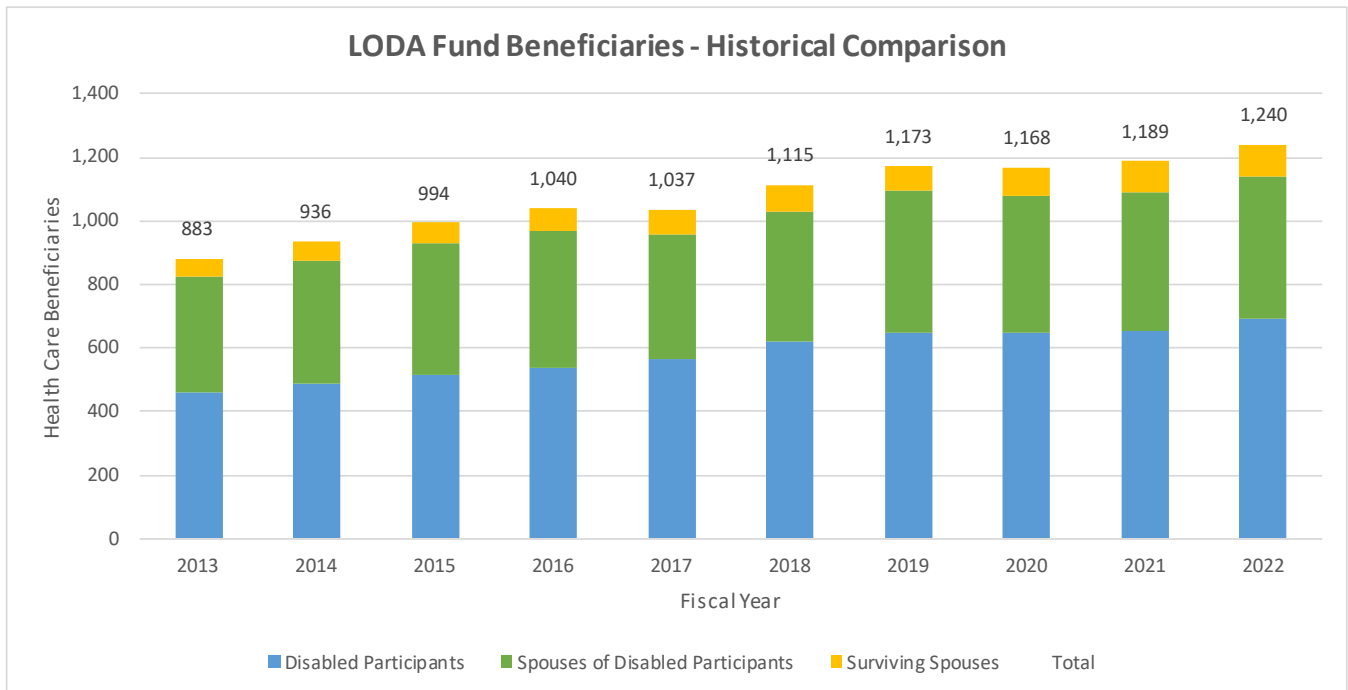
Counts by Membership Type

Group	June 30, 2021	June 30, 2022
Active Members (FTEs)	19,087	17,900
Disabled Members	653	691
Spouses of Disabled Members	440	449
Surviving Spouses	96	100
Total Count	20,276	19,140

Beneficiary Data

The following tables show the current and historical split of beneficiaries of the Fund:

Participating Employer Groups						
Beneficiary Type	June 30, 2021			June 30, 2022		
	State/ VaLORS/ SPORS	Political Subdivisions	Total	State/ VaLORS/ SPORS	Political Subdivisions	Total
Disabled Participants	250	403	653	265	426	691
Spouses of Currently Disabled Participants	162	278	440	171	278	449
Surviving Spouses	39	57	96	41	59	100
Total	451	738	1,189	477	763	1,240



Membership Data

Beneficiary Data (Continued)

The following table shows the history of beneficiary activity:

