



**Cavanaugh Macdonald**  
CONSULTING, LLC

*The experience and dedication you deserve*



Virginia  
Retirement  
System

**Report on the Actuarial Valuation of  
Other Postemployment Benefits for  
Virginia Retirement System**

**Prepared as of June 30, 2021**





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

April 5, 2022

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

Dear Trustees:

We are pleased to submit the results of the annual actuarial valuation for the following other postemployment benefits plans (OPEB Plans) of the Virginia Retirement System (VRS), prepared as of June 30, 2021:

- Group Life Insurance Program (GLI)
- Health Insurance Credit Program (HIC)
  - State Employees (HIC – State Employees)
  - Teachers (HIC – Teachers)
  - Participating Political Subdivisions in Aggregate (HIC – Political Subdivisions)
  - Special Coverage Groups (HIC – Special Coverage Groups)
    - Constitutional Officers (HIC – Constitutional Officers)
    - Social Service Employees (HIC – Social Service Employees)
    - Registrars (HIC – Registrars)
- Virginia Sickness and Disability Program (VSDP)
- Virginia Local Disability Program (VLDP)
  - Teachers (VLDP – Teachers)
  - Political Subdivisions (VLDP – Political Subdivisions)

This report includes information, in aggregate, on the actuarial valuations of the Health Insurance Credit Program for participating Political Subdivisions as of June 30, 2021. We have prepared, and provided separately, actuarial valuation reports for each of the participating Political Subdivisions. Please refer to the individual reports for the valuation results, summary of actuarial assumptions and methods, and plan provisions for each of the participating Political Subdivision plans. In addition we prepared the underlying schedules from which the selected information in the annual report was extracted.

The purpose of this report is to provide a summary of the funded status of VRS as of June 30, 2021 and to recommend rates of contribution. While not verifying the data at source, the actuary performed tests for consistency and reasonability. The funded status of the Plan is the ratio of the assets to the actuarial accrued liability. While the market value of assets gives an indication of the funded status of a plan at a particular point in time and is used for financial reporting, for GLI, HIC – State Employees, HIC – Teachers, VSDP, and VLDP, it is not used directly in the calculation of the employer contribution rates. A less volatile actuarial value of assets, which smooths the effect of market fluctuations over a five-year period, is applied to determine the funded status for rate setting purposes. For informational purposes, we exhibit the funded status based on



this smoothed actuarial value of assets basis as well as the market value in this report. The current funded status does not necessarily indicate anything about future contributions. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

The calculations in this report have been made on a basis consistent with our understanding of VRS's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. For example, actuarial computations for purposes of fulfilling financial accounting requirements under Governmental Accounting Standards No. 74 and No. 75 are provided in separate reports.

The valuation results indicate that the full employer contribution rates shown in the table below are sufficient to fund the normal cost for all members and finance the unfunded accrued liability of the indicated OPEB Plans. For comparison, in the table below we present the employer contribution rates for fiscal years ending 2023 and 2024 based on the June 30, 2021 actuarial valuation and the rates for fiscal years 2021 and 2020 based on the June 30, 2019 actuarial valuation. Contribution rates for VRS employers are established every two years based on the odd year valuations. The actuarially calculated employer contribution rates based on the June 30, 2020 valuation presented in this report are for informational purposes only.

OPEB Plan	Fiscal Years 2021/2022	Informational Only	Fiscal Years 2023/2024
	Board & General Assembly Approved		Board & General Assembly Approved
	2019 Valuation	2020 Valuation	2021 Valuation
GLI*	1.34%	1.36%	1.19%
HIC - State Employees	1.12%	1.08%	1.04%
HIC - Teachers	1.21%	1.18%	1.21%
HIC - Participating Political Subdivisions**	0.59%	0.64%	0.70%
HIC - Constitutional Officers	0.36%	0.35%	0.36%
HIC - Social Service Employees	0.38%	0.39%	0.37%
HIC - Registrars	0.39%	0.37%	0.32%
VSDP	0.61%	0.56%	0.56%
VLDP-Teachers	0.47%	0.45%	0.47%
VLDP-Political Subdivisions	0.83%	0.82%	0.85%

\* The contribution rate for GLI includes an adjustment for active group life insurance. The adjustment is 0.35% for fiscal years 2023 & 2024 and 0.34% for prior fiscal years. See Section I for additional detail.

\*\* Average of individual employer rates and includes the impact of HB 1513. For the 2021 valuation, the average employer rate of 0.70% includes participating locations with a total calculated rate less than 0.00%. Since the actual individual employer rates will not be less than 0.00%, the average rate with this restriction is 0.70%.



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The Board of Trustees  
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The promised postemployment benefits of the OPEB Plans are included in the actuarially calculated contribution rates which are developed using the entry age normal actuarial cost method with projected benefits. The valuation takes into account the differentiation between Plan 1 vested members, Plan 1 non-vested members as of January 1, 2013 resulting from HB 1130 and SB 498, Plan 2 members and Hybrid members. Five-year smoothed market value of assets is used for actuarial valuation purposes (with the exception of HIC – Participating Political Subdivisions and HIC - Special Coverage Groups). Gains and losses are reflected in the unfunded accrued liability. The discount rate used to value a plan should be based on the likely return of the assets used to pay benefits. As of June 30, 2021, the plan has assets in trust solely to provide benefits to eligible recipients. In accordance with the funding policy adopted by the Board of Trustees, the unfunded liability is being amortized by regular annual contributions as a level percentage of payroll within a closed 30 year period for the unfunded liability as of July 1, 2013, and gains and losses in subsequent years are amortized within layered 20 year periods, on the assumption that payroll will increase by 3% annually and the amortization period will decrease by one each year until reaching 0 years. The assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the OPEB Plans and to reasonable expectations of anticipated experience under the OPEB Plans.

Our organization has only a contractual relationship with the Virginia Retirement System to provide actuarial consulting services and we do not provide other services to nor have a financial interest in the Virginia Retirement System. There are no known interests or relationships that our firm has with the Virginia Retirement System that may impair or appear to impair the objectivity of our work.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared for funding purposes with assumptions and methods that meet the parameters of the Actuarial Standards of Practice, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

In order to prepare the results in this report we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.



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We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions. We will continue to monitor the situation and advise the Board in the future of any adjustments that we believe would be appropriate.

The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Alisa Bennett'.

Alisa Bennett, FSA, EA, FCA, MAAA  
President

A handwritten signature in blue ink, appearing to read 'LL'.

Larry Langer, ASA, EA, FCA, MAAA  
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Bradley R. Wild'.

Bradley R. Wild, ASA, EA, FCA, MAAA  
Senior Actuary

AB/LL/BRW:yy



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## ***Section I – Summary of Principal Results***

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### **Introduction and Summary**

This report contains the actuarial valuation results as of June 30, 2021 for the other postemployment plans (OPEB Plans) of the Virginia Retirement System (VRS) as determined by Cavanaugh Macdonald Consulting, the actuary for the VRS. Questions about this report should be directed to the VRS rather than to Cavanaugh Macdonald Consulting.

### **Employer Contribution Rates**

The previous employer contribution rates were set by the June 30, 2019 valuation and are effective for the period July 1, 2020 through June 30, 2022, or fiscal years ending 2021 and 2022. The June 30, 2020 calculated rates shown in each table below are for informational purposes. Rates for subsequent fiscal years will be determined by future actuarial valuations.

Prior to 2007, the OPEB Plans were funded on a “pay-as-you-go” basis. Once trusts were established, contribution rates were not fully funded until 2017 for the statewide plans. Currently, contribution rates are expected to be fully funded.

The recommended employer contribution rate consists of three, or if applicable, four pieces which are shown in the summary tables for the OPEB Plans:

- **Employer Normal Cost Rate** - The ongoing annual cost of active employees accruing benefits under the plan. The normal cost is developed using the entry age normal cost method, which develops normal costs for active members which stay level during their career if benefit provisions are unchanged and assumptions are realized.
- **Administrative Expense** - An estimate of the administrative expenses to be paid out of the trust in the upcoming fiscal year.
- **Amortization of Balance of UAAL** - The amortization of, or payment towards, the unfunded actuarial accrued liability (UAAL) for the year. The UAAL is the amount by which the actuarial value of assets falls short of, or exceeds, the actuarial accrued liability for the plan. Under the funding arrangement adopted by the Board, the UAAL is being amortized as individual layered bases. The legacy unfunded actuarial accrued liability, the unfunded actuarial accrued liability as of June 30, 2013, is amortized over a closed 30-year period beginning June 30, 2013. The amortization period of the legacy unfunded will decrease by one in each subsequent valuation until reaching 0 years. The actuarial gains and losses and other changes in the unfunded due to benefit and actuarial assumption and method changes for each valuation subsequent to the June 30, 2013 valuation will be amortized over a closed 20-year period. The amortization of the unfunded accrued liability assumes that payroll increase by 3% annually and the amortization period will decrease by one year until reaching 0 years.
- **Adjustment for Active Group Life Insurance** – The GLI cost of benefits for members who die in active service is covered on a one-year term basis through an insurance company and is not included in the actuarial valuation. The term cost for these active members has been provided to CMC by VRS and is currently 14.7¢ per \$1,000 of insurance. This cost is included in the Summary of Principal Results to provide a combined contribution rate for deaths in active service and postemployment benefits.



## ***Section I – Summary of Principal Results (continued)***

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### **Assets**

The following summary tables show the market and actuarial values of assets for each OPEB Plan. Five-year smoothed market value of assets is used for actuarial valuation purposes. The actuarial value reflects only a portion of the excess (or shortfall) between recent market value returns and the corresponding expected returns based on the 6.75% investment return assumption. The actuarial value recognizes this excess return (or shortfall) over a five-year period at the rate of 20% per year. This approach dampens year-to-year fluctuations in the contribution rates. The actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets. For HIC – Participating Political Subdivisions, HIC – Constitutional Officers, HIC – Social Service Employees, and HIC – Registrars, the actuarial value of assets equals the market value of assets. Schedule B shows the reconciliation of assets for each OPEB Plan, the calculation of excess investment income, and, if applicable, the development of actuarial value of assets.

### **Actuarial Assumptions and Methods**

Schedules D and E of this report outline the full set of actuarial assumptions and methods used in the current valuation. Effective with the June 30, 2021 valuation, the actuarial assumptions were revised to reflect the results of the experience study for the period 2016 – 2020. The next experience review is expected to be implemented with the June 30, 2025 annual valuation. Salary increases range between 3.50% and 5.35% depending on the member's service and classification (i.e., members with general employee benefits or with enhanced hazardous duty coverage). Liabilities were determined under the Entry Age Normal actuarial cost method.

The Political Subdivisions have been divided into two groups. The Top 10 Locals group consists of: City of Virginia Beach, Henrico County, Prince William County, Chesterfield County, City of Chesapeake, City of Alexandria, City of Hampton, Loudoun County, City of Lynchburg, and the City of Portsmouth. The Non-Top 10 Locals group is all other Political Subdivisions not included in The Top 10 Locals group.





## Section I – Summary of Principal Results (continued)

The valuation reflects changes in the actuarial assumptions recommended in the experience study of VRS for the four-year period ending June 30, 2020 and adopted by the Board at its April 20, 2021 meeting. The table below summarizes the changes in actuarial assumptions.

System	Assumption	Description
State	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Adjusted rates to better fit experience for Plan 1; set separate rates based on experience for Plan 2/Hybrid; changed final retirement age from 75 to 80 for all
	3. Withdrawal Rates	Adjusted rates to better fit experience at each age and service decrement through 9 years of service
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change
Teachers	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Adjusted rates to better fit experience for Plan 1; set separate rates based on experience for Plan 2/Hybrid; changed final retirement age from 75 to 80 for all
	3. Withdrawal Rates	Adjusted rates to better fit experience at each age and service decrement through 9 years of service
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change
SPORS	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. Increased disability life expectancy. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Increased rates for ages 55 to 61, 63, and 64 with 26 or more years of service and changed final retirement age from 65 to 70
	3. Withdrawal Rates	Decreased rate for 0 years of service and increased rates for 1 to 6 years of service
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change
VaLORS	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. Increased disability life expectancy. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Increased rates at some younger ages, decreased at age 62, and changed final retirement age from 65 to 70
	3. Withdrawal Rates	Adjusted rates to better fit experience at each age and service decrement through 9 years of service
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change
JRS	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Review separately from State employees because exhibit fewer deaths. Update to PUB2010 public sector mortality tables. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Decreased rates for ages 60-66 and 70-72
	3. Withdrawal Rates	No change
	4. Disability Rates	No change
	5. Salary Increases	Reduce increases across all ages by 0.50%



**Section I – Summary of Principal Results (continued)**

System	Assumption	Description
Locals Top 10 (Non-Hazardous Duty)	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Adjusted rates to better fit experience for Plan 1; set separate rates based on experience for Plan 2/Hybrid; changed final retirement age from 75 to 80 for all
	3. Withdrawal Rates	Adjusted rates to better fit experience at each age and service decrement through 9 years of service
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change
Locals Top 10 (Hazardous Duty)	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. Increased disability life expectancy. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Adjusted rates to better fit experience and changed final retirement age from 65 to 70
	3. Withdrawal Rates	Decreased rates
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change
Locals Non-Top 10 (Non-Hazardous Duty)	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Adjusted rates to better fit experience for Plan 1; set separate rates based on experience for Plan 2/Hybrid; changed final retirement age from 75 to 80 for all
	3. Withdrawal Rates	Adjusted rates to better fit experience at each age and service decrement through 9 years of service
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change
Locals Non-Top 10 (Hazardous Duty)	1. Mortality Rates (Pre-retirement, post-retirement healthy and disabled)	Update to PUB2010 public sector mortality tables. Increased disability life expectancy. For future mortality improvements, replace load with a modified Mortality Improvement Scale MP-2020.
	2. Retirement Rates	Adjusted rates to better fit experience and changed final retirement age from 65 to 70
	3. Withdrawal Rates	Decreased rates and changed from rates based on age and service to rates based on service only to better fit experience and to be more consistent with Locals Top 10 Hazardous Duty
	4. Disability Rates	No change
	5. Salary Increases	No change
	6. Line of Duty Disability	No change



## Section I – Summary of Principal Results (continued)

### OPEB Specific Assumptions

System	Assumption	Description
GLI	1. Pension economic and demographic assumptions	Adjusted in the same manner as the pension plans
	2. Retiree liability estimation for Life Only	Adjusted to estimate based on actual benefit payments for this group compared to actual benefit payments for total group
HIC	1. Pension economic and demographic assumptions	Adjusted in the same manner as the pension plan
	2. Benefit election (from deferred vested)	Adjusted election from deferred vested status to a flat 95% for State & Teachers and a flat 85% for Locals & Special Coverage Codes
	3. Benefit election (from disability)	Adjusted election to 80% for SPORS/VaLORS and 50% for Locals and Special Coverage Codes
	4. Benefit utilization	Increase in utilization for all groups
	5. Percentage of deferred vested members electing to withdraw from VRS	Bifurcated assumption for above or below 50 years of age; in general, withdrawal rate increased for those below 50 and decreased for those over 50
	6. Benefit increase in the first year for those not using the maximum benefit	Reduction to 4.50% for all groups
VSDP / VLDP LTD	1. Pension economic and demographic assumptions	Adjusted in the same manner as the pension plans
	2. Rates of disability claim termination	Adjusted for credible VSDP experience
	3. Benefit offsets	Increased and extended period in which offset may be received based on available experience
	4. Catastrophic claims	Increased based on available experience
	5. Percentage eligible for additional 1% defined contribution	Reduction in number assumed to meet Social Security definition of disability and receive the additional 1% defined contribution
	*Until adequate experience emerges, VLDP calculations are based upon the data, actuarial assumptions and methods used in the actuarial valuation of the VSDP benefit.	

In addition, decrements are assumed to occur at mid-year (which is an approximation for throughout the year) rather than beginning of year for all plans except Teachers.



## ***Section I – Summary of Principal Results (continued)***

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### **Benefit Provisions**

This actuarial valuation takes into account the provisions of VRS as of the valuation date of June 30, 2021. There have been no significant changes in plan provisions since the prior valuation. Some of the Political Subdivision plans have made changes to the benefits provided to elect the \$1 enhanced benefit. In aggregate the impact of these changes on the Political Subdivision plans is not significant. The main benefit provisions are summarized in Schedule F of this report. Please refer to the individual reports for the benefit provisions of each of the Political Subdivision plans.

### **Member Data**

This actuarial valuation is based on census data supplied by the VRS. The number of active and inactive members is shown in the summary tables below with additional information provided in Section II as well as a more detailed breakout of active membership in Schedule G. The number of retirees shown includes those who retired from this employer; therefore, they are expected to receive the full benefit from that employer.



## ***Section I – Summary of Principal Results (continued)***

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### **Experience**

There have been several significant changes to assumptions as well as plan experience that differed from what was assumed, which will impact unfunded liabilities and future contribution rates. An actuarial loss means the unfunded actuarial accrued liability was larger than anticipated; whereas an actuarial gain means the unfunded actuarial liability was less than anticipated. The actuarial gains and losses for each plan are as described below with more details found in Section VI.

Changes since the prior valuation:

- The funded ratio, which compares assets to liabilities, increased for all plans.
- All plans had greater than expected investment return for the year due to the market value return of 27.5% versus the assumed rate of 6.75% which created actuarial gains.
- In all plans except HIC Political Subdivisions there were greater than expected contributions either because the employer contributions from the June 30, 2019 rate setting valuation were greater than those expected based on the prior valuation, or because the payroll upon which the rate was applied was greater than expected. The HIC Political Subdivisions had employer contributions slightly less than expected due mainly due to assumed contribution timing.
- The State HIC plan received an additional ad-hoc contribution of \$38.7 million in June 2021 which reduced the unfunded actuarial liability.
- GLI had gains due to the post-retirement mortality assumption change which assumes longer life expectancy and therefore later deaths. The GLI also had a small gain due to demographic experience.
- The HIC plans all had losses due the assumption changes, primarily due to the post-retirement mortality assumption which assumes longer life expectancy. Since the HIC pays lifetime benefits, longer than expected post-retirement life expectancy causes actuarial losses. In addition, the HIC plans had small gains or losses from demographic experience, none of which caused significant changes to the unfunded actuarial liability.
- The employer contribution rate for the HIC teachers was expected to decrease due to the experience study and investment gain, but instead increased slightly due to payroll remaining flat since the prior valuation rather than increasing as expected.
- The VSDP and VLDP Political Subdivisions had gains from the experience study change to assume that decrements such as disabilities, retirements, terminations, and deaths occur in the middle of the year instead of the beginning of the year. Since benefits are only payable from time of disability to retirement eligibility, the delay of a half year in the assumed onset of benefits caused an actuarial gain. This did not occur for VLDP teachers because the decrement timing assumption for teachers remained at the beginning of the year because of the timing pattern of teacher contracts.



## ***Section I – Summary of Principal Results (continued)***

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- For all three disability plans, the inactive data is received from a third party and the data quality has been improving over the last few years leading to experience adjustments. It must also be noted that disability and termination from disability are low frequency/high volatility occurrences and, even for a System as large as VRS, experience is expected to be volatile. It is expected that the disability plans will continue to see experience gains and losses that are more volatile than the other OPEB plans due to the nature of the benefit as a salary replacement to a disability occurrence rather than an earned retirement benefit.