Schedule of Health Care Beneficiaries Added to and Removed From Rolls ¹						
Valuation Date	Number Added to Rolls	Annual Health Care Benefit Valued ²	Number Removed from Rolls	Annual Health Care Benefit Valued	Number on Rolls as of the Valuation Date	Annual Health Care Benefit Valued ³
6/30/2022	66	\$1,695,456	15	\$ 105,936	1,240	\$13,922,016
6/30/2021	37	883,704	16	80,976	1,189	12,332,496
6/30/2020	57	745,212	62	563,340	1,168	11,529,768
6/30/2019	85	1,096,944	27	2,529,540	1,173	11,347,896
6/30/2018	127	2,136,689	49	875,112	1,115	12,780,492
6/30/2017	80	2,996,579	83	947,054	1,037	11,518,915
6/30/2016	57	1,053,997	11	79,027	1,040	9,469,390
6/30/2015	70	1,091,255	12	104,397	994	8,494,420
6/30/2014	69	1,188,244	16	105,575	936	7,485,997
6/30/2013	128	1,069,073	66	448,046	883	6,403,328
6/30/2012	99	527,654	500	3,611,321	821	5,782,301

¹ Results shown prior to Fiscal Year ending 6/30/2022 are developed by the prior actuary.

² Beginning Fiscal Year ending 6/30/2022, benefit includes health care cost inflation for continuing members.

³ Non-Medicare and Medicare primary costs only (excluding part-B premiums).

SECTION D

HEALTH CARE COST INFORMATION

Health Care Cost Information

LODA health care claims are self-insured by the Department of Human Resource Management (DHRM) through the following health care providers:

- Anthem – Non-Medicare and Medicare medical and Non-Medicare prescription drug segments; and
- Express Scripts – Medicare prescription drug segment.

DHRM, in conjunction with Anthem, Express Scripts, and Aon, develops per capita health care costs for the LODA specific experience, trended forward to the appropriate effective date. The costs developed by this process are transferred to the LODA Fund for its participating beneficiary membership through premium invoices.

Because the LODA beneficiaries are a separately rated group, the premiums invoiced by DHRM reflect only the costs and expenses attributable to the disabled LODA participants and their dependents. We have reviewed these rates for suitability in the valuation process using the claim and administrative expenses, enrollment data, and trend assumptions provided.

The rates provided by DHRM, shown on page 17, were used as the basis of the underlying health care costs to the Fund.

Disabled members may elect to cover eligible spouses or dependents. As a result, for valuation purposes, the rates provided by DHRM are blended based on tiered coverage elections of current disabled participants. Child dependents are not explicitly valued, but costs associated with child coverage is included as a load in the costs below:

Initial Monthly Per Capita Adult Health Care Costs		
Valuation Date	Non-Medicare	Medicare Primary ¹
June 30, 2018	\$ 1,186.01	\$ 506.50
June 30, 2019	1,137.63	406.60
June 30, 2020	1,222.51	431.50
June 30, 2021	1,319.00	463.10
June 30, 2022	1,413.08	460.90

¹ Includes Medicare Part B premium.

The initial monthly per capita costs developed above are appropriate for the unique age and gender distribution currently existing. Over the future years covered by this valuation, the age and gender distribution will most likely change. Therefore, our process “distributes” the average premium over all age/gender combinations and assigns a unique premium for each combination. This process more accurately reflects health care costs in the retired population over the projection period.

Ageing factors used in this valuation were developed based on the information and data from a 2013 study commissioned by the Society of Actuaries entitled “Health Care Costs – From Birth to Death.” Beginning with the June 30, 2022 valuation, Medicare Part B premiums are not age graded.

SECTION E

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions

Statute

The benefits summarized in this section are intended only as general information regarding the Line of Duty Act Fund as reflected in the valuation. They are not a substitute for the Code of Virginia or VRS administrative procedures. If any conflict occurs between the information in this summary and the Code of Virginia or VRS administrative procedures, the Code of Virginia and VRS administrative procedures govern.

Code of Virginia, Title 9.1. Commonwealth Public Safety
Chapter 4, Line of Duty Act, §§ 9.1-400 through 9.1-408

Participating and Nonparticipating Employers

Any employer that is a state agency (i.e., employs a State Employee), that did not make an election to become a nonparticipating employer, on or before July 1, 2012, participates in the Plan. Political subdivision employer groups who elected to opt-out of the Plan are considered nonparticipating employers. Nonparticipating employers self-fund LODA Program benefits and assume responsibility for all benefit payments made after the election. This includes amounts paid to current beneficiaries for whom the political subdivision employer group is the employer of record.

Eligibility

Hazardous duty state and local government employees of the following groups, including volunteers, are eligible for the LODA Program benefits.

- Law-enforcement officers of the Commonwealth or any of its political subdivisions
- Correctional officers
- Jail officers
- Regional jail or jail farm superintendents
- Sheriff, deputy sheriff, city sergeant, or deputy city sergeant of the City of Richmond
- Police chaplains
- Members of fire companies or departments or rescue squads recognized by any county, city, or town of the Commonwealth as an integral part of an official safety program
- Virginia National Guard or the Virginia State Defense Force members, including fire companies or departments providing their fire protection services
- Special agents of the Virginia Alcoholic Beverage Control Board
- Special agents of the Virginia Cannabis Control Authority
- Full-time sworn members of the enforcement division of the Department of Motor Vehicles
- Conservation officers of the Department of Conservation and Recreation
- Commissioned forest wardens
- Members or employees of the Virginia Marine Resources Commission granted the power of arrest
- Department of Emergency Management hazardous materials officers
- Other employees of the Department of Emergency Management if performing duties related to a major disaster or emergency



Summary of Plan Provisions

- Employees of any county, city, or town performing official emergency management or emergency services duties in cooperation with the Department of Emergency Management
- Non-firefighter regional hazardous materials emergency response team members

Death Benefit

A \$100,000 death benefit payment for death occurring as a direct or proximate result of the performance of duty, or a \$25,000 death benefit payment for death by presumptive clause or within five years of retirement. An additional \$20,000 benefit is payable when certain members of the National Guard and U.S. military reserves are killed in action in any armed conflict on or after October 7, 2001.

Health Care Coverage Period

For disabilities and deaths occurring prior to July 1, 2017, that result in health care coverage under the Plan, disabled employees, their spouses, and surviving spouses receive lifetime health care benefits. For disabilities and deaths occurring after June 30, 2017, that result in health care coverage under the Plan, disabled employees (except those eligible for Medicare due to disability under Social Security Disability Insurance or a Railroad Retirement Board Disability Annuity), their spouses, and surviving spouses receive health care benefits until becoming eligible for Medicare due to age (age 65). Disabled employees eligible for Medicare due to disability under Social Security Disability Insurance or a Railroad Retirement Board Disability Annuity receive lifetime health care benefits.

Summary of Plan Provisions

Health Care Benefit (Effective July 1, 2017)

The health care benefit for the LODA Program is provided through the LODA Health Benefits Plans, administered by the Department of Human Resource Management, and modeled upon the state employee health benefits program plans (COVA Care). As the cost of the LODA Health Benefits Plans is to be pooled across all beneficiaries of the LODA Program, the cost to the Plan may be higher or lower than the actual health care costs incurred by the Plan's health care beneficiaries. LODA health care premiums for fiscal years 2023 and 2022 are shown below:

FY 2023				
Membership Level	LODA Plan Current LODA Employment	LODA Plan Former LODA Employment	Medicare Primary	Medicare Part B Premium
Single	\$1,084	\$1,119	\$296	\$164.90
Two Person	\$1,850	\$1,882	N/A	N/A
Family (3 or more family members)	\$2,623	\$2,653	N/A	N/A

FY 2022				
Membership Level	LODA Plan Current LODA Employment	LODA Plan Former LODA Employment	Medicare Primary	Medicare Part B Premium
Single	\$1,016	\$1,049	\$293	\$170.10
Two Person	\$1,733	\$1,764	N/A	N/A
Family (3 or more family members)	\$2,458	\$2,486	N/A	N/A

Cost Offsets

To the extent the Plan's benefits are paid or reimbursed by other programs such as the VRS Health Insurance Credit Program (HIC), or applicable retirement plans, benefit offsets should be considered in developing the Plan's rate structure. The results provided include estimated HIC receipts and assume the estimated reimbursements from the HIC program are used to decrease costs for all Plan participants.

Summary of Plan Provisions

Presumptions

"Deceased person" or "Disabled person" means any individual whose death or incapacity occurs in the line of duty as the direct or proximate result of the performance of his duty, including the presumptions under §§ 27-40.1, 27-40.2, 51.1-813, 65.2-402, and 65.2-402.1, as summarized below. Complete descriptions of the presumptions can be found at <https://law.lis.virginia.gov/vacodepopularnames/line-of-duty-act>:

27-40.1. and 27-40.2.

Presumption as to death or disability from respiratory diseases, hypertension, or heart disease of salaried or volunteer fire fighters, or death of all fire fighters employed by the City of Portsmouth when death occurs subsequent to July 1, 1972, shall be presumed to be occupational diseases, suffered in the line of government duty, that are covered by this title unless such presumption is overcome by a preponderance of competent evidence to the contrary.