### **Summary of Results**

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results for the OPEB plans are summarized on the following pages. In addition to the summary tables for each OPEB Plan, we present a summary of the valuation results for the political subdivisions in aggregate.



**Section I – Summary of Principal Results (continued)**

**GROUP LIFE INSURANCE PROGRAM  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Participants		
Active	358,905	361,306
Long Term Disability	2,517	2,548
Retirees*	197,236	191,979
Disabled	13,441	14,117
Total	<u>572,099</u>	<u>569,950</u>
Annual Covered Payroll	\$ 21,052,089	\$ 20,456,977
Valuation Salary	\$ 18,458,973	\$ 18,010,245
Assets:		
Actuarial Value	\$ 2,135,187	\$ 1,905,233
Market Value	\$ 2,413,074	\$ 1,855,102
Funded Ratio:		
Actuarial Value	60.58%	53.17%
Market Value	68.47%	51.77%
Total Actuarial Liability	\$ 3,524,464	\$ 3,583,131
Unfunded Actuarial Liability	\$ 1,389,277	\$ 1,677,898
Insurance Amount		
Active Members	\$ 42,104,178	\$ 40,913,954
Retired and Disabled Members	8,922,190	8,424,026
Total	<u>\$ 51,026,368</u>	<u>\$ 49,337,980</u>
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 79,634	\$ 90,767
Admin Expense	862	824
Accrued Liability	<u>84,942</u>	<u>102,028</u>
Total	\$ 165,438	\$ 193,619
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.43 %	0.51 %
Administrative Expense	0.00 %	0.00 %
Accrued Liability**	0.41 %	0.51 %
Total	<u>0.84 %</u>	<u>1.02 %</u>
Adjustment for Active Group Life Insurance	<u>0.35 %</u>	<u>0.34 %</u>
Total Cost for Plan	1.19 %	1.36 %
Contribution as ¢ per \$1,000 of Active Insurance		
Active Members	14.7	14.1
Retired and Disabled Members	<u>35.0</u>	<u>42.6</u>
Total	49.7	56.7
Amortization Period (Years)	13-22	14-23

\*2021 retirees include 6,941 terminated vesteds.

\*\*Includes timing adjustment factor of 1.018041.



**Section I – Summary of Principal Results (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
STATE EMPLOYEES\*  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Participants		
Active	108,528	110,834
Long Term Disability	2,449	2,505
Retirees	47,542	46,602
Disabled	2,592	2,766
Inactive, Vested	1,953	1,962
Total	<u>163,064</u>	<u>164,669</u>
Annual Covered Payroll	\$ 7,442,699	\$ 7,221,134
Valuation Salary	\$ 6,506,392	\$ 6,281,271
Health Insurance Credit Payments	\$ 77,657	77,538
Assets:		
Actuarial Value	\$ 191,829	\$ 129,901
Market Value	\$ 207,855	\$ 125,377
Funded Ratio:		
Actuarial Value	18.36%	12.68%
Market Value	19.90%	12.24%
Total Actuarial Liability	\$ 1,044,663	\$ 1,024,443
Unfunded Actuarial Liability	\$ 852,834	\$ 894,542
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 18,774	\$ 19,140
Admin Expense	589	230
Accrued Liability	54,362	55,627
Total	<u>\$ 73,725</u>	<u>\$ 74,997</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.29 %	0.30 %
Administrative Expense	0.01 %	0.00 %
Accrued Liability**	0.74 %	0.78 %
Total	<u>1.04 %</u>	<u>1.08 %</u>
Amortization Period (Years)	13-22	14-23

\* State Employees include State, JRS, SPORS, VaLORS, ORP, and UVA employees.

\*\*Includes timing adjustment factor of 1.018041.





**Section I – Summary of Principal Results (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
TEACHERS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Participants		
Active	149,793	150,681
Long Term Disability	0	0
Retirees	68,296	66,336
Disabled	3,276	3,362
Inactive, Vested	3,477	3,217
Total	<u>224,842</u>	<u>223,596</u>
Annual Covered Payroll*	\$ 8,971,605	\$ 8,911,307
Valuation Salary	\$ 7,923,798	\$ 7,929,042
Health Insurance Credit Payments	\$ 98,057	\$ 95,647
Assets:		
Actuarial Value	\$ 177,304	\$ 149,949
Market Value	\$ 194,210	\$ 144,158
Funded Ratio:		
Actuarial Value	12.05%	10.48%
Market Value	13.20%	10.08%
Total Actuarial Liability	\$ 1,471,397	\$ 1,430,538
Unfunded Actuarial Liability	\$ 1,294,093	\$ 1,280,589
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 18,900	\$ 20,340
Admin Expense	501	257
Accrued Liability	84,258	80,909
Total	<u>\$ 103,659</u>	<u>\$ 101,506</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.24 %	0.26 %
Administrative Expense	0.01 %	0.00 %
Accrued Liability**	0.96 %	0.92 %
Total	<u>1.21 %</u>	<u>1.18 %</u>
Amortization Period (Years)	13-22	14-23

\* Includes an assumed pay increase on the valuation date.

\*\*Includes timing adjustment factor of 1.018041.



**Section I – Summary of Principal Results (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
PARTICIPATING POLITICAL SUBDIVISIONS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Participants		
Active	36,426	37,398
Retirees	9,923	9,627
Disabled	1,716	1,638
Inactive, Vested	630	580
Total	<u>48,695</u>	<u>49,243</u>
Annual Covered Payroll	\$ 1,507,656	\$ 1,488,073
Valuation Salary	\$ 1,299,378	\$ 1,289,684
Health Insurance Credit Payments	\$ 5,593	\$ 5,206
Assets:		
Actuarial Value	\$ 33,333	\$ 24,468
Market Value	\$ 33,333	\$ 24,468
Funded Ratio:		
Actuarial Value	40.25%	31.91%
Market Value	40.25%	31.91%
Total Actuarial Liability	\$ 82,823	\$ 76,672
Unfunded Actuarial Liability	\$ 49,490	\$ 52,204
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 1,460	\$ 1,428
Admin Expense	86	47
Accrued Liability	3,491	3,566
Total	<u>\$ 5,037</u>	<u>\$ 5,041</u>
Average Actuarially Determined Employer Contribution as a Percent of Active Payroll*:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.16 %	0.15 %
Administrative Expense	0.01 %	0.00 %
Accrued Liability**	0.53 %	0.49 %
Total***	<u>0.70 %</u>	<u>0.64 %</u>
Amortization Period (Years)	13-22	14-23

\* Some participating locals include an additional funding contribution rate to allow the use of the 6.75% investment return as the single equivalent interest rate assumption for purposes of the GASB 74/75 statements.

\*\*Includes timing adjustment factor of 1.018041. These figures are the average of all participating Political Subdivisions after updates to the additional funding contribution rate and the plan surcharge. For more information about plan surcharge see Schedule D.

\*\*\* For the 2021 valuation, the average employer rate of 0.70% includes participating locations with a total calculated rate less than 0.00%. Since the actual individual employer rates will not be less than 0.00%, the average rate with this restriction is 0.70%.



**Section I – Summary of Principal Results (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
CONSTITUTIONAL OFFICERS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Participants		
Active	13,435	13,608
Retirees	3,861	3,683
Disabled	325	332
Inactive, Vested	104	97
Total	<u>17,725</u>	<u>17,720</u>
Annual Covered Payroll	\$ 747,716	\$ 733,934
Valuation Salary	\$ 658,891	\$ 641,740
Health Insurance Credit Payments	\$ 2,138	\$ 2,049
Assets:		
Actuarial Value	\$ 6,669	\$ 5,114
Market Value	\$ 6,669	\$ 5,114
Funded Ratio:		
Actuarial Value	20.06%	15.89%
Market Value	20.06%	15.89%
Total Actuarial Liability	\$ 33,241	\$ 32,183
Unfunded Actuarial Liability	\$ 26,572	\$ 27,069
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 769	\$ 726
Admin Expense	16	9
Accrued Liability	1,745	1,726
Total	<u>\$ 2,530</u>	<u>\$ 2,461</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.12 %	0.11 %
Administrative Expense	0.00 %	0.00 %
Accrued Liability*	0.24 %	0.24 %
Total	<u>0.36 %</u>	<u>0.35 %</u>
Discount Rate	6.75%	6.75%
Amortization Period (Years)	13-22	14-23

\*Includes timing adjustment factor of 1.018041.



**Section I – Summary of Principal Results (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
SOCIAL SERVICE EMPLOYEES  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Participants		
Active	6,147	6,307
Retirees	2,055	1,998
Disabled	165	167
Inactive, Vested	32	33
Total	<u>8,399</u>	<u>8,505</u>
Annual Covered Payroll	\$ 304,315	\$ 303,771
Valuation Salary	\$ 259,234	\$ 261,769
Health Insurance Credit Payments	\$ 1,118	\$ 1,095
Assets:		
Actuarial Value	\$ 2,345	\$ 1,934
Market Value	\$ 2,345	\$ 1,934
Funded Ratio:		
Actuarial Value	15.81%	13.26%
Market Value	15.81%	13.26%
Total Actuarial Liability	\$ 14,833	\$ 14,580
Unfunded Actuarial Liability	\$ 12,488	\$ 12,646
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 261	\$ 282
Admin Expense	6	3
Accrued Liability	808	794
Total	<u>\$ 1,075</u>	<u>\$ 1,079</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.10 %	0.11 %
Administrative Expense	0.00 %	0.00 %
Accrued Liability*	0.27 %	0.28 %
Total	<u>0.37 %</u>	<u>0.39 %</u>
Discount Rate	6.75%	6.75%
Amortization Period (Years)	13-22	14-23

\*Includes timing adjustment factor of 1.018041.



**Section I – Summary of Principal Results (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
REGISTRARS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Participants		
Active	265	254
Retirees	73	71
Disabled	2	2
Inactive, Vested	2	1
Total	<u>342</u>	<u>328</u>
Annual Covered Payroll	\$ 14,843	\$ 12,961
Valuation Salary	\$ 12,596	\$ 10,994
Health Insurance Credit Payments	\$ 38	\$ 39
Assets:		
Actuarial Value	\$ 169	\$ 126
Market Value	\$ 169	\$ 126
Funded Ratio:		
Actuarial Value	28.64%	21.88%
Market Value	28.64%	21.88%
Total Actuarial Liability	\$ 590	\$ 576
Unfunded Actuarial Liability	\$ 421	\$ 450
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 16	\$ 17
Admin Expense	0	0
Accrued Liability	28	28
Total	<u>\$ 44</u>	<u>\$ 45</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.13 %	0.15 %
Administrative Expense	0.00 %	0.00 %
Accrued Liability*	0.19 %	0.22 %
Total	<u>0.32 %</u>	<u>0.37 %</u>
Discount Rate	6.75%	6.75%
Amortization Period (Years)	13-22	14-23

\*Includes timing adjustment factor of 1.018041.



**Section I – Summary of Principal Results (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
LONG-TERM DISABILITY AND LONG-TERM CARE COMBINED  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Number Active (participating in VSDP)	76,529	77,848
Number Disabled	2,360	2,448
Number Ported	3,397	3,103
Total	<u>82,286</u>	<u>83,399</u>
Annual Covered Payroll*	\$ 4,576,046	\$ 4,382,943
Valuation Salary	\$ 4,010,871	\$ 3,833,392
Assets:		
Actuarial Value	\$ 547,379	\$ 505,236
Market Value	\$ 611,919	\$ 490,219
Funded Ratio:		
Actuarial Value	218.86%	203.01%
Market Value	244.67%	196.98%
Total Actuarial Liability	\$ 250,103	\$ 248,869
Unfunded Actuarial Liability	\$ (297,276)	\$ (256,367)
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 34,629	\$ 30,612
Admin Expense	7,737	7,243
Accrued Liability	(21,162)	(17,709)
Total	<u>\$ 21,204</u>	<u>\$ 20,146</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.86 %	0.80 %
Administrative Expense	0.17 %	0.17 %
Accrued Liability**	<u>(0.47)%</u>	<u>(0.41)%</u>
Total	0.56 %	0.56 %
Amortization Period (Years)	13-22	14-23

\* Annual Covered Payroll consists of only those State, VaLORS, and SPORS employees participating in VSDP.

\*\*Includes timing adjustment factor of 1.018041.



**Section I – Summary of Principal Results (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
LONG-TERM DISABILITY  
(\$ IN THOUSANDS)**

Valuation Date - June 30, 2021	State	SPORS	VaLORS	Total
Number Active (participating in VSDP)	67,410	1,632	7,487	76,529
Number Disabled	<u>1,861</u>	<u>24</u>	<u>475</u>	<u>2,360</u>
Total	69,271	1,656	7,962	78,889
Annual Covered Payroll*	\$ 4,133,413	\$ 110,636	\$ 331,997	\$ 4,576,046
Valuation Salary	\$ 3,639,726	\$ 104,143	\$ 267,002	\$ 4,010,871
LTD Assets (allocated by liabilities):				
Actuarial Value	\$ 353,518	\$ 6,660	\$ 86,165	\$ 446,343
Market Value	\$ 395,553	\$ 7,452	\$ 96,412	\$ 499,417
Funded Ratio**:				
Actuarial Value				244.77%
Market Value				273.87%
LTD Actuarial Liability	\$ 144,430	\$ 2,721	\$ 35,203	\$ 182,354
LTD Unfunded Actuarial Liability	\$ (209,088)	\$ (3,939)	\$ (50,962)	\$ (263,989)
Amortization Period (Years)	13-22	13-22	13-22	13-22
LTD Actuarially Determined Employer Contribution (ADEC):				
Normal Cost	\$ 26,394	\$ 462	\$ 4,426	\$ 31,282
Admin Expense	6,043	114	1,473	7,630
Accrued Liability	<u>(14,449)</u>	<u>(278)</u>	<u>(3,581)</u>	<u>(18,308)</u>
Total	\$ 17,988	\$ 298	\$ 2,318	\$ 20,604
LTD ADEC as a Percent of Active Payroll:				
Normal Cost	0.73 %	0.44 %	1.66 %	0.78 %
Administrative Expense	0.15 %	0.10 %	0.45 %	0.17 %
Accrued Liability***	<u>(0.36)%</u>	<u>(0.26)%</u>	<u>(1.10)%</u>	<u>(0.41)%</u>
Total	0.52 %	0.28 %	1.01 %	0.54 %
Discount Rate	6.75 %	6.75 %	6.75 %	6.75 %

\* Annual Covered Payroll consists of only those State, VaLORS, and SPORS employees participating in VSDP.

\*\* Funded Ratios not displayed by State, VaLORS, and SPORS because VSDP is a pooled plan.

\*\*\*Includes timing adjustment factor of 1.018041.

Note: VSDP is a multiple employer cost sharing plan and the breakdown presented above is provided for illustrative purposes only.



**Section I – Summary of Principal Results (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
LONG-TERM CARE  
(\$ IN THOUSANDS)**

Valuation Date - June 30, 2021	State	SPORS	VaLORS	Total
Number Active (participating in VSDP)	67,410	1,632	7,487	76,529
Number Disabled	2,005	25	480	2,510
Number Ported	<u>3,257</u>	<u>9</u>	<u>131</u>	<u>3,397</u>
Total	72,672	1,666	8,098	82,436
Annual Covered Payroll*	\$ 4,133,413	\$ 110,636	\$ 331,997	\$ 4,576,046
Valuation Salary	\$ 3,639,726	\$ 104,143	\$ 267,002	\$ 4,010,871
LTC Assets (allocated by liabilities):				
Actuarial Value	\$ 96,759	\$ 869	\$ 3,408	\$ 101,036
Market Value	\$ 107,740	\$ 968	\$ 3,794	\$ 112,502
Funded Ratio**:				
Actuarial Value				149.14%
Market Value				166.06%
LTC Actuarial Liability	\$ 64,881	\$ 583	\$ 2,285	\$ 67,749
LTC Unfunded Actuarial Liability	\$ (31,878)	\$ (286)	\$ (1,123)	\$ (33,287)
Amortization Period (Years)	13-22	13-22	13-22	13-22
LTC Actuarially Determined Employer Contribution (ADEC):				
Normal Cost	\$ 3,146	\$ 37	\$ 164	\$ 3,347
Admin Expense	102	1	4	107
Accrued Liability	<u>(2,732)</u>	<u>(23)</u>	<u>(99)</u>	<u>(2,854)</u>
Total	\$ 516	\$ 15	\$ 69	\$ 600
LTC ADEC as a Percent of Active Payroll:				
Normal Cost	0.09 %	0.04 %	0.06 %	0.08 %
Administrative Expense	0.00 %	0.00 %	0.00 %	0.00 %
Accrued Liability***	<u>(0.07)%</u>	<u>(0.02)%</u>	<u>(0.03)%</u>	<u>(0.06)%</u>
Total	0.02 %	0.02 %	0.03 %	0.02 %
Discount Rate	6.75 %	6.75 %	6.75 %	6.75 %

\* Annual Covered Payroll consists of only those State, VaLORS, and SPORS employees participating in VSDP.

\*\* Funded Ratios not displayed by State, VaLORS, and SPORS because VSDP is a pooled plan

\*\*\*Includes timing adjustment factor of 1.018041.

Note: VSDP is a multiple employer cost sharing plan and the breakdown presented above is provided for illustrative purposes only.





**Section I – Summary of Principal Results (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
TEACHERS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Number Active (participating in VLDP)	14,312	13,027
Number Disabled	16	9
Number Ported	8	8
Total	<u>14,336</u>	<u>13,044</u>
Annual Covered Payroll*	\$ 642,284	\$ 571,356
Valuation Salary	\$ 548,409	\$ 493,059
Assets:		
Actuarial Value	\$ 5,028	\$ 2,973
Market Value	\$ 5,588	\$ 2,886
Funded Ratio:		
Actuarial Value	98.55%	89.20%
Market Value	109.53%	86.59%
Total Actuarial Liability	\$ 5,102	\$ 3,333
Unfunded Actuarial Liability	\$ 74	\$ 360
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 1,579	\$ 1,279
Admin Expense	1,129	1,032
Accrued Liability	14	34
Total	<u>\$ 2,722</u>	<u>\$ 2,345</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.29 %	0.26 %
Administrative Expense	0.18 %	0.18 %
Accrued Liability**	0.00 %	0.01 %
Total	<u>0.47 %</u>	<u>0.45 %</u>
Discount Rate	6.75%	6.75%
Amortization Period (Years)	13-20	14-20

\* Annual Covered Payroll consists of only those employees participating in VLDP.

\*\*Includes timing adjustment factor of 1.018041.