§ 51.1-813. Disability resulting from activities in discharge of official duties.

Any member of a county, city, or town police department or any sheriff or deputy sheriff who dies or is totally or partially disabled as a result of hypertension or heart disease shall be presumed to have died or become disabled in the line of duty, unless the contrary is shown by a preponderance of competent evidence.

§ 65.2-402. Presumption as to death or disability from respiratory disease, hypertension or heart disease, cancer.

- A. Respiratory diseases for certain firefighters or Department of Emergency Management hazardous materials officers.
- B. Hypertension or heart disease causing the death of, or any health condition or impairment resulting in total or partial disability for certain job titles who have completed five years of service in their position.
- C. Leukemia or pancreatic, prostate, rectal, throat, ovarian, breast, colon, brain, or testicular cancer causing the death of, or any health condition or impairment resulting in total or partial disability of, any volunteer or salaried firefighter, Department of Emergency Management hazardous materials officer, commercial vehicle enforcement officer or motor carrier safety trooper employed by the Department of State Police, or full-time sworn member of the enforcement division of the Department of Motor Vehicles having completed five years of service. For colon, brain, or testicular cancer, the presumption shall not apply for any individual who was diagnosed with such a condition before July 1, 2020.

Summary of Plan Provisions

Presumptions (continued)

§ 65.2-402.1. Presumption as to death or disability from infectious disease.

- A. Hepatitis, meningococcal meningitis, tuberculosis, or HIV causing the death of, or any health condition or impairment resulting in total or partial disability of certain job titles shall be presumed to be occupational diseases, suffered in the line of government duty, that are covered by this title unless such presumption is overcome by a preponderance of competent evidence to the contrary.
- B. 1. COVID-19 causing the death of, or any health condition or impairment resulting in total or partial disability of, any health care provider, who as part of the provider's employment is directly involved in diagnosing or treating persons known or suspected to have COVID-19, shall be presumed to be an occupational disease that is covered by this title unless such presumptions are overcome by a preponderance of competent evidence to the contrary. For the purposes of this section, the COVID-19 virus shall be established by a positive diagnostic test for COVID-19 and signs and symptoms of COVID-19 that require medical treatment.
2. COVID-19 causing the death of, or any health condition or impairment resulting in total or partial disability of, any (i) firefighter, (ii) law-enforcement officer; (iii) correctional officer; or (iv) regional jail officer shall be presumed to be an occupational disease, suffered in the line of duty, as applicable, that is covered by this title unless such presumption is overcome by a preponderance of competent evidence to the contrary. For the purposes of this section, the COVID-19 virus shall be established by a positive diagnostic test for COVID-19, an incubation period consistent with COVID-19, and signs and symptoms of COVID-19 that require medical treatment.

In addition, § 65.2-107 covers post-traumatic stress disorder incurred by law-enforcement officers and firefighters for an incident or exposure occurring in the line of duty on or after July 1, 2020.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Assumptions and Methods

The assumptions used in this valuation are based on the results of an actuarial experience study for the period from July 1, 2016 through June 30, 2020, adopted by the Board of Trustees April 20, 2021, prepared by the previous actuary. Beginning with the June 30, 2021 actuarial valuation, a 6.75% investment rate of return is used. Actuarial assumptions used in this valuation represent estimates of future experience. We believe the assumptions and methods used are reasonable for the purposes of this valuation.

Actuarial cost method - Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an Individual Entry-Age Actuarial Cost Method having the following characteristics:

- (i) The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- (ii) Each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce/(increase) the Unfunded Actuarial Accrued Liability.

Financing of unfunded actuarial accrued liabilities – Contributions to the Fund are made on a pay-as-you-go funding basis, as determined by a FTE active member amount. For purposes of developing the ADEC, unfunded actuarial accrued liabilities were amortized by level (principal & interest combined) percent-of-payroll contributions over a 30-year period. For amortization purposes, the payroll growth rate assumption is 3.00%. Each valuation year, the period is reset to 30 years.

Actuarial value of system assets - The actuarial value of assets is set equal to the market value of assets.

The rate of investment return, compounded annually net of investment expenses and including a component of 2.50% for price inflation, was assumed to be 6.75%. This assumption was first used for the June 30, 2021 actuarial valuation of the Fund.

The rates of salary increase used for individual members is 3.50% (2.50% inflation plus 1.00% productivity). Additional merit and seniority increases above the 3.50% base component are assumed up to 20 years of service. This assumption is used to project a member's current pay to pay at retirement, and to develop level percent of pay normal cost amounts.

Administrative expense for the Fiscal Year ending June 30, 2022 is \$733,600. This amount is assumed to increase by 3.00% each year thereafter. Administrative expenses attributable to non-participating VRS LODA Fund employers are not included in the amount above, and the portion of expense for these employers to the total expense is assumed to remain constant.



Actuarial Assumptions

Service-Related Disabilities

Active disabilities are assumed to be service related and result in coverage under the Fund based on the following:

Group	Qualifying Disability %
State	25%
SPORS	85%
VaLORS	35%
Non-Top 10 LEOS	65%
Top 10 LEOS	70%

Service-Related Deaths:

Active employee deaths are assumed to be service related and result in coverage under the Fund based on the following:

Group	Qualifying Death %
State	25%
SPORS	85%
VaLORS	35%
Non-Top 10 LEOS	45%
Top 10 LEOS	70%

Of the service-related deaths, 50% are assumed to be paid as a direct or proximate result of the performance of duty, with the remainder paid under the presumptive clause.

Health Care Trend Assumption

The health care cost trend rate is the rate of change in per capita health care claims over time as a result of factors such as medical inflation, utilization of health care services, plan design, and technological improvements. It is a crucial economic assumption that is required for measuring retiree health care benefit obligations.

The health care cost trend assumption (trend vector) used in this valuation begins with a near-term trend assumption and declines over time to an ultimate trend rate. The near-term rates reflect the increases in the current cost of health care goods and services. The process of trending down to a lower ultimate trend relies on the theory that premium levels will moderate over the long term, otherwise the healthcare sector would eventually consume the entire GDP.

Actuarial Assumptions

While experience is often the best starting point for future costs, GRS does not rely on a group's experience in setting the near-term trend assumptions since trends vary significantly from year to year and are not credible for most groups. Therefore, professional judgment, trends from GRS' book of business and industry benchmarks (e.g., trend reports from various Pharmacy Benefit Management (PBM) organizations and national health care benefit consulting firms) are used to establish the trend assumptions.

Health care cost trend rates used in this valuation are shown below.

Fiscal Year Ended	Non-Medicare	Medicare Primary
2024	7.00%	5.250%
2025	6.75%	5.125%
2026	6.50%	5.000%
2027	6.25%	4.750%
2028	6.00%	4.750%
2029	5.75%	4.750%
2030	5.50%	4.750%
2031	5.25%	4.750%
2032	5.00%	4.750%
2033 and Beyond	4.75%	4.750%

The Medicare Part-B trend used in this valuation is shown below. The trend rates are developed based on projected Part-B costs in the 2022 Medicare Trustees report.

Fiscal Year Ended	Medicare Part-B Trend
2024	0.00%
2025	4.63%
2026	7.11%
2027	7.88%
2028	6.82%
2029	6.01%
2030	5.65%
2031	5.74%
2032	5.46%
2033 and Beyond	4.75%

For all other demographic assumptions used in this valuation, please see a separate appendix published on the VRS Website.

Miscellaneous and Technical Assumptions

<i>Decrement Operation</i>	Disability operates during retirement eligibility; withdrawal does not operate during retirement eligibility.
<i>Decrement Timing</i>	All decrements are assumed to occur mid-year.
<i>Eligibility Testing</i>	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
<i>Full-Time Equivalency</i>	The following full-time equivalent weightings are used: Volunteers..... 25% National Guard Part-Time..... 10% All Others..... 100%
<i>Health Care Reform</i>	Health care reform was considered in the valuation to the extent that reported per capita costs reflect plan changes due to health care reform.
<i>Incidence of Cash Flows</i>	Contributions, benefit costs, and admin expenses are assumed to occur continuously throughout the year.
<i>Liability Adjustments</i>	None.
<i>Medicare Advantage (MA)</i>	MA payments from Medicare were assumed to continue indefinitely and increase in accordance with the rates shown on the prior page.
<i>Medicare Due to Disability</i>	For disabled beneficiaries who become eligible for health care benefits after June 30, 2017, 75% who become disabled prior to their 65th birthday are assumed to be eligible for Medicare due to age (age 65) and 25% are assumed to become eligible for Medicare earlier than age 65 due to disability. 100% of all other beneficiaries who become eligible for health care benefits as the result of a death or disability occurring after June 30, 2017, are assumed to be eligible for Medicare due to age.
<i>Spouse Health Care Coverage</i>	80% of males and 80% of females were assumed to be married for purposes of spouse coverage under the Fund. Male spouses are assumed to be three years older than female spouses for active valuation purposes. Actual member data is used for current beneficiaries.