**Section I – Summary of Principal Results (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
POLITICAL SUBDIVISIONS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
Number Active (participating in VLDP)	11,017	10,672
Number Disabled	54	36
Number Ported	8	8
Total	<u>11,079</u>	<u>10,716</u>
Annual Covered Payroll*	\$ 423,151	\$ 392,684
Valuation Salary	\$ 345,785	\$ 326,804
Assets:		
Actuarial Value	\$ 5,604	\$ 3,425
Market Value	\$ 6,168	\$ 3,319
Funded Ratio:		
Actuarial Value	111.97%	91.28%
Market Value	123.24%	88.46%
Total Actuarial Liability	\$ 5,005	\$ 3,752
Unfunded Actuarial Liability	\$ (599)	\$ 327
Actuarially Determined Employer Contribution (ADEC):		
Normal Cost	\$ 1,975	\$ 1,705
Admin Expense	1,190	1,142
Accrued Liability	(27)	33
Total	<u>\$ 3,138</u>	<u>\$ 2,880</u>
ADEC as a Percent of Active Payroll:	<b>2023 &amp; 2024</b>	<b>For Informational Purposes Only</b>
Normal Cost	0.57 %	0.52 %
Administrative Expense	0.29 %	0.29 %
Accrued Liability**	(0.01)%	0.01 %
Total	<u>0.85 %</u>	<u>0.82 %</u>
Discount Rate	6.75%	6.75%
Amortization Period (Years)	13-20	14-20

\* Annual Covered Payroll consists of only those employees participating in VLDP.

\*\*Includes timing adjustment factor of 1.018041.



## Section II – Membership Data

1. Data regarding the membership of VRS for use as a basis of the valuation was furnished by VRS.

The following table shows the number of active members and their annual compensation as of June 30, 2021 on the basis of which the valuation was prepared.

**TABLE 1**  
**THE NUMBER, ANNUAL COVERED PAYROLL, AND INSURANCE**  
**AMOUNT OF GLI MEMBERS AS OF JUNE 30, 2021**  
**(\$ IN THOUSANDS)**

Group	Number	Covered Payroll	Insurance Amount
<b>ACTIVE EMPLOYEES</b>			
State Employees	73,483	\$4,578,708	\$9,157,415
Teachers	149,793	8,971,605	17,943,210
VRS Political Subdivisions	103,457	5,177,641	10,355,282
SPORS	1,947	142,795	285,591
JRS	453	79,125	158,250
VaLORS	7,823	351,086	702,172
Life Insurance Only*	<u>21,949</u>	<u>1,751,129</u>	<u>3,502,258</u>
Total	358,905	\$21,052,089	\$42,104,178
<b>RETIRED OR DISABLED MEMBERS</b>			
Service Retirees	197,236	n/a	8,117,015
Disabled Members	<u>15,958</u>	n/a	<u>805,175</u>
Total	213,194	n/a	8,922,190

\*The group shown above as “Life Insurance Only” consists of political subdivisions not providing VRS pension benefits and eligible members in the Optional Retirement Plan (ORP).



**Section II – Membership Data (continued)**

**TABLE 2**  
**THE NUMBER AND ANNUAL COVERED PAYROLL**  
**OF ALL ACTIVE MEMBERS AS OF JUNE 30, 2021**  
**(\$ IN THOUSANDS)**

OPEB Plan	Number	Covered Payroll
GLI	358,905	\$21,052,089
HIC - State Employees	108,528	7,442,699
HIC - Teachers	149,793	8,971,605
HIC - Participating Political Subdivisions	36,426	1,507,656
HIC - Constitutional Officers	13,435	747,716
HIC - Social Service Employees	6,147	304,315
HIC - Registrars	265	14,843
VSDP		
State Employees	67,410	4,133,413
SPORS	1,632	110,636
VaLORS	<u>7,487</u>	<u>331,997</u>
Total	76,529	4,576,046
VLDP-Teachers	14,312	642,284
VLDP-Political Subdivisions	11,017	423,151

Schedule G, which can be found at the end of this report, shows the distribution by age and service of the number of active members included in the valuation.



**Section II – Membership Data (continued)**

2. The following tables shows a six-year history of active member valuation data, including the political subdivisions.

**TABLE 3 - SCHEDULE OF TOTAL ACTIVE MEMBER VALUATION DATA  
GROUP LIFE INSURANCE PROGRAM**

Valuation Date	Number	Annual Covered Payroll (\$ in Thousands)	Annual Average Pay	% Change in Average Pay
6/30/2021	358,905	\$ 21,052,089	\$ 58,656	3.60 %
6/30/2020	361,306	20,456,977	56,620	1.55 %
6/30/2019	367,627	20,498,084	55,758	3.69 %
6/30/2018	367,903	19,783,323	53,773	2.14 %
6/30/2017	365,149	19,222,759	52,644	4.21 %
6/30/2016	362,678	18,321,880	50,518	2.34 %

**HEALTH INSURANCE CREDIT PROGRAM**

Valuation Date	Number	Annual Covered Payroll (\$ in Thousands)	Annual Average Pay	% Change in Average Pay
<b>STATE EMPLOYEES</b>				
6/30/2021	108,528	\$ 7,442,699	\$ 68,579	5.26 %
6/30/2020	110,834	7,221,134	65,153	0.87 %
6/30/2019	106,948	6,907,506	64,588	4.37 %
6/30/2018	107,434	6,635,983	61,883	3.15 %
6/30/2017	108,027	6,480,712	59,992	2.37 %
6/30/2016	107,840	6,319,509	58,601	3.74 %
<b>TEACHERS</b>				
6/30/2021	149,793	\$ 8,971,605	\$ 59,893	1.27 %
6/30/2020	150,681	8,911,307	59,140	2.63 %
6/30/2019	149,396	8,608,489	57,622	3.01 %
6/30/2018	151,585	8,479,023	55,936	1.33 %
6/30/2017	150,416	8,303,502	55,204	7.30 %
6/30/2016	149,018	7,666,824	51,449	1.44 %



**Section II – Membership Data (continued)**

**TABLE 3 - SCHEDULE OF TOTAL ACTIVE MEMBER VALUATION DATA  
(CONTINUED)**

**HEALTH INSURANCE CREDIT PROGRAM**

Valuation Date	Number	Annual Covered Payroll (\$ in Thousands)	Annual Average Pay	% Change in Average Pay
<b><u>PARTICIPATING POLITICAL SUBDIVISIONS</u></b>				
6/30/2021	36,426	\$ 1,507,656	\$ 41,390	4.02 %
6/30/2020	37,398	1,488,073	39,790	2.87 %
6/30/2019	37,448	1,440,731	38,679	(14.99)%
6/30/2018	23,034	1,048,068	45,501	3.52 %
6/30/2017	22,478	987,951	43,952	1.80 %
6/30/2016	21,846	943,186	43,174	2.32 %
<b><u>CONSTITUTIONAL OFFICERS</u></b>				
6/30/2021	13,435	\$ 747,716	\$ 55,654	3.19 %
6/30/2020	13,608	733,934	53,934	2.74 %
6/30/2019	13,302	698,316	52,497	3.78 %
6/30/2018	12,890	652,041	50,585	1.93 %
6/30/2017	12,706	630,541	49,625	1.16 %
6/30/2016	12,374	606,902	49,054	1.16 %
<b><u>SOCIAL SERVICE EMPLOYEES</u></b>				
6/30/2021	6,147	\$ 304,315	\$ 49,506	2.79 %
6/30/2020	6,307	303,771	48,164	1.95 %
6/30/2019	6,048	285,738	47,445	3.31 %
6/30/2018	5,713	261,274	45,733	1.69 %
6/30/2017	5,595	251,620	44,974	1.67 %
6/30/2016	5,418	239,648	44,232	1.87 %
<b><u>REGISTRARS</u></b>				
6/30/2021	265	\$ 14,843	\$ 56,011	9.77 %
6/30/2020	254	12,961	51,028	(0.37)%
6/30/2019	232	11,882	51,216	4.02 %
6/30/2018	233	11,474	49,236	1.80 %
6/30/2017	231	11,173	48,367	1.69 %
6/30/2016	216	10,274	47,565	2.50 %



**Section II – Membership Data (continued)**

**TABLE 3 - SCHEDULE OF TOTAL ACTIVE MEMBER VALUATION DATA  
(CONTINUED)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM**

Valuation Date	Number	Annual Covered Payroll (\$ in Thousands)	Annual Average Pay	% Change in Average Pay
6/30/2021	76,529	\$ 4,576,046	\$ 59,795	6.21 %
6/30/2020	77,848	4,382,943	56,301	(0.07)%
6/30/2019	79,105	4,456,996	56,343	6.06 %
6/30/2018	75,164	3,993,073	53,125	3.82 %
6/30/2017	73,620	3,767,055	51,169	1.13 %
6/30/2016	75,410	3,815,678	50,599	3.74 %

**VIRGINIA LOCAL DISABILITY PROGRAM**

Valuation Date	Number	Annual Covered Payroll (\$ in Thousands)	Annual Average Pay	% Change in Average Pay
<b><u>TEACHERS</u></b>				
6/30/2021	14,312	\$ 642,284	\$ 44,877	2.32 %
6/30/2020	13,027	571,356	43,859	4.61 %
6/30/2019	11,047	463,174	41,928	3.57 %
6/30/2018	9,332	377,798	40,484	(4.05)%
6/30/2017	7,439	305,446	42,195	9.31 %
<b><u>POLITICAL SUBDIVISIONS</u></b>				
6/30/2021	11,017	\$ 423,151	\$ 38,409	4.38 %
6/30/2020	10,672	392,684	36,796	3.04 %
6/30/2019	9,447	337,363	35,711	5.42 %
6/30/2018	7,915	268,121	33,875	3.66 %
6/30/2017	6,331	206,895	32,680	3.42 %



**Section II – Membership Data (continued)**

3. The following table shows the number of covered retired or disabled members on the rolls as of June 30, 2021 together with the amount of their benefit in force under the plan as of that date.

**TABLE 4 - SCHEDULE OF RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
GROUP LIFE INSURANCE PROGRAM\***

Valuation Date	Number Added to Rolls	Life Insurance Amount (\$1,000s)	Number Removed from Rolls	Life Insurance Amount (\$1,000s)	Number on Rolls at the End of the Year	Life Insurance Amount (\$1,000s)	Increase in Life Insurance Amount	Average Life Insurance Amount	Increase in Average Life Insurance Amount
6/30/2021	12,528	\$1,457,980	14,919	\$1,358,144	206,253	\$8,523,862	1.19 %	\$41,327	2.36 %
6/30/2020	23,194	1,799,018	6,571	1,136,382	208,644	8,424,026	8.54 %	40,375	(0.11)%
6/30/2019	12,091	1,480,985	5,675	1,074,045	192,021	7,761,298	5.53 %	40,419	2.01 %
6/30/2018	11,464	1,357,284	5,269	1,071,515	185,605	7,354,358	4.04 %	39,624	0.57 %
6/30/2017**	11,212	1,281,014	4,936	2,445,277	179,410	7,068,589	(14.14)%	39,399	(17.15)%
6/30/2016	11,550	1,324,900	4,564	895,728	173,134	8,232,852	5.50 %	47,552	1.24 %
6/30/2015	11,429	1,275,150	4,519	840,576	166,148	7,803,680	5.90 %	46,968	1.49 %

\* This schedule does not include life insurance benefits payable upon the death of an active member.

\*\* June 30, 2017 valuation reflects adjustment to initial amount reported.

The numbers shown above include members who are receiving long-term disability benefits from the Virginia Sickness and Disability Program (VSDP) and the Virginia Local Disability Program (VLDP). The valuation results include an estimate of retiree liability from the “Life Insurance Only” group.





**Section II – Membership Data (continued)**

**TABLE 4 - SCHEDULE OF RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
(CONTINUED)**

**HEALTH INSURANCE CREDIT PROGRAM\***

Valuation Date	Number Added to Rolls	Health Insurance Credit (\$1,000s)	Number Removed from Rolls	Health Insurance Credit (\$1,000s)	Number on Rolls at the End of the Year	Health Insurance Credit (\$1,000s)	Increase in Health Insurance Credit	Average Health Insurance Credit	Increase in Average Health Insurance Credit
<b>STATE EMPLOYEES**</b>									
6/30/2021	3,025	\$4,420	2,315	\$4,301	52,583	\$77,657	0.15 %	\$1,477	(1.20)%
6/30/2020	2,865	4,452	2,070	3,026	51,873	77,538	1.87 %	1,495	0.34 %
6/30/2019	7,854	11,734	1,517	2,176	51,078	76,112	14.36 %	1,490	0.13 %
6/30/2018	2,558	3,779	4,105	5,981	44,741	66,554	(3.20)%	1,488	0.20 %
6/30/2017	3,364	4,928	1,734	2,671	46,288	68,756	3.39 %	1,485	(0.27)%
6/30/2016	2,881	4,332	1,663	2,369	44,658	66,499	3.06 %	1,489	0.27 %
6/30/2015	2,869	4,226	1,618	2,357	43,440	64,524	2.98 %	1,485	0.00 %
<b>TEACHERS</b>									
6/30/2021	3,959	\$5,274	2,085	\$2,864	71,572	\$98,057	2.52 %	\$1,370	(0.15)%
6/30/2020	3,180	4,275	2,283	3,054	69,698	95,647	1.29 %	1,372	0.00 %
6/30/2019	4,054	5,283	1,585	2,163	68,801	94,426	3.42 %	1,372	(0.36)%
6/30/2018	3,511	4,719	1,534	2,067	66,332	91,306	2.99 %	1,377	(0.07)%
6/30/2017	3,412	4,565	1,470	1,984	64,355	88,654	3.00 %	1,378	(0.07)%
6/30/2016	3,649	4,913	1,329	1,795	62,413	86,073	3.76 %	1,379	(0.07)%
6/30/2015	3,465	4,714	1,493	2,016	60,093	82,955	3.36 %	1,380	(0.07)%

\* Excludes eligible deferred vested members.

\*\* State Employees includes State, SPORS, JRS, VaLORS, ORP and UVA.



**Section II – Membership Data (continued)**

**TABLE 4 - SCHEDULE OF RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
(CONTINUED)**

**HEALTH INSURANCE CREDIT PROGRAM\***

Valuation Date	Number Added to Rolls	Health Insurance Credit (\$1,000s)	Number Removed from Rolls	Health Insurance Credit (\$1,000s)	Number on Rolls at the End of the Year	Health Insurance Credit (\$1,000s)	Increase in Health Insurance Credit	Average Health Insurance Credit	Increase in Average Health Insurance Credit
<b><u>PARTICIPATING POLITICAL SUBDIVISIONS</u></b>									
6/30/2021	898	\$440	524	\$53	11,639	\$5,593	7.43 %	\$481	4.11 %
6/30/2020	780	420	414	203	11,265	5,206	4.35 %	462	0.87 %
6/30/2019	5,937	2,665	151	191	10,899	4,989	98.37 %	458	(6.91)%
6/30/2018	439	216	156	84	5,113	2,515	5.54 %	492	(0.20)%
6/30/2017	394	188	166	80	4,830	2,383	4.75 %	493	(0.20)%
<b><u>CONSTITUTIONAL OFFICERS</u></b>									
6/30/2021	307	\$156	136	\$67	4,186	\$2,138	4.34 %	\$511	0.20 %
6/30/2020	260	138	114	68	4,015	2,049	3.54 %	510	(0.39)%
6/30/2019	312	171	122	60	3,869	1,979	5.94 %	512	0.79 %
6/30/2018	297	145	65	32	3,678	1,868	6.44 %	508	(0.20)%
6/30/2017	290	143	89	42	3,446	1,755	6.11 %	509	(0.20)%

\* Excludes eligible deferred vested members.



**Section II – Membership Data (continued)**

**TABLE 4 - SCHEDULE OF RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
(CONTINUED)**

**HEALTH INSURANCE CREDIT PROGRAM\***

Valuation Date	Number Added to Rolls	Health Insurance Credit (\$1,000s)	Number Removed from Rolls	Health Insurance Credit (\$1,000s)	Number on Rolls at the End of the Year	Health Insurance Credit (\$1,000s)	Increase in Health Insurance Credit	Average Health Insurance Credit	Increase in Average Health Insurance Credit
<b><u>SOCIAL SERVICE EMPLOYEES</u></b>									
6/30/2021	132	\$63	77	\$40	2,220	\$1,118	2.10 %	\$504	(0.40)%
6/30/2020	100	52	73	43	2,165	1,095	0.83 %	506	(0.39)%
6/30/2019	115	64	64	33	2,138	1,086	2.94 %	508	0.40 %
6/30/2018	137	70	47	24	2,087	1,055	4.56 %	506	0.20 %
6/30/2017	147	73	44	21	1,997	1,009	5.43 %	505	0.00 %
<b><u>REGISTRARS</u></b>									
6/30/2021	5	\$2	3	\$3	75	\$38	(2.56)%	\$507	(5.06)%
6/30/2020	6	4	2	1	73	39	8.33 %	534	2.30 %
6/30/2019	5	2	3	1	69	36	2.86 %	522	0.00 %
6/30/2018	5	3	3	2	67	35	2.94 %	522	(0.19)%
6/30/2017	3	1	0	0	65	34	3.03 %	523	(1.69)%

\* Excludes eligible deferred vested members.



*Section II – Membership Data (continued)*

**TABLE 4 - SCHEDULE OF RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
(CONTINUED)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM**

Valuation Date	Number Added to Rolls	Annualized LTD Payments (\$1,000s)	Number Removed from Rolls	Annualized LTD Payments (\$1,000s)	Number on Rolls at the End of the Year	Annualized LTD Payments (\$1,000s)	Increase in Annualized LTD Payments	Average Annualized LTD Payments	Increase in Average Annualized LTD Payments
6/30/2021	322	\$6,590	410	\$7,003	2,360	\$30,117	(1.35)%	\$12,761	2.33 %
6/30/2020	299	6,044	391	6,237	2,448	30,530	(0.63)%	12,471	3.10 %
6/30/2019	305	5,978	418	7,456	2,540	30,723	(4.59)%	12,096	(0.35)%
6/30/2018	339	5,994	407	4,424	2,653	32,201	5.13 %	12,138	7.83 %
6/30/2017	366	6,428	441	6,696	2,721	30,631	(0.87)%	11,257	1.86 %
6/30/2016	377	6,507	423	6,734	2,796	30,899	(0.73)%	11,051	0.90 %
6/30/2015	466	7,923	325	4,112	2,842	31,126	13.95 %	10,952	8.30 %



**Section II – Membership Data (continued)**

**TABLE 4 - SCHEDULE OF RETIRANTS AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS  
(CONTINUED)**

**VIRGINIA LOCAL DISABILITY PROGRAM**

Valuation Date	Number Added to Rolls	Annualized LTD Payments (\$1,000s)	Number Removed from Rolls	Annualized LTD Payments (\$1,000s)	Number on Rolls at the End of the Year	Annualized LTD Payments (\$1,000s)	Increase in Annualized LTD Payments	Average Annualized LTD Payments	Increase in Average Annualized LTD Payments
<b>TEACHERS</b>									
6/30/2021	10	\$184	3	\$48	16	\$208	188.89 %	\$13,000	62.50 %
6/30/2020	6	61	4	61	9	72	0.00 %	8,000	(22.22)%
6/30/2019	4	33	3	36	7	72	(4.00)%	10,286	(17.71)%
6/30/2018	6	75	0	0	6	75	n/a	12,500	n/a
6/30/2017	0	0	1	11	0	0	n/a	0	n/a
<b>POLITICAL SUBDIVISIONS</b>									
6/30/2021	34	\$517	16	\$107	54	\$672	156.49 %	\$12,444	70.98 %
6/30/2020	13	116	5	161	36	262	(14.66)%	7,278	(33.62)%
6/30/2019	11	178	8	184	28	307	(1.92)%	10,964	(12.43)%
6/30/2018	20	244	0	0	25	313	353.62 %	12,520	(3.69)%
6/30/2017	5	69	0	0	5	69	n/a	13,000	n/a



### ***Section III – Assets***

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1. Schedule B shows the additions and deductions of each OPEB Plan for the year preceding the valuation date and a reconciliation of the fund balances at market value. As of June 30, 2021, the market value of assets used to determine the actuarial value of assets for each OPEB Plan is shown below.

**TABLE 5**  
**COMPARISON OF MARKET VALUE OF ASSETS AT**  
**JUNE 30, 2021 AND JUNE 30, 2020**  
**(\$ IN THOUSANDS)**

OPEB Plan	June 30, 2021	June 30, 2020
GLI	\$2,413,074	\$1,855,102
HIC - State Employees	207,855	125,377
HIC - Teachers	194,210	144,158
HIC - Participating Political Subdivisions	33,333	24,468
HIC - Constitutional Officers	6,669	5,114
HIC - Social Service Employees	2,345	1,934
HIC - Registrars	169	126
VSDP	611,919	490,219
VLDP-Teachers	5,588	2,886
VLDP-Political Subdivisions	6,168	3,319



**Section III – Assets (continued)**

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2. Schedule B shows the development of the actuarial value of assets as of June 30, 2021. The following table shows the actuarial value of assets.

**TABLE 6**  
**COMPARISON OF ACTUARIAL VALUE OF ASSETS AT**  
**JUNE 30, 2021 AND JUNE 30, 2020**  
**(\$ IN THOUSANDS)**

OPEB Plan	June 30, 2021	June 30, 2020
GLI	\$2,135,187	\$1,905,233
HIC - State Employees	191,829	129,901
HIC - Teachers	177,304	149,949
HIC - Participating Political Subdivisions*	33,333	24,468
HIC - Constitutional Officers*	6,669	5,114
HIC - Social Service Employees*	2,345	1,934
HIC - Registrars*	169	126
VSDP	547,379	505,236
VLDP-Teachers	5,028	2,973
VLDP-Political Subdivisions	5,604	3,425

\* Actuarial value of assets equal to market value of assets.



**Section IV – Contribution Rates**

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1. The actuarially determined employer contribution rates as a percentage of active member covered payroll for each OPEB Plan based on the June 30, 2021 actuarial valuation are shown in the following table:

**TABLE 7**

**ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION RATE  
EXPRESSED AS A PERCENTAGE OF ACTIVE MEMBER COVERED PAYROLL**

OPEB Plan	June 30, 2021
GLI*	1.19%
HIC - State Employees	1.04%
HIC - Teachers	1.21%
HIC - Participating Political Subdivisions**	0.70%
HIC - Constitutional Officers	0.36%
HIC - Social Service Employees	0.37%
HIC - Registrars	0.32%
VSDP	0.56%
VLDP-Teachers	0.47%
VLDP-Political Subdivisions	0.85%

\* The contribution rate for GLI includes an adjustment of 0.35% for active group life insurance, see Section I for additional detail.

\*\* Average of individual employer rates.





**Section IV – Contribution Rates (continued)**

2. The table below shows the normal contribution rate, the unfunded actuarial accrued liability (UAAL), amortization payment rate, and the resulting actuarially determined employer contribution rate for each OPEB Plan as of June 30, 2021.

**TABLE 8**  
**EMPLOYER CONTRIBUTION RATE EXPRESSED**  
**AS A PERCENTAGE OF ACTIVE MEMBER COVERED PAYROLL**

OPEB Plan	Rate as a Percent of Covered Payroll			
	Normal Cost (a)	Admin Cost (b)	UAAL Amortization Payment* (c)	Actuarially Determined Employer Contribution (d) = (a) + (b) + (c)
GLI**	0.78 %	0.00 %	0.41 %	1.19 %
HIC - State Employees	0.29 %	0.01 %	0.74 %	1.04 %
HIC - Teachers	0.24 %	0.01 %	0.96 %	1.21 %
HIC - Participating Political Subdivisions***	0.16 %	0.01 %	0.53 %	0.70 %
HIC - Constitutional Officers	0.12 %	0.00 %	0.24 %	0.36 %
HIC - Social Service Employees	0.10 %	0.00 %	0.27 %	0.37 %
HIC - Registrars	0.13 %	0.00 %	0.19 %	0.32 %
VSDP	0.86 %	0.17 %	(0.47)%	0.56 %
VLDP-Teachers	0.29 %	0.18 %	0.00 %	0.47 %
VLDP-Political Subdivisions	0.57 %	0.29 %	(0.01)%	0.85 %

\* The amortization period of the unfunded actuarial accrued liability begins at 30 years on June 30, 2013 and will decrease by one each year until reaching 0 years. Each subsequent year a new base will be added to the unfunded accrued liability and will be amortized over a closed 20-year period. See Schedule C for the Amortization Schedules showing each base comprising the unfunded accrued liability.

\*\* The normal cost rate for GLI includes an addition of 0.35% for active group life insurance, see Section I for additional detail.

\*\*\* Average of individual employer rates.



***Section IV – Contribution Rates (continued)***

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3. Contributions to GLI consist of one-year term active member life insurance provided through an insurance company and advance funding payments to support postemployment life insurance. Based on the results of the valuation, we are recommending a total contribution rate of 49.7¢ per month per \$1,000 of active members’ life insurance. The recommended contributions are summarized in the following table:

**TABLE 9**

**GROUP LIFE INSURANCE PROGRAM  
EMPLOYER CONTRIBUTION RATE EXPRESSED  
AS CENTS PER \$1,000 OF LIFE INSURANCE COVERAGE**

Recommended Contribution	Rate	
	¢ per \$1,000 of Active Member's Life Insurance	% of Covered Payroll
Active Member Term Cost	14.7	0.35%
Postemployment Advance Funding	<u>35</u>	<u>0.84%</u>
Total	49.7	1.19%



## ***Section V – Accounting Information***

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1. Below is a distribution of the number of members by type of membership, as follows:

### **MEMBER COUNTS AS OF JUNE 30, 2021**

<b>OPEB Plan</b>	<b>Active Members</b>	<b>Retired, Disabled, Eligible Deferred Vested, or Ported LTC Members</b>	<b>Total</b>
GLI	358,905	213,194	572,099
HIC - State Employees	108,528	54,536	163,064
HIC - Teachers	149,793	75,049	224,842
HIC - Participating Political Subdivisions	36,426	12,269	48,695
HIC - Constitutional Officers	13,435	4,290	17,725
HIC - Social Service Employees	6,147	2,252	8,399
HIC - Registrars	265	77	342
VSDP	76,529	5,757	82,286
VLDP-Teachers	14,312	24	14,336
VLDP-Political Subdivisions	11,017	62	11,079



**Section V – Accounting Information (continued)**

2. Below is the Schedule of Funding Progress, as follows:

**SCHEDULE OF FUNDING PROGRESS  
GROUP LIFE INSURANCE PROGRAM  
(\$ IN THOUSANDS)**

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2021	\$2,135,187	\$ 3,524,464	\$1,389,277	60.58%	\$21,052,089	6.60 %
6/30/2020	1,905,233	3,583,131	1,677,898	53.17%	20,456,977	8.20 %
6/30/2019	1,741,406	3,414,322	1,672,916	51.00%	20,498,084	8.16 %
6/30/2018	1,574,017	3,166,533	1,592,516	49.71%	19,783,323	8.05 %
6/30/2017	1,410,087	3,024,718	1,614,631	46.62%	19,222,759	8.40 %
6/30/2016	1,247,564	2,974,468	1,726,904	41.94%	18,321,880	9.43 %

**SCHEDULE OF FUNDING PROGRESS  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN THOUSANDS)**

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
<b>STATE EMPLOYEES</b>						
6/30/2021	\$ 191,829	\$ 1,044,663	\$ 852,834	18.36 %	\$ 7,442,699	11.46 %
6/30/2020	129,901	1,024,443	894,542	12.68 %	7,221,134	12.39 %
6/30/2019	109,417	1,026,752	917,335	10.66 %	6,907,506	13.28 %
6/30/2018	96,294	995,659	899,365	9.67 %	6,635,983	13.55 %
6/30/2017	79,451	990,724	911,273	8.02 %	6,480,712	14.06 %
6/30/2016	70,798	987,641	916,843	7.17 %	6,319,509	14.51 %
<b>TEACHERS</b>						
6/30/2021	\$ 177,304	\$ 1,471,397	\$1,294,093	12.05 %	\$ 8,971,605	14.42 %
6/30/2020	149,949	1,430,538	1,280,589	10.48 %	8,911,307	14.37 %
6/30/2019	130,043	1,425,883	1,295,840	9.12 %	8,608,489	15.05 %
6/30/2018	113,136	1,379,073	1,265,937	8.20 %	8,479,023	14.93 %
6/30/2017	96,987	1,357,921	1,260,934	7.14 %	8,303,502	15.19 %
6/30/2016	86,701	1,351,203	1,264,502	6.42 %	7,666,824	16.49 %



*Section V – Accounting Information (continued)*

**SCHEDULE OF FUNDING PROGRESS  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN THOUSANDS)**

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
<b><u>PARTICIPATING POLITICAL SUBDIVISIONS</u></b>						
6/30/2021	\$ 33,333	\$ 82,823	\$ 49,490	40.25 %	\$ 1,507,656	3.28 %
6/30/2020	24,468	76,672	52,204	31.91 %	1,488,073	3.51 %
6/30/2019	24,468	72,855	48,387	33.58 %	1,440,731	3.36 %
6/30/2018	23,161	40,943	17,782	56.57 %	1,048,068	1.70 %
<b><u>CONSTITUTIONAL OFFICERS</u></b>						
6/30/2021	\$ 6,669	\$ 33,241	\$ 26,572	20.06 %	\$ 747,716	3.55 %
6/30/2020	5,114	32,183	27,069	15.89 %	733,934	3.69 %
6/30/2019	4,479	31,567	27,088	14.19 %	698,316	3.88 %
6/30/2018	3,278	29,720	26,442	11.03 %	652,041	4.06 %
<b><u>SOCIAL SERVICE EMPLOYEES</u></b>						
6/30/2021	\$ 2,345	\$ 14,833	\$ 12,488	15.81 %	\$ 304,315	4.10 %
6/30/2020	1,934	14,580	12,646	13.26 %	303,771	4.16 %
6/30/2019	2,273	14,632	12,359	15.54 %	285,738	4.33 %
6/30/2018	1,319	14,197	12,878	9.29 %	261,272	4.93 %
<b><u>REGISTRARS</u></b>						
6/30/2021	\$ 169	\$ 590	\$ 421	28.64 %	\$ 14,843	2.84 %
6/30/2020	126	576	450	21.88 %	12,961	3.47 %
6/30/2019	88	549	461	15.96 %	11,882	3.88 %
6/30/2018	58	537	479	10.80 %	11,472	4.18 %



**Section V – Accounting Information (continued)**

**SCHEDULE OF FUNDING PROGRESS  
VIRGINIA SICKNESS AND DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL)* (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2021	\$ 547,379	\$ 250,103	\$ (297,276)	218.86%	\$ 4,576,046	(6.50)%
6/30/2020	505,236	248,869	(256,367)	203.01%	4,382,943	(5.85)%
6/30/2019	484,986	248,512	(236,474)	195.16%	4,456,996	(5.31)%
6/30/2018	460,466	265,292	(195,174)	173.57%	3,993,073	(4.89)%
6/30/2017	437,372	226,512	(210,860)	193.09%	3,767,055	(5.60)%
6/30/2016	416,248	240,886	(175,362)	172.80%	3,815,678	(4.60)%

**SCHEDULE OF FUNDING PROGRESS  
VIRGINIA LOCAL DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Actuarial Valuation Date*	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL)* (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
<b>TEACHERS</b>						
6/30/2021	\$ 5,028	\$ 5,102	\$ 74	98.55%	\$ 642,284	0.01 %
6/30/2020	2,973	3,333	360	89.20%	571,356	0.06 %
6/30/2019	1,662	2,622	960	63.39%	463,174	0.21 %
6/30/2018	674	1,383	709	48.73%	377,798	0.19 %
6/30/2017	324	812	488	39.90%	305,446	0.16 %
6/30/2016	57	439	382	12.98%	193,042	0.20 %
<b>POLITICAL SUBDIVISIONS</b>						
6/30/2021	\$ 5,604	\$ 5,005	\$ (599)	111.97%	\$ 423,151	(0.14)%
6/30/2020	3,425	3,752	327	91.28%	392,684	0.08 %
6/30/2019	1,971	2,817	846	69.97%	337,363	0.25 %
6/30/2018	853	2,732	1,879	31.22%	268,121	0.70 %
6/30/2017	413	825	412	50.06%	209,895	0.20 %
6/30/2016	52	378	326	13.76%	147,729	0.22 %



**Section V – Accounting Information (continued)**

3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2021. Additional information as of the latest actuarial valuation follows:

All OPEB Plans	
Valuation Date	6/30/2021
Amortization Method	Level Percentage of Pay, Closed
Actuarial Cost Method	Entry Age Normal
Payroll Growth Rate	3.00%
Actuarial Assumptions:	
Investment Rate of Return*	6.75%
*Includes inflation at	2.50%

The assumed investment rate of return reflects the fact a trust has been established to set aside assets that are legally held exclusively for postemployment benefits.

OPEB Plan	Asset Valuation Method
GLI	5-year Smoothed Market
HIC – State Employees	5-year Smoothed Market
HIC – Teachers	5-year Smoothed Market
HIC – Participating Political Subdivisions	Market Value of Assets
HIC - Constitutional Officers	Market Value of Assets
HIC – Social Service Employees	Market Value of Assets
HIC – Registrars	Market Value of Assets
VSDP	5-year Smoothed Market
VLDP – Teachers	5-year Smoothed Market
VLDP – Political Subdivisions	5-year Smoothed Market

OPEB Plan	Benefit Increases
GLI	\$8,722 Minimum Benefit 2.25%
VSDP	LTD Post-Disablement Benefit Increases Plan 1: 2.50% Plan 2: 2.25%



**Section VI – Derivation of Experience Gains and Losses**

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)-  
DURING FISCAL YEAR ENDING 2021  
GROUP LIFE INSURANCE PROGRAM  
(\$ IN THOUSANDS)**

Fiscal Year 2021	
<b>1. Beginning of Year:</b>	
(a) Actuarial Accrued Liability (AAL)	\$3,583,131
(b) Normal Cost	\$90,767
(c) Benefit Payments*	\$172,264
<b>2. End of Year:</b>	
(a) Expected AAL, before Assumption Changes $[(1a) + (1b)] \times 1.0675 - [(1c) \times (1 + [0.0675 \times 0.50])]$	\$3,743,808
(b) Actual AAL, before Assumption Changes	\$3,717,938
(c) Actual AAL, after Assumption Changes	\$3,524,464
<b>3. Total AAL Gain (Loss)</b>	
(a) Gain (Loss) due Experience (2a) - (2b)	\$25,870
(b) Gain (Loss) due to Assumption Changes (2b) - (2c)	\$193,474
Total	\$219,344
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$1,905,233
<b>5. Net External Cash Flow During the Year</b>	
(a) Expected Contributions	\$192,795
(b) Actual Contributions*	\$206,172
(c) Benefit Payments*	\$172,264
<b>6. End of Year:</b>	
(a) Expected AVA using expected contributions $[(4) + (5a)] \times 1.0675 - [(5c) \times (1 + [0.0675 \times 0.50])]$	\$2,061,567
(b) Expected AVA using actual contributions $[(4) \times 1.0675] + [(5b) - (5c)] \times (1 + [0.0675 \times 0.50])]$	\$2,068,889
(c) Actual AVA	\$2,135,187
<b>7. AVA Gain (Loss)</b>	
(a) Gain/(Loss) due to contributions different than expected (6b) - (6a)	\$7,322
(b) Gain/(Loss) due to investment experience (6c) - (6b)	\$66,298
Total	\$73,620
<b>8. Expected UAAL at End of Year</b> (2a) - (6a)	\$1,682,241
<b>9. Actual UAAL at End of Year</b> (2c) - (6c)	\$1,389,277
<b>10. UAAL Gain (Loss)</b>	
(a) Gain (Loss) Experience (3a) + 7	\$99,490
(b) Gain (Loss) due to Assumption Changes (3b)	\$193,474
Total	\$292,964

\* Contributions and benefit payments exclude amounts for the active group.





**Section VI – Derivation of Experience Gains and Losses (continued)**

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2021  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN THOUSANDS)**

Fiscal Year 2021	State Employees*	Teachers
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$1,024,443	\$1,430,538
(b) Normal Cost	\$19,140	\$20,340
(c) Benefit Payments	\$71,537	\$93,643
<b>2. End of Year:</b>		
(a) Expected AAL, before Assumption Changes [(1a) + (1b)] x 1.0675 - [(1c) x (1 + [0.0675 x 0.50])]	\$1,040,073	\$1,452,009
(b) Actual AAL, before Assumption Changes	\$1,033,299	\$1,457,810
(c) Actual AAL, after Assumption Changes	\$1,044,663	\$1,471,397
<b>3. Total AAL Gain (Loss)</b>		
(a) Gain (Loss) due Experience (2a) - (2b)	\$6,774	(\$5,801)
(b) Gain (Loss) due to Assumption Changes (2b) - (2c)	(\$11,364)	(\$13,587)
Total	(\$4,590)	(\$19,388)
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$129,901	\$149,949
<b>5. Net External Cash Flow During the Year</b>		
(a) Expected Contributions	\$74,767	\$101,249
(b1) Actual Contributions	\$80,602	\$106,671
(b2) Actual Contributions - Additional	\$38,656	
(c) Benefit Payments	\$71,537	\$93,643
<b>6. End of Year:</b>		
(a) Expected AVA using expected contributions [(4) + (5a)] x 1.0675 - [(5c) x (1 + [0.0675 x 0.50])]	\$144,532	\$171,350
(b) Expected AVA using actual contributions [(4) x 1.0675] + [((5b1) - (5c)) x (1 + [0.0675 x 0.50])] + [(5b2)]	\$186,696	\$173,538
(c) Actual AVA	\$191,829	\$177,304
<b>7. AVA Gain (Loss)</b>		
(a) Gain/(Loss) due to contributions different than expected (6b) - (6a)	\$42,164	\$2,188
(b) Gain/(Loss) due to investment experience (6c) - (6b)	\$5,133	\$3,766
Total	\$47,297	\$5,954
<b>8. Expected UAAL at End of Year</b> (2a) - (6a)	\$895,541	\$1,280,659
<b>9. Actual UAAL at End of Year</b> (2c) - (6c)	\$852,834	\$1,294,093
<b>10. UAAL Gain (Loss)</b>		
(a) Gain (Loss) Experience (3a) + 7	\$54,071	\$153
(b) Gain (Loss) due to Assumption Changes (3b)	(\$11,364)	(\$13,587)
Total	\$42,707	(\$13,434)

\* State Employees include State, JRS, SPORS, VaLORS, ORP, and UVA employees.



**Section VI – Derivation of Experience Gains and Losses (continued)**

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2021  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN THOUSANDS)**

Fiscal Year 2021	Participating Political Subdivisions	Constitutional Officers
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$76,672	\$32,183
(b) Normal Cost	\$1,428	\$726
(c) Benefit Payments	\$3,060	\$2,047
<b>2. End of Year:</b>		
(a) Expected AAL, before Assumption and Benefit Changes $[(1a) + (1b)] \times 1.0675 - [(1c) \times (1 + [0.0675 \times 0.50])]$	\$80,208	\$33,015
(b) Actual AAL, before Assumption and Benefit Changes	\$81,265	\$32,715
(c) Actual AAL, after Assumption and Benefit Changes	\$82,823	\$33,241
<b>3. Total AAL Gain (Loss)</b>		
(a) Gain (Loss) due Experience (2a) - (2b)	(\$1,057)	\$300
(b) Gain (Loss) due to Assumption and Benefit Changes (2b) - (2c)	(\$1,558)	(\$526)
Total	(\$2,615)	(\$226)
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$24,468	\$5,114
<b>5. Net External Cash Flow During the Year</b>		
(a) Expected Contributions (beginning of year)	\$4,994	\$2,452
(b) Actual Contributions (middle of year)	\$5,156	\$2,650
(c) Benefit Payments	\$3,060	\$2,047
<b>6. End of Year:</b>		
(a) Expected AVA using expected contributions $[(4) + (5a)] \times 1.0675 - [(5c) \times (1 + [0.0675 \times 0.50])]$	\$28,287	\$5,961
(b) Expected AVA using actual contributions $[(4) \times 1.0675] + [((5b) - (5c)) \times (1 + [0.0675 \times 0.50])]$	\$28,286	\$6,083
(c) Actual AVA	\$33,333	\$6,669
<b>7. AVA Gain (Loss)</b>		
(a) Gain/(Loss) due to contributions different than expected (6b) - (6a)	(\$1)	\$122
(b) Gain/(Loss) due to investment experience (6c) - (6b)	\$5,047	\$586
Total	\$5,046	\$708
<b>8. Expected UAAL at End of Year</b> (2a) - (6a)	\$51,921	\$27,054
<b>9. Actual UAAL at End of Year</b> (2c) or (2d) - (6b)	\$49,490	\$26,572
<b>10. UAAL Gain (Loss)</b>		
(a) Gain (Loss) Experience (3a) + 7	\$3,989	\$1,008
(b) Gain (Loss) due to Assumption and Benefit Changes (3b)	(\$1,558)	(\$526)
Total	\$2,431	\$482



**Section VI – Derivation of Experience Gains and Losses (continued)**

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2021  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN THOUSANDS)**

Fiscal Year 2021	Social Service Employees	Registrars
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$14,580	\$576
(b) Normal Cost	\$282	\$17
(c) Benefit Payments	\$1,078	\$35
<b>2. End of Year:</b>		
(a) Expected AAL, before Assumption Changes [(1a) + (1b)] x 1.0675 - [(1c) x (1 + [0.0675 x 0.50])]	\$14,751	\$597
(b) Actual AAL, before Assumption Changes	\$14,592	\$581
(c) Actual AAL, after Assumption Changes	\$14,833	\$590
<b>3. Total AAL Gain (Loss)</b>		
(a) Gain (Loss) due Experience (2a) - (2b)	\$159	\$16
(b) Gain (Loss) due to Assumption Changes (2b) - (2c)	(\$241)	(\$9)
Total	(\$82)	\$7
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$1,934	\$126
<b>5. Net External Cash Flow During the Year</b>		
(a) Expected Contributions (beginning of year)	\$1,076	\$45
(b) Actual Contributions (middle of year)	\$1,154	\$54
(c) Benefit Payments	\$1,078	\$35
<b>6. End of Year:</b>		
(a) Expected AVA using expected contributions [(4) + (5a)] x 1.0675 - [(5c) x (1 + [0.0675 x 0.50])]	\$2,099	\$146
(b) Expected AVA using actual contributions [(4) x 1.0675] + [(5b) - (5c)] x (1 + [0.0675 x 0.50])]	\$2,143	\$154
(c) Actual AVA	\$2,345	\$169
<b>7. AVA Gain (Loss)</b>		
(a) Gain/(Loss) due to contributions different than expected (6b) - (6a)	\$44	\$8
(b) Gain/(Loss) due to investment experience (6c) - (6b)	\$202	\$15
Total	\$246	\$23
<b>8. Expected UAAL at End of Year</b> (2a) - (6a)	\$12,652	\$451
<b>9. Actual UAAL at End of Year</b> (2c) - (6c)	\$12,488	\$421
<b>10. UAAL Gain (Loss)</b>		
(a) Gain (Loss) Experience (3a) + 7	\$405	\$39
(b) Gain (Loss) due to Assumption Changes (3b)	(\$241)	(\$9)
Total	\$164	\$30



**Section VI – Derivation of Experience Gains and Losses (continued)**

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2021  
VIRGINIA SICKNESS AND DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Fiscal Year 2021	
<b>1. Beginning of Year:</b>	
(a) Actuarial Accrued Liability (AAL)	\$248,869
(b) Normal Cost	\$30,612
(c) Benefit Payments	\$28,790
<b>2. End of Year:</b>	
(a) Expected AAL, before Assumption Changes	\$268,585
$[(1a) + (1b)] \times 1.0675 - [(1c) \times (1 + [0.0675 \times 0.50])]$	
(b) Actual AAL, before Assumption Changes	\$254,646
(c) Actual AAL, after Assumption Changes	\$250,103
<b>3. Total AAL Gain (Loss)</b>	
(a) Gain (Loss) due Experience (2a) - (2b)	\$13,939
(b) Gain (Loss) due to Assumption Changes (2b) - (2c)	\$4,543
Total	\$18,482
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$505,236
<b>5. Net External Cash Flow During the Year</b>	
(a) Expected Contributions	\$12,903
(b) Actual Contributions	\$19,318
(c) Benefit Payments	\$28,790
<b>6. End of Year:</b>	
(a) Expected AVA using expected contributions	\$523,352
$[(4) + (5a)] \times 1.0675 - [(5c) \times (1 + [0.0675 \times 0.50])]$	
(b) Expected AVA using actual contributions	\$529,548
$[(4) \times 1.0675] + [(5b) - (5c)] \times (1 + [0.0675 \times 0.50])]$	
(c) Actual AVA	\$547,379
<b>7. AVA Gain (Loss)</b>	
(a) Gain/(Loss) due to contributions different than expected (6b) - (6a)	\$6,196
(b) Gain/(Loss) due to investment experience (6c) - (6b)	\$17,831
Total	\$24,027
<b>8. Expected UAAL at End of Year</b>	(\$254,767)
(2a) - (6a)	
<b>9. Actual UAAL at End of Year</b>	(\$297,276)
(2c) - (6c)	
<b>10. UAAL Gain (Loss)</b>	
(a) Gain (Loss) Experience (3a) + 7	\$37,966
(b) Gain (Loss) due to Assumption Changes (3b)	\$4,543
Total	\$42,509



**Section VI – Derivation of Experience Gains and Losses (continued)**

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2021  
VIRGINIA LOCAL DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Fiscal Year 2021	Teachers	Political Subdivisions
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$3,333	\$3,752
(b) Normal Cost	\$1,279	\$1,705
(c) Benefit Payments	\$366	\$385
<b>2. End of Year:</b>		
(a) Expected AAL, before Assumption Changes $[(1a) + (1b)] \times 1.0675 - [(1c) \times (1 + [0.0675 \times 0.50])]$	\$4,546	\$5,427
(b) Actual AAL, before Assumption Changes	\$4,799	\$5,520
(c) Actual AAL, after Assumption Changes	\$5,102	\$5,005
<b>3. Total AAL Gain (Loss)</b>		
(a) Gain (Loss) due Experience (2a) - (2b)	(\$253)	(\$93)
(b) Gain (Loss) due to Assumption Changes (2b) - (2c)	(\$303)	\$515
Total	(\$556)	\$422
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$2,973	\$3,425
<b>5. Net External Cash Flow During the Year</b>		
(a) Expected Contributions	\$1,313	\$1,738
(b) Actual Contributions	\$2,037	\$2,148
(c) Benefit Payments	\$366	\$385
<b>6. End of Year:</b>		
(a) Expected AVA using expected contributions $[(4) + (5a)] \times 1.0675 - [(5c) \times (1 + [0.0675 \times 0.50])]$	\$4,197	\$5,114
(b) Expected AVA using actual contributions $[(4) \times 1.0675] + [(5b) - (5c)] \times (1 + [0.0675 \times 0.50])]$	\$4,901	\$5,479
(c) Actual AVA	\$5,028	\$5,604
<b>7. AVA Gain (Loss)</b>		
(a) Gain/(Loss) due to contributions different than expected (6b) - (6a)	\$704	\$365
(b) Gain/(Loss) due to investment experience (6c) - (6b)	\$127	\$125
Total	\$831	\$490
<b>8. Expected UAAL at End of Year</b> (2a) - (6a)	\$349	\$313
<b>9. Actual UAAL at End of Year</b> (2c) - (6c)	\$74	(\$599)
<b>10. UAAL Gain (Loss)</b>		
(a) Gain (Loss) Experience (3a) + 7	\$578	\$397
(b) Gain (Loss) due to Assumption Changes (3b)	(\$303)	\$515
Total	\$275	\$912



## Schedule A – Results of the Valuation

### GROUP LIFE INSURANCE PROGRAM (\$ IN THOUSANDS)

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll</b>	\$ 21,052,089	\$ 20,456,977
<b>2. Actuarial Accrued Liability</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 1,759,380	\$ 1,957,777
(b) Present retired and disabled members	2,315,129	2,265,656
(c) Total present value of prospective benefits	\$ 4,074,509	\$ 4,223,433
(d) Present value of future normal contributions	550,045	640,302
(e) Total actuarial accrued liability (2c) - (2d)	\$ 3,524,464	\$ 3,583,131
<b>3. Present Assets for Valuation Purposes</b>	\$ 2,135,187	\$ 1,905,233
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 1,389,277	\$ 1,677,898
<b>5. Normal Contribution</b>	\$ 79,634	\$ 90,767
<b>6. Administrative Expense</b>	\$ 862	\$ 824
<b>7. Accrued Liability Contribution</b>	84,942	102,028
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 165,438	\$ 193,619
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll</b>	0.43%	0.51%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.00%	0.00%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll* (7) / (1)</b>	0.41%	0.51%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.84%	1.02%
<b>14. Adjustment for Active Group Life Insurance</b>	0.35%	0.34%
<b>15. Total Actuarially Determined Employer Contribution for Plan (12) + (13)</b>	1.19%	1.36%

\* Includes timing adjustment.



**Schedule A – Results of the Valuation (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
STATE EMPLOYEES  
(State, SPORS, JRS, VaLORS, ORP, and UVA)  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll</b>	\$ 7,442,699	\$ 7,221,134
<b>2. Actuarial Accrued Liability</b> Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 469,467	\$ 474,205
(b) Present retired and disabled members	707,502	690,846
(c) Total present value of prospective benefits	\$ 1,176,969	\$ 1,165,051
(d) Present value of future normal contributions	132,306	140,608
(e) Total actuarial accrued liability (2c) - (2d)	\$ 1,044,663	\$ 1,024,443
<b>3. Present Assets for Valuation Purposes</b>	\$ 191,829	\$ 129,901
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 852,834	\$ 894,542
<b>5. Normal Contribution</b>	\$ 18,774	\$ 19,140
<b>6. Administrative Expense</b>	589	230
<b>7. Accrued Liability Contribution</b>	54,362	55,627
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 73,725	\$ 74,997
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll</b>	0.29%	0.30%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.01%	0.00%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll* (7) / (1)</b>	0.74%	0.78%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	1.04%	1.08%

\* Includes timing adjustment.



**Schedule A – Results of the Valuation (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
TEACHERS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll</b>	\$ 8,971,605	\$ 8,911,307
<b>2. Actuarial Accrued Liability</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 692,734	\$ 699,099
(b) Present retired and disabled members	933,691	905,279
(c) Total present value of prospective benefits	\$ 1,626,425	\$ 1,604,378
(d) Present value of future normal contributions	155,028	173,840
(e) Total actuarial accrued liability (2c) - (2d)	\$ 1,471,397	\$ 1,430,538
<b>3. Present Assets for Valuation Purposes</b>	\$ 177,304	\$ 149,949
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 1,294,093	\$ 1,280,589
<b>5. Normal Contribution</b>	\$ 18,900	\$ 20,340
<b>6. Administrative Expense</b>	501	257
<b>7. Accrued Liability Contribution</b>	84,258	80,909
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 103,659	\$ 101,506
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll</b>	0.24%	0.26%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.01%	0.00%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll* (7) / (1)</b>	0.96%	0.92%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	1.21%	1.18%

\* Includes timing adjustment.





**Schedule A – Results of the Valuation (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
PARTICIPATING POLITICAL SUBDIVISIONS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll</b>	\$ 1,507,656	\$ 1,488,073
<b>2. Actuarial Accrued Liability</b> Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 41,570	\$ 41,380
(b) Present retired and disabled members	50,844	44,880
(c) Total present value of prospective benefits	\$ 92,414	\$ 86,260
(d) Present value of future normal contributions	9,591	9,588
(e) Total actuarial accrued liability (2c) - (2d)	\$ 82,823	\$ 76,672
<b>3. Present Assets for Valuation Purposes</b>	\$ 33,333	\$ 24,468
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 49,490	\$ 52,204
<b>5. Normal Contribution</b>	\$ 1,460	\$ 1,428
<b>6. Administrative Expense</b>	86	47
<b>7. Accrued Liability Contribution</b>	3,491	3,566
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 5,037	\$ 5,041
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll*</b>	0.16%	0.15%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.01%	0.00%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll* (7) / (1)</b>	0.53%	0.49%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.70%	0.64%

\* Includes timing adjustment and is average rate as a percent of covered payroll. Accrued liability contribution for some participating locals includes an additional funding contribution rate to allow the use of the 6.75% investment return as the single equivalent interest rate assumption for purposes of the GASB 74/75 statements. These figures are the average of all participating Political Subdivisions after updates to the additional funding contribution rate and the plan surcharge. For more information about plan surcharge see Schedule D.



**Schedule A – Results of the Valuation (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
CONSTITUTIONAL OFFICERS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll</b>	\$ 747,716	\$ 733,934
<b>2. Actuarial Accrued Liability</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 18,369	\$ 18,078
(b) Present retired and disabled members	20,571	19,301
(c) Total present value of prospective benefits	\$ 38,940	\$ 37,379
(d) Present value of future normal contributions	5,699	5,196
(e) Total actuarial accrued liability (2c) - (2d)	\$ 33,241	\$ 32,183
<b>3. Present Assets for Valuation Purposes</b>	\$ 6,669	\$ 5,114
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 26,572	\$ 27,069
<b>5. Normal Contribution</b>	\$ 769	\$ 726
<b>6. Administrative Expense</b>	16	9
<b>7. Accrued Liability Contribution</b>	1,745	1,726
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 2,530	\$ 2,461
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll</b>	0.12%	0.11%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.00%	0.00%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll* (7) / (1)</b>	0.24%	0.24%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.36%	0.35%

\* Includes timing adjustment.



**Schedule A – Results of the Valuation (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
SOCIAL SERVICE EMPLOYEES  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll</b>	\$ 304,315	\$ 303,771
<b>2. Actuarial Accrued Liability</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 6,113	\$ 6,489
(b) Present retired and disabled members	10,468	10,080
(c) Total present value of prospective benefits	<u>\$ 16,581</u>	<u>\$ 16,569</u>
(d) Present value of future normal contributions	<u>1,748</u>	<u>1,989</u>
(e) Total actuarial accrued liability (2c) - (2d)	\$ 14,833	\$ 14,580
<b>3. Present Assets for Valuation Purposes</b>	\$ 2,345	\$ 1,934
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 12,488	\$ 12,646
<b>5. Normal Contribution</b>	\$ 261	\$ 282
<b>6. Administrative Expense</b>	6	3
<b>7. Accrued Liability Contribution</b>	<u>808</u>	<u>794</u>
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 1,075	\$ 1,079
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll</b>	0.10%	0.11%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.00%	0.00%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll* (7) / (1)</b>	<u>0.27%</u>	<u>0.28%</u>
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.37%	0.39%

\* Includes timing adjustment.



**Schedule A – Results of the Valuation (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
REGISTRARS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll</b>	\$ 14,843	\$ 12,961
<b>2. Actuarial Accrued Liability</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 319	\$ 321
(b) Present retired and disabled members	358	346
(c) Total present value of prospective benefits	\$ 677	\$ 667
(d) Present value of future normal contributions	87	91
(e) Total actuarial accrued liability (2c) - (2d)	\$ 590	\$ 576
<b>3. Present Assets for Valuation Purposes</b>	\$ 169	\$ 126
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 421	\$ 450
<b>5. Normal Contribution</b>	\$ 16	\$ 17
<b>6. Administrative Expense</b>	0	0
<b>7. Accrued Liability Contribution</b>	28	28
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 44	\$ 45
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll</b>	0.13%	0.15%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.00%	0.00%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll* (7) / (1)</b>	0.19%	0.22%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.32%	0.37%

\* Includes timing adjustment.



**Schedule A – Results of the Valuation (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll*</b>	\$ 4,576,046	\$ 4,382,943
<b>2. Actuarial Accrued Liability</b> Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 340,225	\$ 317,862
(b) Present retired and disabled members	170,851	171,585
(c) Total present value of prospective benefits	\$ 511,076	\$ 489,447
(d) Present value of future normal contributions	260,973	240,578
(e) Total actuarial accrued liability (2c) - (2d)	\$ 250,103	\$ 248,869
<b>3. Present Assets for Valuation Purposes</b>	\$ 547,379	\$ 505,236
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ (297,276)	\$ (256,367)
<b>5. Normal Contribution</b>	\$ 34,629	\$ 30,612
<b>6. Administrative Expense</b>	7,737	7,243
<b>7. Accrued Liability Contribution</b>	(21,162)	(17,709)
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 21,204	\$ 20,146
<b>9. Amortization Period (Years)</b>	13-22	14-23
<b>10. Normal Contribution as a Percent of Payroll</b>	0.86%	0.80%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.17%	0.17%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll** (7) / (1)</b>	(0.47)%	(0.41)%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.56%	0.56%

\* Covered payroll consist of only those State, VaLORS, and SPORS employees participating in VSDP and excludes the compensation of those employees hired before January 1, 1999 who did not elect VSDP during one of two open enrollment periods offered in 1999 and 2002.

\*\* Includes timing adjustment.



**Schedule A – Results of the Valuation (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
TEACHERS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll*</b>	\$ 642,284	\$ 571,356
<b>2. Actuarial Accrued Liability</b> Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 19,254	\$ 10,253
(b) Present retired and disabled members	1,203	639
(c) Total present value of prospective benefits	\$ 20,457	\$ 10,892
(d) Present value of future normal contributions	15,355	7,559
(e) Total actuarial accrued liability (2c) - (2d)	\$ 5,102	\$ 3,333
<b>3. Present Assets for Valuation Purposes</b>	\$ 5,028	\$ 2,973
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ 74	\$ 360
<b>5. Normal Contribution</b>	\$ 1,579	\$ 1,279
<b>6. Administrative Expense</b>	1,129	1,032
<b>7. Accrued Liability Contribution</b>	14	34
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 2,722	\$ 2,345
<b>9. Amortization Period (Years)</b>	13-20	14-20
<b>10. Normal Contribution as a Percent of Payroll</b>	0.29%	0.26%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.18%	0.18%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll** (7) / (1)</b>	0.00%	0.01%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.47%	0.45%

\* Covered payroll consist of only those Teachers employees participating in VLDP.

\*\* Includes timing adjustment.



**Schedule A – Results of the Valuation (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
POLITICAL SUBDIVISIONS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
<b>1. Covered Payroll*</b>	\$ 423,151	\$ 392,684
<b>2. Actuarial Accrued Liability</b> Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 15,565	\$ 10,243
(b) Present retired and disabled members	2,641	1,841
(c) Total present value of prospective benefits	\$ 18,206	\$ 12,084
(d) Present value of future normal contributions	13,201	8,332
(e) Total actuarial accrued liability (2c) - (2d)	\$ 5,005	\$ 3,752
<b>3. Present Assets for Valuation Purposes</b>	\$ 5,604	\$ 3,425
<b>4. Unfunded Actuarial Accrued Liability (2e) - 3</b>	\$ (599)	\$ 327
<b>5. Normal Contribution</b>	\$ 1,975	\$ 1,705
<b>6. Administrative Expense</b>	1,190	1,142
<b>7. Accrued Liability Contribution</b>	(27)	33
<b>8. Total Contribution (5) + (6) + (7)</b>	\$ 3,138	\$ 2,880
<b>9. Amortization Period (Years)</b>	13-20	14-20
<b>10. Normal Contribution as a Percent of Payroll</b>	0.57%	0.52%
<b>11. Administrative Expense as a Percent of Payroll</b>	0.29%	0.29%
<b>12. Accrued Liability Contribution as a Percent of Covered Payroll** (7) / (1)</b>	(0.01%)	0.01%
<b>13. Total Contribution as a Percent of Payroll (10) + (11) + (12)</b>	0.85%	0.82%

\* Covered payroll consist of only those Political Subdivisions employees participating in VLDP.

\*\* Includes timing adjustment.



**Schedule A – Solvency Test**

**GROUP LIFE INSURANCE PROGRAM  
(\$ IN THOUSANDS)**

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Total		(1)	(2)	(3)
6/30/2021	n/a	\$2,315,129	\$1,209,335	\$3,524,464	\$2,135,187	n/a	92.23%	0.00%
6/30/2020	n/a	2,265,657	1,317,474	3,583,131	1,905,233	n/a	84.09	0.00
6/30/2019	n/a	2,071,215	1,343,107	3,414,322	1,741,406	n/a	84.08	0.00
6/30/2018	n/a	1,901,090	1,265,443	3,166,533	1,574,017	n/a	82.80	0.00
6/30/2017	n/a	1,786,401	1,238,317	3,024,718	1,410,087	n/a	78.93	0.00

**HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN THOUSANDS)**

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Total		(1)	(2)	(3)
<b>STATE EMPLOYEES</b>								
6/30/2021	n/a	\$707,502	\$337,161	\$1,044,663	\$191,829	n/a	27.11%	0.00%
6/30/2020	n/a	690,846	333,597	1,024,443	129,901	n/a	18.80	0.00
6/30/2019	n/a	683,387	343,365	1,026,752	109,417	n/a	16.01	0.00
6/30/2018	n/a	651,476	344,183	995,659	96,294	n/a	14.78	0.00
6/30/2017	n/a	638,266	352,458	990,724	79,451	n/a	12.45	0.00
<b>TEACHERS</b>								
6/30/2021	n/a	\$933,691	\$537,706	\$1,471,397	\$177,304	n/a	18.99%	0.00%
6/30/2020	n/a	905,279	525,259	1,430,538	149,949	n/a	16.56	0.00
6/30/2019	n/a	896,306	529,577	1,425,883	130,043	n/a	14.51	0.00
6/30/2018	n/a	851,963	527,110	1,379,073	113,136	n/a	13.28	0.00
6/30/2017	n/a	832,771	525,150	1,357,921	96,987	n/a	11.65	0.00





**Schedule A – Solvency Test (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN THOUSANDS)**

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Total		(1)	(2)	(3)
<b><u>PARTICIPATING POLITICAL SUBDIVISIONS</u></b>								
6/30/2021	n/a	\$50,844	\$31,979	\$82,823	\$33,333	n/a	65.56%	0.00%
6/30/2020	n/a	44,880	31,792	76,672	24,468	n/a	54.52	0.00
6/30/2019	n/a	41,097	31,758	72,855	24,468	n/a	59.54	0.00
6/30/2018	n/a	22,409	18,534	40,943	23,161	n/a	100.00	4.06
6/30/2017	n/a	21,326	17,974	39,300	22,167	n/a	100.00	4.68
<b><u>CONSTITUTIONAL OFFICERS</u></b>								
6/30/2021	n/a	\$20,571	\$12,670	\$33,241	\$6,669	n/a	32.42%	0.00%
6/30/2020	n/a	19,301	12,882	32,183	5,114	n/a	26.50	0.00
6/30/2019	n/a	18,551	13,016	31,567	4,479	n/a	24.14	0.00
6/30/2018	n/a	17,190	12,530	29,720	3,278	n/a	19.07	0.00
6/30/2017	n/a	16,175	12,549	28,724	2,427	n/a	15.00	0.00
<b><u>SOCIAL SERVICE EMPLOYEES</u></b>								
6/30/2021	n/a	\$10,468	\$4,365	\$14,833	\$2,345	n/a	22.40%	0.00%
6/30/2020	n/a	10,080	4,500	14,580	1,934	n/a	19.19	0.00
6/30/2019	n/a	10,056	4,576	14,632	2,273	n/a	22.60	0.00
6/30/2018	n/a	9,677	4,520	14,197	1,319	n/a	13.63	0.00
6/30/2017	n/a	9,313	4,677	13,990	1,091	n/a	11.71	0.00
<b><u>REGISTRARS</u></b>								
6/30/2021	n/a	\$358	\$232	\$590	\$169	n/a	47.21%	0.00%
6/30/2020	n/a	346	230	576	126	n/a	36.42	0.00
6/30/2019	n/a	330	219	549	88	n/a	26.67	0.00
6/30/2018	n/a	328	209	537	58	n/a	17.68	0.00
6/30/2017	n/a	303	218	521	34	n/a	11.22	0.00



**Schedule A – Solvency Test (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Total		(1)	(2)	(3)
6/30/2021	n/a	\$170,851	\$79,252	\$250,103	\$547,379	n/a	100.00%	475.10%
6/30/2020	n/a	171,585	77,284	248,869	505,236	n/a	100.00	431.72
6/30/2019	n/a	170,146	78,366	248,512	484,986	n/a	100.00	401.76
6/30/2018	n/a	187,514	77,778	265,292	460,466	n/a	100.00	350.94
6/30/2017	n/a	160,283	66,229	226,512	437,372	n/a	100.00	418.38

**VIRGINIA LOCAL DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Valuation Date	Aggregate Accrued Liabilities For				Actuarial Value of Assets	Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Total		(1)	(2)	(3)
<b><u>TEACHERS</u></b>								
6/30/2021	n/a	\$1,203	\$3,899	\$5,102	\$5,028	n/a	100.00%	98.10%
6/30/2020	n/a	639	2,694	3,333	2,973	n/a	100.00	86.64
6/30/2017	n/a	806	1,816	2,622	1,662	n/a	100.00	47.14
6/30/2018	n/a	271	1,112	1,383	674	n/a	100.00	36.24
6/30/2017	n/a	103	709	812	324	n/a	100.00	31.17
<b><u>POLITICAL SUBDIVISIONS</u></b>								
6/30/2021	n/a	\$2,641	\$2,364	\$5,005	\$5,604	n/a	100.00%	100.00%
6/30/2020	n/a	1,841	1,911	3,752	3,425	n/a	100.00	82.89
6/30/2017	n/a	1,511	1,306	2,817	1,971	n/a	100.00	35.22
6/30/2018	n/a	1,571	1,161	2,732	853	n/a	54.30	0.00
6/30/2017	n/a	361	464	825	413	n/a	100.00	11.21



## ***Schedule B – Plan Assets***

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For HIC – Participating Political Subdivisions, HIC – Constitutional Officers, HIC – Social Service Employees, and HIC – Registrars, the actuarial value of assets equals the market value of assets. For all other OPEB Plans, the actuarial value of assets is a smoothed market value, phasing-in investment returns above or below the 6.75% assumption over five years. This smoothed value is subject to a corridor that restricts the actuarial value of assets from being more than 120% or less than 80% of the market value of assets. The reconciliation of assets, development of actuarial value of assets, and calculation of excess (shortfall) investment income for the valuation are shown on the following pages.



**Schedule B – Plan Assets (continued)**

**GROUP LIFE INSURANCE PROGRAM  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 1,855,102	\$ 1,762,972
Revenue for the year		
Contributions		
Member	\$ 165,629	\$ 162,925
Employer	111,797	107,252
Total contributions	\$ 277,426	\$ 270,177
Net investment income	534,709	36,276
Miscellaneous revenue	0	0
2. Total revenue	\$ 812,135	\$ 306,453
Expenditures for the year		
Benefit payments	\$ 251,383	\$ 212,060
Administrative expenses	862	824
Other expenses	1,918	1,439
3. Total expenditures	\$ 254,163	\$ 214,323
4. Change in net assets (2) - (3)	\$ 557,972	\$ 92,130
5. Market value of assets at end of year (1) + (4)	\$ 2,413,074	\$ 1,855,102



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
STATE EMPLOYEES  
(State, SPORS, JRS, VaLORS, ORP, and UVA)  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 125,377	\$ 109,023
Revenue for the year		
Contributions	\$ 81,191	\$ 84,849
Contributions - Additional	38,656	0
Other Revenue	(30)	(9)
Net investment income	34,790	2,184
2. Total revenue	\$ 154,607	\$ 87,024
Expenditures for the year		
Benefit payments	\$ 71,537	\$ 70,440
Administrative expenses	589	230
Other Expenditures	3	-
3. Total expenditures	\$ 72,129	\$ 70,670
4. Change in net assets (2) - (3)	\$ 82,478	\$ 16,354
5. Market value of assets at end of year (1) + (4)	\$ 207,855	\$ 125,377



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
TEACHERS  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 144,158	\$ 129,015
Revenue for the year		
Contributions	\$ 107,172	\$ 105,209
Other Revenue	(13)	(14)
Net investment income	37,093	2,291
2. Total revenue	\$ 144,252	\$ 107,486
Expenditures for the year		
Benefit payments	\$ 93,643	\$ 92,086
Administrative expenses	501	257
Other Expenditures	56	-
3. Total expenditures	\$ 94,200	\$ 92,343
4. Change in net assets (2) - (3)	\$ 50,052	\$ 15,143
5. Market value of assets at end of year (1) + (4)	\$ 194,210	\$ 144,158



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
PARTICIPATING POLITICAL SUBDIVISIONS  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 24,468	\$ 24,468
Revenue for the year		
Contributions	\$ 5,239	\$ 2,553
Other Revenue	3	1
Net investment income	6,711	489
2. Total revenue	\$ 11,953	\$ 3,043
Expenditures for the year		
Benefit payments	\$ 3,060	\$ 2,996
Administrative expenses	86	47
Other Expenditures	(58)	-
3. Total expenditures	\$ 3,088	\$ 3,043
4. Change in net assets (2) - (3)	\$ 8,865	\$ -
5. Market value of assets at end of year (1) + (4)	\$ 33,333	\$ 24,468



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
CONSTITUTIONAL OFFICERS  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 5,114	\$ 4,479
Revenue for the year		
Contributions	\$ 2,666	\$ 2,526
Other Revenue	(2)	-
Net investment income	954	88
2. Total revenue	\$ 3,618	\$ 2,614
Expenditures for the year		
Benefit payments	\$ 2,047	\$ 1,970
Administrative expenses	16	9
3. Total expenditures	\$ 2,063	\$ 1,979
4. Change in net assets (2) - (3)	\$ 1,555	\$ 635
5. Market value of assets at end of year (1) + (4)	\$ 6,669	\$ 5,114





**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
SOCIAL SERVICE EMPLOYEES  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 1,934	\$ 2,273
Revenue for the year		
Contributions	\$ 1,160	\$ 689
Other Revenue	-	-
Net investment income	335	33
2. Total revenue	\$ 1,495	\$ 722
Expenditures for the year		
Benefit payments	\$ 1,078	\$ 1,058
Administrative expenses	6	3
3. Total expenditures	\$ 1,084	\$ 1,061
4. Change in net assets (2) - (3)	\$ 411	\$ (339)
5. Market value of assets at end of year (1) + (4)	\$ 2,345	\$ 1,934



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
REGISTRARS  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 126	\$ 88
Revenue for the year		
Contributions	\$ 54	\$ 44
Other Revenue	0	(1)
Net investment income	24	2
2. Total revenue	\$ 78	\$ 45
Expenditures for the year		
Benefit payments	\$ 35	\$ 7
Administrative expenses	0	0
3. Total expenditures	\$ 35	\$ 7
4. Change in net assets (2) - (3)	\$ 43	\$ 38
5. Market value of assets at end of year (1) + (4)	\$ 169	\$ 126



**Schedule B – Plan Assets (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date - June 30, 2021	LTD	LTC	Total
1. Market value of assets at beginning of year	\$ 402,401	\$ 87,818	\$ 490,219
Revenue for the year			
Contributions	\$ 25,671	\$ 1,384	\$ 27,055
Other Revenue	(166)	(36)	(202)
Net investment income	107,845	23,529	131,374
2. Total revenue	\$ 133,350	\$ 24,877	\$ 158,227
Expenditures for the year			
Benefit payments	\$ 28,704	\$ 86	\$ 28,790
Third-party administrator charges	7,137	0	7,137
Administrative expenses	493	107	600
3. Total expenditures	\$ 36,334	\$ 193	\$ 36,527
4. Change in net assets (2) - (3)	\$ 97,016	\$ 24,684	\$ 121,700
5. Market value of assets at end of year (1) + (4)	\$ 499,417	\$ 112,502	\$ 611,919

Valuation Date - June 30, 2020	LTD	LTC	Total
1. Market value of assets at beginning of year	\$ 402,450	\$ 85,791	\$ 488,241
Revenue for the year			
Contributions	\$ 26,560	\$ 1,143	\$ 27,703
Other Revenue	(100)	(21)	(121)
Net investment income	7,785	1,659	9,444
2. Total revenue	\$ 34,245	\$ 2,781	\$ 37,026
Expenditures for the year			
Benefit payments	\$ 27,162	\$ 643	\$ 27,805
Third-party administrator charges	6,611	0	6,611
Administrative expenses	521	111	632
3. Total expenditures	\$ 34,294	\$ 754	\$ 35,048
4. Change in net assets (2) - (3)	\$ (49)	\$ 2,027	\$ 1,978
5. Market value of assets at end of year (1) + (4)	\$ 402,401	\$ 87,818	\$ 490,219



**Schedule B – Plan Assets (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
RECONCILIATION OF ASSETS  
(\$ IN THOUSANDS)**

Valuation Date - June 30, 2021	Teachers	Political Subdivisions
1. Market value of assets at beginning of year	\$ 2,886	\$ 3,319
Revenue for the year		
Contributions	\$ 3,166	\$ 3,338
Other Revenue	0	0
Net investment income	1,031	1,086
2. Total revenue	\$ 4,197	\$ 4,424
Expenditures for the year		
Benefit payments	\$ 366	\$ 385
Third-party administrative charges	988	1,042
Administrative expenses	141	148
3. Total expenditures	\$ 1,495	\$ 1,575
4. Change in net assets (2) - (3)	\$ 2,702	\$ 2,849
5. Market value of assets at end of year (1) + (4)	\$ 5,588	\$ 6,168

Valuation Date - June 30, 2020	Teachers	Political Subdivisions
1. Market value of assets at beginning of year	\$ 1,660	\$ 1,963
Revenue for the year		
Contributions	\$ 2,427	\$ 2,684
Other Revenue	0	0
Net investment income	44	50
2. Total revenue	\$ 2,471	\$ 2,734
Expenditures for the year		
Benefit payments	\$ 213	\$ 236
Third-party administrative charges	935	1,034
Administrative expenses	97	108
3. Total expenditures	\$ 1,245	\$ 1,378
4. Change in net assets (2) - (3)	\$ 1,226	\$ 1,356
5. Market value of assets at end of year (1) + (4)	\$ 2,886	\$ 3,319



**Schedule B – Plan Assets (continued)**

**GROUP LIFE INSURANCE PROGRAM  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2021  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021
1. Actuarial value of assets at beginning of year	\$ 1,905,233
2. Market value of assets at end of year	\$ 2,413,074
3. Market value of assets at beginning of year	\$ 1,855,102
4. Cash Flow	
a. Contributions	\$ 277,426
b. Benefit Payments	(251,383)
c. Administrative Expenses	(862)
d. Miscellaneous revenue and expenses	(1,918)
e. Net Cash Flow: [ 4a + 4b + 4c + 4d ]	\$ 23,263
5. Investment Income	
a. Market total: 2 - 3 - 4e	\$ 534,709
b. Assumed Rate	6.75%
c. Amount of Immediate Recognition [ 3 x 5b ] + [ 4e x 5b x 0.5 ]	\$ 126,004
d. Amount for Phased-in Recognition: 5a - 5c	\$ 408,705
6. Phased-In Recognition of Investment Income	
a. Current Year: 0.20 x 5d	\$ 81,741
b. First Prior Year	(16,922)
c. Second Prior Year	(22)
d. Third Prior Year	1,733
e. Fourth Prior Year	14,157
f. Total Recognized Investment Gain/(Loss)	\$ 80,687
7. Adjustment to Beginning of Year Market Value	\$ 0
8. Actuarial value of assets at end of year	\$ 2,135,187



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2021  
(\$ IN THOUSANDS)**

Group	State Employees*	Teachers
1. Actuarial value of assets at beginning of year	\$ 129,901	\$ 149,949
2. Market value of assets at end of year	\$ 207,855	\$ 194,210
3. Market value of assets at beginning of year	\$ 125,377	\$ 144,158
4. Cash Flow		
a. Contributions	\$ 119,847	\$ 107,172
b. Benefit Payments	(71,537)	(93,643)
c. Administrative Expenses	(589)	(501)
d. Miscellaneous revenue and expenses	(33)	(69)
e. Net Cash Flow: [ 4a + 4b + 4c + 4d ]	\$ 47,688	\$ 12,959
5. Investment Income		
a. Market total: 2 - 3 - 4e	\$ 34,790	\$ 37,093
b. Assumed Rate	6.75%	6.75%
c. Amount of Immediate Recognition [ 3 x 5b ] + [ 4e x 5b x 0.5 ]	\$ 10,072	\$ 10,168
d. Amount for Phased-in Recognition: 5a - 5c	\$ 24,718	\$ 26,925
6. Phased-In Recognition of Investment Income		
a. Current Year: 0.20 x 5d	\$ 4,944	\$ 5,385
b. First Prior Year	(1,131)	(1,370)
c. Second Prior Year	(155)	(165)
d. Third Prior Year	(46)	(192)
e. Fourth Prior Year	556	570
f. Total Recognized Investment Gain/(Loss)	\$ 4,168	\$ 4,228
7. Adjustment to Beginning of Year Market Value	\$ 0	\$ 0
8. Actuarial value of assets at end of year	\$ 191,829	\$ 177,304

\* Includes State, SPORS, JRS, VaLORS, ORP, and UVA.



**Schedule B – Plan Assets (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2021  
(\$ IN THOUSANDS)**

<b>Benefit</b>	<b>LTD</b>	<b>LTC</b>
1. Actuarial value of assets at beginning of year	\$ 414,613	\$ 90,623
2. Market value of assets at end of year	\$ 499,417	\$ 112,502
3. Market value of assets at beginning of year	\$ 402,401	\$ 87,818
4. Cash Flow		
a. Contributions	\$ 25,671	\$ 1,384
b. Benefit Payments	(28,704)	(86)
c. Administrative Expenses	(7,630)	(107)
d. Miscellaneous revenue and expenses	(166)	(36)
e. Net Cash Flow: [ 4a + 4b + 4c + 4d ]	\$ (10,829)	\$ 1,155
5. Investment Income		
a. Market total: 2 - 3 - 4e	\$ 107,845	\$ 23,529
b. Assumed Rate	6.75%	6.75%
c. Amount of Immediate Recognition [ 3 x 5b ] + [ 4e x 5b x 0.5 ]	\$ 26,797	\$ 5,967
d. Amount for Phased-in Recognition: 5a - 5c	\$ 81,048	\$ 17,562
6. Phased-In Recognition of Investment Income		
a. Current Year: 0.20 x 5d	\$ 16,210	\$ 3,512
b. First Prior Year	(3,823)	(829)
c. Second Prior Year	(279)	(67)
d. Third Prior Year	266	36
e. Fourth Prior Year	3,388	639
f. Total Recognized Investment Gain/(Loss)	\$ 15,762	\$ 3,291
7. Adjustment to Beginning of Year Market Value	\$ 0	\$ 0
8. Actuarial value of assets at end of year	\$ 446,343	\$ 101,036



**Schedule B – Plan Assets (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2021  
(\$ IN THOUSANDS)**

Group	Teachers	Political Subdivisions
1. Actuarial value of assets at beginning of year	\$ 2,973	\$ 3,425
2. Market value of assets at end of year	\$ 5,588	\$ 6,168
3. Market value of assets at beginning of year	\$ 2,886	\$ 3,319
4. Cash Flow		
a. Contributions	\$ 3,166	\$ 3,338
b. Benefit Payments	(366)	(385)
c. Administrative Expenses	(1,129)	(1,190)
d. Miscellaneous revenue and expenses	0	0
e. Net Cash Flow: [ 4a + 4b + 4c + 4d ]	<u>\$ 1,671</u>	<u>\$ 1,763</u>
5. Investment Income		
a. Market total: 2 - 3 - 4e	\$ 1,031	\$ 1,086
b. Assumed Rate	6.75%	6.75%
c. Amount of Immediate Recognition [ 3 x 5b ] + [ 4e x 5b x 0.5 ]	\$ 251	\$ 284
d. Amount for Phased-in Recognition: 5a - 5c	\$ 780	\$ 802
6. Phased-In Recognition of Investment Income		
a. Current Year: 0.20 x 5d	\$ 156	\$ 160
b. First Prior Year	(21)	(25)
c. Second Prior Year	1	0
d. Third Prior Year	(1)	(1)
e. Fourth Prior Year	(2)	(2)
f. Total Recognized Investment Gain/(Loss)	<u>\$ 133</u>	<u>\$ 132</u>
7. Adjustment to Beginning of Year Market Value	\$ 0	\$ 0
8. Actuarial value of assets at end of year	\$ 5,028	\$ 5,604





**Schedule B – Plan Assets (continued)**

**GROUP LIFE INSURANCE PROGRAM  
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 1,855,102	\$ 1,762,972
2. Net external cash flow during the year	\$ 23,263	\$ 55,854
3. Market value of assets at end of year	\$ 2,413,074	\$ 1,855,102
4. Actual investment income during the year based on market value: (3) - (2) - (1)	\$ 534,709	\$ 36,276
5. Assumed earning rate	6.75%	6.75%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 125,219	\$ 119,001
b. Net external cash flow: (2) x (5) x 0.50	785	1,885
c. Total: (6a) + (6b)	\$ 126,004	\$ 120,886
7. Excess investment income for the year: (4) - (6c)	\$ 408,705	\$ (84,610)



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
STATE EMPLOYEES  
(State, SPORS, JRS, VaLORS, ORP, and UVA)  
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 125,377	\$ 109,023
2. Net external cash flow during the year	\$ 47,688	\$ 14,170
3. Market value of assets at end of year	\$ 207,855	\$ 125,377
4. Actual investment income during the year based on market value: (3) - (2) - (1)	\$ 34,790	\$ 2,184
5. Assumed earning rate	6.75%	6.75%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 8,463	\$ 7,359
b. Net external cash flow: (2) x (5) x 0.50	1,609	478
c. Total: (6a) + (6b)	\$ 10,072	\$ 7,837
7. Excess investment income for the year: (4) - (6c)	\$ 24,718	\$ (5,653)



**Schedule B – Plan Assets (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
TEACHERS  
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2021	June 30, 2020
1. Market value of assets at beginning of year	\$ 144,158	\$ 129,015
2. Net external cash flow during the year	\$ 12,959	\$ 12,852
3. Market value of assets at end of year	\$ 194,210	\$ 144,158
4. Actual investment income during the year based on market value: (3) - (2) - (1)	\$ 37,093	\$ 2,291
5. Assumed earning rate	6.75%	6.75%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 9,731	\$ 8,709
b. Net external cash flow: (2) x (5) x 0.50	437	434
c. Total: (6a) + (6b)	\$ 10,168	\$ 9,143
7. Excess investment income for the year: (4) - (6c)	\$ 26,925	\$ (6,852)



**Schedule B – Plan Assets (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME  
(\$ IN THOUSANDS)**

Valuation Date - June 30, 2021	LTD	LTC
1. Market value of assets at beginning of year	\$ 402,401	\$ 87,818
2. Net external cash flow during the year	\$ (10,829)	\$ 1,155
3. Market value of assets at end of year	\$ 499,417	\$ 112,502
4. Actual investment income during the year based on market value: (3) - (2) - (1)	\$ 107,845	\$ 23,529
5. Assumed earning rate	6.75%	6.75%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 27,162	\$ 5,928
b. Net external cash flow: (2) x (5) x 0.50	(365)	39
c. Total: (6a) + (6b)	\$ 26,797	\$ 5,967
7. Excess investment income for the year: (4) - (6c)	\$ 81,048	\$ 17,562

Valuation Date - June 30, 2020	LTD	LTC
1. Market value of assets at beginning of year	\$ 402,450	\$ 85,791
2. Net external cash flow during the year	\$ (7,834)	\$ 368
3. Market value of assets at end of year	\$ 402,401	\$ 87,818
4. Actual investment income during the year based on market value: (3) - (2) - (1)	\$ 7,785	\$ 1,659
5. Assumed earning rate	6.75%	6.75%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 27,166	\$ 5,791
b. Net external cash flow: (2) x (5) x 0.50	(264)	12
c. Total: (6a) + (6b)	\$ 26,902	\$ 5,803
7. Excess investment income for the year: (4) - (6c)	\$ (19,117)	\$ (4,144)



**Schedule B – Plan Assets (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME  
(\$ IN THOUSANDS)**

Valuation Date - June 30, 2021	Teachers	Political Subdivisions
1. Market value of assets at beginning of year	\$ 2,886	\$ 3,319
2. Net external cash flow during the year	\$ 1,671	\$ 1,763
3. Market value of assets at end of year	\$ 5,588	\$ 6,168
4. Actual investment income during the year based on market value: (3) - (2) - (1)	\$ 1,031	\$ 1,086
5. Assumed earning rate	6.75%	6.75%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 195	\$ 224
b. Net external cash flow: (2) x (5) x 0.50	56	60
c. Total: (6a) + (6b)	\$ 251	\$ 284
7. Excess investment income for the year: (4) - (6c)	\$ 780	\$ 802

Valuation Date - June 30, 2020	Teachers	Political Subdivisions
1. Market value of assets at beginning of year	\$ 1,660	\$ 1,963
2. Net external cash flow during the year	\$ 1,182	\$ 1,306
3. Market value of assets at end of year	\$ 2,886	\$ 3,319
4. Actual investment income during the year based on market value: (3) - (2) - (1)	\$ 44	\$ 50
5. Assumed earning rate	6.75%	6.75%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 112	\$ 132
b. Net external cash flow: (2) x (5) x 0.50	40	44
c. Total: (6a) + (6b)	\$ 152	\$ 176
7. Excess investment income for the year: (4) - (6c)	\$ (108)	\$ (126)



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule**

**GROUP LIFE INSURANCE PROGRAM  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

Description	Original Amount	Outstanding	July 1, 2020	Outstanding	July 1, 2021	Years
		Balance as of June 30, 2020	Amortization Payment	Balance as of June 30, 2021	Amortization Payment	Remaining as of June 30, 2021
June 30, 2013 Legacy UAAL	\$1,735,144	\$1,827,132	\$114,480	\$1,828,256	\$117,914	22 Years
June 30, 2014 Experience (Gain)/Loss	(45,419)	(42,001)	(3,746)	(40,837)	(3,858)	13 Years
June 30, 2015 Experience (Gain)/Loss	(27,163)	(25,682)	(2,173)	(25,096)	(2,238)	14 Years
June 30, 2016 Experience (Gain)/Loss	10,216	9,832	793	9,649	816	15 Years
June 30, 2017 Assumption and Method Changes	(49,110)	(45,832)	(3,534)	(45,153)	(3,641)	16 Years
June 30, 2017 Experience (Gain)/Loss	(77,647)	(77,885)	(6,006)	(76,731)	(6,187)	16 Years
June 30, 2018 Experience (Gain)/Loss	(35,056)	(34,582)	(2,559)	(34,185)	(2,636)	17 Years
June 30, 2019 Assumption and Method Changes	120,018	119,310	8,500	118,290	8,755	18 Years
June 30, 2019 Experience (Gain)/Loss	(50,640)	(50,341)	(3,586)	(49,911)	(3,694)	18 Years
June 30, 2020 Experience (Gain)/Loss	(2,053)	(2,053)	(141)	(2,041)	(145)	19 Years
June 30, 2021 Assumption and Method Changes	(193,474)	n/a	n/a	(193,474)	(13,303)	20 Years
June 30, 2021 Experience (Gain)/Loss	(99,490)	n/a	n/a	(99,490)	(6,841)	20 Years
		<b>\$1,677,898</b>	<b>\$102,028</b>	<b>\$1,389,277</b>	<b>\$84,942</b>	

Projected UAAL	
Date	(\$ in Thousands)
July 1, 2021	\$1,389,277
July 1, 2022	1,392,376
July 1, 2023	1,392,964
July 1, 2024	1,390,792
July 1, 2025	1,385,588
July 1, 2043	0



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
STATE EMPLOYEES  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

<b>Description</b>	<b>Original Amount</b>	<b>Outstanding Balance as of June 30, 2020</b>	<b>July 1, 2020 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2021</b>	<b>July 1, 2021 Amortization Payment</b>	<b>Years Remaining as of June 30, 2021</b>
June 30, 2013 Legacy UAAL	\$889,809	\$936,983	\$58,707	\$937,560	\$60,468	22 Years
June 30, 2014 Experience (Gain)/Loss	1,656	1,530	136	1,488	141	13 Years
June 30, 2015 Experience (Gain)/Loss	(1,294)	(1,225)	(104)	(1,197)	(107)	14 Years
June 30, 2016 Experience (Gain)/Loss	(707)	(680)	(55)	(667)	(56)	15 Years
June 30, 2017 Assumption and Method Changes	(12,857)	(12,550)	(968)	(12,364)	(997)	16 Years
June 30, 2017 Experience (Gain)/Loss	187	183	14	180	15	16 Years
June 30, 2018 Experience (Gain)/Loss	(17,855)	(17,613)	(1,304)	(17,410)	(1,343)	17 Years
June 30, 2019 Assumption and Method Changes	22,635	22,502	1,603	22,310	1,651	18 Years
June 30, 2019 Experience (Gain)/Loss	(9,383)	(9,328)	(665)	(9,248)	(684)	18 Years
June 30, 2020 Experience (Gain)/Loss	(25,260)	(25,260)	(1,737)	(25,111)	(1,789)	19 Years
June 30, 2021 Assumption and Method Changes	11,364	n/a	n/a	11,364	781	20 Years
June 30, 2021 Experience (Gain)/Loss	(54,071)	n/a	n/a	(54,071)	(3,718)	20 Years
		<b>\$894,542</b>	<b>\$55,627</b>	<b>\$852,834</b>	<b>\$54,362</b>	

**Projected UAAL**

<b>Date</b>	<b>(\$ in Thousands)</b>
July 1, 2021	\$852,834
July 1, 2022	852,368
July 1, 2023	850,130
July 1, 2024	845,948
July 1, 2025	839,638
July 1, 2043	0



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
TEACHERS  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

Description	Original	Outstanding	July 1, 2020	Outstanding	July 1, 2021	Years
	Amount	Balance as of June 30, 2020	Amortization Payment	Balance as of June 30, 2021	Amortization Payment	Remaining as of June 30, 2021
June 30, 2013 Legacy UAAL	\$1,190,780	\$1,253,908	\$78,564	\$1,254,680	\$80,921	22 Years
June 30, 2014 Experience (Gain)/Loss	14,338	13,260	1,183	12,892	1,218	13 Years
June 30, 2015 Experience (Gain)/Loss	9,296	8,790	744	8,589	766	14 Years
June 30, 2016 Experience (Gain)/Loss	13,656	13,143	1,060	12,899	1,091	15 Years
June 30, 2017 Assumption and Method Changes	(16,036)	(15,652)	(1,207)	(15,420)	(1,243)	16 Years
June 30, 2017 Experience (Gain)/Loss	3,250	3,173	245	3,126	252	16 Years
June 30, 2018 Experience (Gain)/Loss	(2,546)	(2,512)	(186)	(2,483)	(191)	17 Years
June 30, 2019 Assumption and Method Changes	34,873	34,667	2,470	34,370	2,544	18 Years
June 30, 2019 Experience (Gain)/Loss	(10,638)	(10,576)	(753)	(10,486)	(776)	18 Years
June 30, 2020 Experience (Gain)/Loss	(17,612)	(17,612)	(1,211)	(17,508)	(1,247)	19 Years
June 30, 2021 Assumption and Method Changes	13,587	n/a	n/a	13,587	934	20 Years
June 30, 2021 Experience (Gain)/Loss	(153)	n/a	n/a	(153)	(11)	20 Years
		<b>\$1,280,589</b>	<b>\$80,909</b>	<b>\$1,294,093</b>	<b>\$84,258</b>	

**Projected UAAL**

Date	(\$ in Thousands)
July 1, 2021	\$1,294,093
July 1, 2022	1,291,501
July 1, 2023	1,286,033
July 1, 2024	1,277,418
July 1, 2025	1,265,358
July 1, 2043	0





**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
CONSTITUTIONAL OFFICERS  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

<b>Description</b>	<b>Original Amount</b>	<b>Outstanding Balance as of June 30, 2020</b>	<b>July 1, 2020 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2021</b>	<b>July 1, 2021 Amortization Payment</b>	<b>Years Remaining as of June 30, 2021</b>
June 30, 2013 Legacy UAAL	\$23,939	\$25,208	\$1,579	\$25,224	\$1,627	22 Years
June 30, 2014 Experience (Gain)/Loss	(716)	(662)	(59)	(644)	(61)	13 Years
June 30, 2015 Experience (Gain)/Loss	1,837	1,737	147	1,697	151	14 Years
June 30, 2016 Experience (Gain)/Loss	502	484	39	475	40	15 Years
June 30, 2017 Assumption and Experience (Gain)/Loss	(183)	(180)	(14)	(177)	(14)	16 Years
June 30, 2018 Experience (Gain)/Loss	(1)	(1)	0	(1)	0	17 Years
June 30, 2019 Assumption and Method Changes	768	763	54	757	56	18 Years
June 30, 2019 Experience (Gain)/Loss	(228)	(226)	(16)	(224)	(17)	18 Years
June 30, 2020 Experience (Gain)/Loss	(54)	(54)	(4)	(53)	(4)	19 Years
June 30, 2021 Assumption and Method Changes	526	n/a	n/a	526	36	20 Years
June 30, 2021 Experience (Gain)/Loss	(1,008)	n/a	n/a	(1,008)	(69)	20 Years
		<b>\$27,069</b>	<b>\$1,726</b>	<b>\$26,572</b>	<b>\$1,745</b>	

**Projected UAAL**

<b>Date</b>	<b>(\$ in Thousands)</b>
July 1, 2021	\$26,572
July 1, 2022	26,503
July 1, 2023	26,374
July 1, 2024	26,179
July 1, 2025	25,913
July 1, 2043	0



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
SOCIAL SERVICE EMPLOYEES  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

<b>Description</b>	<b>Original Amount</b>	<b>Outstanding Balance as of June 30, 2020</b>	<b>July 1, 2020 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2021</b>	<b>July 1, 2021 Amortization Payment</b>	<b>Years Remaining as of June 30, 2021</b>
June 30, 2013 Legacy UAAL	\$11,900	\$12,532	\$785	\$12,540	\$809	22 Years
June 30, 2014 Experience (Gain)/Loss	(824)	(762)	(68)	(741)	(70)	13 Years
June 30, 2015 Experience (Gain)/Loss	1,155	1,092	92	1,068	95	14 Years
June 30, 2016 Experience (Gain)/Loss	252	241	19	237	20	15 Years
June 30, 2017 Assumption and Experience (Gain)/Loss	(48)	(47)	(4)	(46)	(4)	16 Years
June 30, 2018 Experience (Gain)/Loss	(97)	(95)	(7)	(94)	(7)	17 Years
June 30, 2019 Assumption and Method Changes	326	325	23	322	24	18 Years
June 30, 2019 Experience (Gain)/Loss	(903)	(898)	(64)	(890)	(66)	18 Years
June 30, 2020 Experience (Gain)/Loss	258	258	18	256	18	19 Years
June 30, 2021 Assumption and Method Changes	241	n/a	n/a	241	17	20 Years
June 30, 2021 Experience (Gain)/Loss	(405)	n/a	n/a	(405)	(28)	20 Years
		<b>\$12,646</b>	<b>\$794</b>	<b>\$12,488</b>	<b>\$808</b>	

<b>Projected UAAL</b>	
<b>Date</b>	<b>(\$ in Thousands)</b>
July 1, 2021	\$12,488
July 1, 2022	12,468
July 1, 2023	12,422
July 1, 2024	12,345
July 1, 2025	12,234
July 1, 2043	0



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
REGISTRARS  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

<b>Description</b>	<b>Original Amount</b>	<b>Outstanding Balance as of June 30, 2020</b>	<b>July 1, 2020 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2021</b>	<b>July 1, 2021 Amortization Payment</b>	<b>Years Remaining as of June 30, 2021</b>
June 30, 2013 Legacy UAAL	\$447	\$470	\$29	\$471	\$30	22 Years
June 30, 2014 Experience (Gain)/Loss	(1)	(1)	0	(1)	0	13 Years
June 30, 2015 Experience (Gain)/Loss	41	41	3	41	4	14 Years
June 30, 2016 Experience (Gain)/Loss	(2)	(2)	0	(2)	0	15 Years
June 30, 2017 Assumption and Experience (Gain)/Loss	(16)	(15)	(1)	(15)	(1)	16 Years
June 30, 2018 Experience (Gain)/Loss	(11)	(11)	(1)	(11)	(1)	17 Years
June 30, 2019 Assumption and Method Changes	12	12	1	12	1	18 Years
June 30, 2019 Experience (Gain)/Loss	(32)	(32)	(2)	(32)	(2)	18 Years
June 30, 2020 Experience (Gain)/Loss	(12)	(12)	(1)	(12)	(1)	19 Years
June 30, 2021 Assumption and Method Changes	9	n/a	n/a	9	1	20 Years
June 30, 2021 Experience (Gain)/Loss	(39)	n/a	n/a	(39)	(3)	20 Years
		<b>\$450</b>	<b>\$28</b>	<b>\$421</b>	<b>\$28</b>	

<b>Projected UAAL</b>	
<b>Date</b>	<b>(\$ in Thousands)</b>
July 1, 2021	\$421
July 1, 2022	419
July 1, 2023	416
July 1, 2024	413
July 1, 2025	410
July 1, 2043	0



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

Description	Original Amount	Outstanding	July 1, 2020	Outstanding	July 1, 2021	Years
		Balance as of June 30, 2020	Amortization Payment	Balance as of June 30, 2021	Amortization Payment	Remaining as of June 30, 2021
June 30, 2013 Legacy UAAL	(\$130,534)	(\$136,597)	(\$8,559)	(\$136,681)	(\$8,815)	22 Years
June 30, 2014 Experience (Gain)/Loss	(4,810)	(5,581)	(498)	(5,426)	(513)	13 Years
June 30, 2015 Experience (Gain)/Loss	(24,839)	(23,487)	(1,987)	(22,951)	(2,047)	14 Years
June 30, 2016 Experience (Gain)/Loss	(10,975)	(10,562)	(852)	(10,365)	(877)	15 Years
June 30, 2017 Assumption and Experience (Gain)/Loss	(34,768)	(33,936)	(2,617)	(33,433)	(2,696)	16 Years
June 30, 2018 Experience (Gain)/Loss	15,946	15,731	1,164	15,550	1,199	17 Years
June 30, 2019 Assumption and Method Changes	3,799	3,777	269	3,745	277	18 Years
June 30, 2019 Experience (Gain)/Loss	(45,176)	(44,910)	(3,199)	(44,526)	(3,295)	18 Years
June 30, 2020 Experience (Gain)/Loss	(20,802)	(20,802)	(1,430)	(20,680)	(1,473)	19 Years
June 30, 2021 Assumption and Method Changes	(4,543)	n/a	n/a	(4,543)	(312)	20 Years
June 30, 2021 Experience (Gain)/Loss	(37,966)	n/a	n/a	(37,966)	(2,610)	20 Years
		<b>(\$256,367)</b>	<b>(\$17,709)</b>	<b>(\$297,276)</b>	<b>(\$21,162)</b>	

Projected UAAL	
Date	(\$ in Thousands)
July 1, 2021	(\$297,276)
July 1, 2022	(294,750)
July 1, 2023	(291,376)
July 1, 2024	(287,077)
July 1, 2025	(281,770)
July 1, 2043	0



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
TEACHERS  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

<b>Description</b>	<b>Original Amount</b>	<b>Outstanding Balance as of June 30, 2020</b>	<b>July 1, 2020 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2021</b>	<b>July 1, 2021 Amortization Payment</b>	<b>Years Remaining as of June 30, 2021</b>
June 30, 2013 Legacy UAAL	\$0	\$0	\$0	\$0	\$0	22 Years
June 30, 2014 Experience (Gain)/Loss	11	11	1	11	1	13 Years
June 30, 2015 Experience (Gain)/Loss	118	111	9	109	10	14 Years
June 30, 2016 Experience (Gain)/Loss	254	243	20	238	20	15 Years
June 30, 2017 Assumption and Experience (Gain)/Loss	108	105	8	104	8	16 Years
June 30, 2018 Experience (Gain)/Loss	226	224	17	221	17	17 Years
June 30, 2019 Assumption and Method Changes	66	65	5	64	5	18 Years
June 30, 2019 Experience (Gain)/Loss	191	190	14	188	14	18 Years
June 30, 2020 Experience (Gain)/Loss	(589)	(589)	(40)	(586)	(42)	19 Years
June 30, 2021 Assumption and Method Changes	303	n/a	n/a	303	21	20 Years
June 30, 2021 Experience (Gain)/Loss	(578)	n/a	n/a	(578)	(40)	20 Years
		<b>\$360</b>	<b>\$34</b>	<b>\$74</b>	<b>\$14</b>	

<b>Projected UAAL</b>	
<b>Date</b>	<b>(\$ in Thousands)</b>
July 1, 2021	\$74
July 1, 2022	64
July 1, 2023	53
July 1, 2024	41
July 1, 2025	26
July 1, 2041	0



**Schedule C – Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
POLITICAL SUBDIVISIONS  
UAAL AMORTIZATION SCHEDULE  
(\$ in Thousands)**

Description	Original	Outstanding	July 1, 2020	Outstanding	July 1, 2021	Years
	Amount	Balance as of June 30, 2020	Amortization Payment	Balance as of June 30, 2021	Amortization Payment	Remaining as of June 30, 2021
June 30, 2013 Legacy UAAL	\$0	\$0	\$0	\$0	\$0	22 Years
June 30, 2014 Experience (Gain)/Loss	48	44	4	43	4	13 Years
June 30, 2015 Experience (Gain)/Loss	58	54	5	52	5	14 Years
June 30, 2016 Experience (Gain)/Loss	221	212	17	208	18	15 Years
June 30, 2017 Assumption and Experience (Gain)/Loss	88	86	7	84	7	16 Years
June 30, 2018 Experience (Gain)/Loss	1,471	1,452	107	1,436	111	17 Years
June 30, 2019 Assumption and Method Changes	54	53	4	52	4	18 Years
June 30, 2019 Experience (Gain)/Loss	(1,076)	(1,069)	(76)	(1,060)	(78)	18 Years
June 30, 2020 Experience (Gain)/Loss	(505)	(505)	(35)	(502)	(36)	19 Years
June 30, 2021 Assumption and Method Changes	(515)	n/a	n/a	(515)	(35)	20 Years
June 30, 2021 Experience (Gain)/Loss	(397)	n/a	n/a	(397)	(27)	20 Years
		<b>\$327</b>	<b>\$33</b>	<b>(\$599)</b>	<b>(\$27)</b>	

Projected UAAL	
Date	(\$ in Thousands)
July 1, 2021	(\$599)
July 1, 2022	(609)
July 1, 2023	(619)
July 1, 2024	(628)
July 1, 2025	(637)
July 1, 2041	0



## ***Schedule D – Outline of Actuarial Assumptions and Methods***

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### **STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS**

The valuation of the OPEB plans for VRS uses many of the same assumptions as those used for pensions. The assumptions and methods used in the valuations 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 at its April 20, 2021 meeting as well as the investment rate of return of 6.75% adopted by the Board of Trustees at its October 10, 2019 meeting. For assumptions specific to OPEB benefits, the Actuarial Standards Board has issued Actuarial Standard of Practice (ASOP) No. 6, “*Measuring Retiree Group Benefit Obligations*,” which provides guidance to actuaries in selecting economic, demographic, and coverage assumptions for measuring obligations of postemployment plans other than pensions. Additionally, ASOP No. 5, “*Incurred Health and Disability Claims*” and ASOP No. 18, “*Long-Term Care Insurance*” provide guidance. In our opinion, the OPEB specific assumptions recommended in this report have been developed in accordance with ASOPs No. 5, 6 and 18.

#### **Assumptions and Methods Applicable to all OPEB Plans**

<b>Investment Return Rate:</b>	6.75% per annum, compounded annually, net of investment expenses.
<b>Inflation Assumption:</b>	2.50% per year.
<b>Actuarial Cost Method:</b>	Entry age normal cost method, allocated as a level percent of payroll, from first funding age to last age before terminal retirement age. Actuarial gains and losses, as they occur, are reflected in the unfunded actuarial accrued liability. See Schedule E for a detailed explanation.
<b>Funding Period:</b>	The legacy unfunded actuarial accrued liability, the unfunded actuarial accrued liability as of June 30, 2013, is amortized over a closed 30-year period beginning June 30, 2013. The amortization period of the legacy unfunded will decrease by one in each subsequent valuation until reaching 0 years. The actuarial gains and losses and other changes in the unfunded due to benefit and actuarial assumption and method changes for each valuation subsequent to the June 30, 2013 valuation will be amortized over layered 20-year closed periods. The amortization of the unfunded accrued liability assumes that payroll will increase by 3% annually



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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and the amortization period will decrease by one year until reaching 0 years. See the Unfunded Actuarial Accrued Liability Amortization Schedule for more detail.

The amortization payment includes an adjustment of 1.018041 to account for the passage of time from the valuation date to the date the contribution is made.

**Payroll Growth Rate:** 3.00% per annum.

**Marriage Assumption:** 100% of active employees are assumed to be married, with males two years older than females.

**Administrative Expenses:** The employer contribution rates include a rate for anticipated non-investment expenses based on actual prior year experience.





## ***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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### **Assumptions and Methods Applicable to the Group Life Insurance Program**

**Asset Valuation Method:** For the purposes of GASB 74/75, the value of assets is equal to the market value of assets.

To calculate the actuarially determined contributions, the method of valuing assets is intended to recognize a “smoothed” market value of assets. Under this method, the difference between actual return on market value from investment experience and the expected return on market value is recognized over a five-year period. The resulting actuarial value of asset value cannot be less than 80% or more than 120% of the market value of assets.

**Minimum Benefit:** Beginning with the fiscal year ending June 30, 2016, in no event will the death benefit be less than \$8,000 for members who retire with at least 30 years of creditable service. Between June 30, 2016 and the current valuation date, this minimum is indexed at the same rate as the post-retirement supplement for retirees hired on or after July 1, 2010. Beginning on the valuation date, this minimum is assumed to increase annually, effective July 1, by 2.25% (the same assumed annual increase percentage for any annual post-retirement supplement for retirees, as calculated for employees hired on or after July 1, 2010).

**“Life Insurance Only” Retirees:** Results include an estimate retiree liability for those groups not providing retiree census data. For the Life Only group, an estimation factor of actual benefit payments for the group to the rest of the actual benefit payments produces a ratio of 1.618% to estimate retiree liability. For the ORP group, a liability equaling 10% of the active employee liability times the average retiree to active liability ratio is assumed.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**Assumptions and Methods Applicable to the Health Insurance Credit Program  
State Employees and Teachers**

**Asset Valuation Method:** For the purposes of GASB 74/75, the value of assets is equal to the market value of assets.

To calculate the actuarially determined contributions, the method of valuing assets is intended to recognize a “smoothed” market value of assets. Under this method, the difference between actual return on market value from investment experience and the expected return on market value is recognized over a five-year period. The resulting actuarial value of asset value cannot be less than 80% or more than 120% of the market value of assets.

**Participation Rates:** 95% of eligible future service retirees from active status are assumed to utilize the benefit plan.

Eligible future service retirees from deferred vested status are assumed to utilize the benefit plan at 95%.

Eligible future disabled benefit recipients from active status are assumed to utilize the benefit plan as follows:

System	Participation
State/JRS	95%
Teachers	90%
SPORS/VaLORS	80%



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Health Insurance Credit Program  
State Employees and Teachers (continued)**

**Percentage Not Utilizing the  
Maximum Benefit:**

The percentage of eligible future benefit recipients assumed to utilize the benefit plan, but not receive the maximum benefit for which they are eligible is as follows:

System	Percentage
State/JRS	5%
Teachers	15%
SPORS/VaLORS	10%

**Percentage of Maximum Benefit  
Received:**

Eligible future benefit recipients assumed to utilize the benefit plan, but not receive the maximum benefit for which they are eligible are assumed to initially receive 70% of the maximum benefit for which they are eligible.

**Annual Increase in Benefit  
for Those Not Receiving the  
Maximum Benefit:**

Benefit recipients assumed to utilize the benefit plan, but not receiving the maximum benefit for which they are eligible are assumed to have their benefit increase at the following rates:

Duration Since Retirement	Annual Increase in HIC benefit
1 Year	4.50%
2 – 3 Years	4.25%
4 or More Years	3.00%



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Health Insurance Credit Program  
State Employees and Teachers (continued)**

**Percentage of Future Eligible  
Deferred Vested Members  
Electing to Withdraw from VRS:**

The percentage of future eligible deferred vested members assumed to withdraw from VRS is as follows:

System	Percentage	
	Under Age 50	Age 50 and Over
State/JRS	75%	35%
Teachers	75%	35%
SPORS/VaLORS	90%	55%

**Deferred Vested Deferral Period:** Eligible deferred vested members are assumed to begin receiving benefits at the following ages:

System	Age of Initial Benefit Receipt
State/JRS/Teachers	
Plan 1 Members	60
Plan 2 and Hybrid Plan Members	
Born prior to 1938	60
Born after 1937 and before 1960	61
Born after 1959	62
SPORS/VaLORS	
Members with less than 25 years of service	55
Members with 25 or more years of service	50

**ORP and UVA Deferred Vested Participants:**

Results include an estimate of deferred vested liability for those groups providing limited deferred vested census data. The estimate is derived from a ratio of retired to vested liabilities for the other HIC Plans.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**Assumptions and Methods Applicable to the Health Insurance Credit Program  
Political Subdivisions and Special Coverage Groups**

**Asset Valuation Method:** Market value of assets.

**Participation Rates:** 85% of eligible future service retirees from active status are assumed to utilize the benefit plan. 50% of eligible future disability retirees will utilize the benefit.

Eligible future service retirees from deferred vested status are assumed to utilize the benefit plan at 85%.

**Percentage Not Utilizing the Maximum Benefit:** 5% of eligible future benefit recipients are assumed to utilize the benefit plan, but not receive the maximum benefit for which they are eligible.

**Percentage of Maximum Benefit Received:** Eligible future benefit recipients assumed to utilize the benefit plan, but not receive the maximum benefit for which they are eligible are assumed to initially receive 70% of the maximum benefit for which they are eligible.

**Annual Increase in Benefit for Those Not Receiving the Maximum Benefit:** Benefit recipients assumed to utilize the benefit plan, but not receiving the maximum benefit for which they are eligible are assumed to have their benefit increase at the following rates:

<b>Duration Since Retirement</b>	<b>Annual Increase in HIC benefit</b>
1 Year	4.50%
2 – 3 Years	4.25%
4 or More Years	3.00%



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Health Insurance Credit Program  
Political Subdivisions and Special Coverage Groups (continued)**

**Percentage of Future Eligible Deferred Vested Members Electing to Withdraw from VRS:** 85% of future eligible deferred vested members under the age of 50 are assumed to withdraw from VRS. 50% of future eligible deferred vested members that are age 50 and above are assumed to withdraw from VRS.

**Deferred Vested Deferral Period:** Eligible deferred vested members with LEOs/Fire Pension Benefit Coverage are assumed to receive benefits at age 55 (if the member has less than 25 years of service at retirement) and at age 50 (if the member has 25 or more years of service at retirement). Eligible deferred vested members with General Employee Pension Benefit Coverage are assumed to receive benefits as follows:

Political Subdivisions and Special Coverage Groups	Age of Initial Benefit Receipt
Plan 1 Members	60
Plan 2 and Hybrid Plan Members	
Born prior to 1938	60
Born after 1937 and before 1960	61
Born after 1959	62

**Employer Groups:** The political subdivisions have been divided into two groups. The Top 10 group consists of: City of Virginia Beach, Henrico County, Prince William County, Chesterfield County, City of Chesapeake, City of Alexandria, City of Hampton, Loudoun County, City of Lynchburg, and the City of Portsmouth. The Non-Top 10 is all other political subdivisions not included in the Top 10 group.

**Plan Surcharge:** The additional contribution rate applied to plans with low funding levels to bring the plan to a more sustainable funding position as determined by the Plan Actuary.

**Additional Funding Charge:** An additional funding charge will be included in the contribution rate, if needed, to allow the use of the 6.75% investment return assumption to be used as the single equivalent interest rate assumption for GASB 74/75 purposes.



## ***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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### **Assumptions and Methods Applicable to the Virginia Sickness and Disability Program Long-Term Disability Benefits and Long-Term Care Benefits**

**Asset Valuation Method:** For the purposes of GASB 74/75, the value of assets is equal to the market value of assets.

The method of valuing assets is intended to recognize a “smoothed” market value of assets. Under this method, the difference between actual return on market value from investment experience and the expected return on market value is recognized over a five-year period. The resulting actuarial value of asset value cannot be less than 80% or more than 120% of the market value of assets.

**Health Insurance Credit and Group Life Insurance Benefits:** Health Insurance Credit and Group Life Insurance benefits provided by VSDP are valued under the respective plans.

**Disability:** A Plan 1 Member hired prior to January 1, 1999 and who has elected VSDP coverage or any member hired on or after January 1, 1999. Applicable members hired prior to July 1, 2009 are eligible from the first day of employment for work related and non-work related VSDP disability benefits. Applicable members hired on or after July 1, 2009 are eligible from the first day of employment for work-related VSDP disability benefits, but must have a minimum of one year of service to be eligible for non-work related VSDP disability benefits.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Disability Benefits**

**Cost-of-Living Increase:**

Plan 1 Members: 2.50% per year, compounded annually.

Plan 2 and Hybrid Members: 2.25% per year, compounded annually.

**Liability Assumed for Disabled Members in Waiting Period:**

The liability associated for those disabled and not yet eligible to receive benefits was based upon the development method in which plan experience was applied to those claims reported in the second half of the most recent fiscal year.

**Income Replacement for Future Disabled Members:**

62% of a member’s pre-disability income.

**Percentage of Members with 1% Employer Contribution:**

65% of members are assumed to meet the Social Security definition of Disability, and are thus eligible for an additional 1% of employer contribution.

**Offsets for Active Members:**

The following benefit adjustments are assumed for the expected future monthly benefits to be paid to future disabled members. The benefit adjustments are consistent with recent experience.

Year of Long-Term Disability	Benefit Adjustment Factor
1	71%
2	57%
3	52%
4	49%
5	42%
6-9	36%
10-13	43%
14	45%
15 and Longer	51%





**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Disability Benefits (continued)**

**Offsets for Disabled Members:** It is assumed that the offset amounts reported by the administrator will continue to apply to each member’s benefit until the benefit expires. For members with less than eight years of disability and no current benefit offsets, benefit amounts are adjusted to reflect future offsets as follows:

Year of