Miscellaneous and Technical Assumptions

Unknown Data

Data for the Air National Guard and the Army National Guard active population was not available as of June 30, 2022. The June 30, 2021 data for this subset was used as a proxy.

Members with unknown gender were assumed to be male.

Members with unknown date of birth were assumed to be age 40, age 30 for National Guard.

The following service assumptions are used for members with missing service:

Age Less Than	Assumed Service
16	0.00
24	0.90
26	1.75
28	2.74
30	3.70
31	4.85
34	6.07
35	7.81
38	8.90
40	10.59
42	11.77
44	13.07
45	14.67
47	14.95
48	16.15
50	17.12
55	18.21
60	18.48
65	21.42
65+	23.32

APPENDIX

SUPPLEMENTARY INFORMATION

Supplementary Information

Schedule of Funding Progress

(\$ IN THOUSANDS)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) ¹ (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)
6/30/2022	\$ 7,214	\$ 272,174	\$ 264,961	2.65%
6/30/2021	7,553	255,265	247,712	2.96%
6/30/2020	4,333	295,455	291,122	1.47%
6/30/2019	2,839	285,185	282,346	1.00%
6/30/2018	1,889	293,842	291,953	0.64%
6/30/2017	3,461	270,379	266,918	1.28%
6/30/2016	2,708	224,683	221,975	1.21%
6/30/2015	728	245,808	245,080	0.30%
6/30/2014	0	225,816	225,816	0.00%
6/30/2013	0	204,084	204,084	0.00%
6/30/2012	0	226,174	226,174	0.00%

¹ Actuarial cost method of Projected Unit Credit for 6/30/2012 and 6/30/2013, Entry Age Normal (Level Dollar) for 6/30/2014 and 6/30/2015, and Entry Age Normal (Level Percent of Pay) thereafter.

Solvency Test

(\$ IN THOUSANDS)

Valuation Date	Active Member Contributions (1)	Aggregate Accrued Liabilities For			Actuarial Value of Assets	Liabilities Covered by Actuarial Value of Assets		
		Retirees, Survivors and Inactive Members (2)	Active Members (Employer Financed Portion) (3)	Total		(1)	(2)	(3)
6/30/2022	n/a	\$ 219,320	\$ 52,854	\$ 272,174	\$ 7,214	n/a	3.29%	0.00%
6/30/2021	n/a	215,991	39,274	255,265	7,553	n/a	3.50%	0.00%
6/30/2020	n/a	256,627	38,828	295,455	4,333	n/a	1.69%	0.00%
6/30/2019	n/a	248,195	36,990	285,185	2,839	n/a	1.14%	0.00%
6/30/2018	n/a	257,076	36,766	293,842	1,889	n/a	0.73%	0.00%
6/30/2017	n/a	233,193	37,186	270,379	3,461	n/a	1.48%	0.00%
6/30/2016	n/a	192,578	32,105	224,683	2,708	n/a	1.41%	0.00%
6/30/2015	n/a	169,288	76,520	245,808	728	n/a	0.43%	0.00%
6/30/2014	n/a	152,120	73,696	225,816	0	n/a	0.00%	0.00%
6/30/2013	n/a	139,835	64,249	204,084	0	n/a	0.00%	0.00%
6/30/2012	n/a	131,501	94,673	226,174	0	n/a	0.00%	0.00%



Supplementary Information

The following assumptions and methods were used in the June 30, 2022 actuarial valuation results shown in this report:

Valuation Date	June 30, 2022
Actuarial Cost Method	Entry-Age
Amortization Method	Level Percent of Payroll, Open
Remaining Amortization Period	30 years
Asset Valuation Method	Market Value
Actuarial Assumptions:	
Investment Rate of Return (discount rate)	6.75% per year
Price Inflation Rate	2.50%
Wage Inflation Rate	3.50%
Payroll Growth (Amortization Purposes)	3.00%
Health Care Cost Trend Rates	
Medical / Prescription Drug Premiums (Non-Medicare)	7.00% Year 1, graded to 4.75% Year 10
Medical / Prescription Drug Premiums (Medicare)	5.25% Year 1, graded to 4.75% Year 4
Medicare Part B Payments	0.00% Year 1, ultimate rate of 4.75% Year 10

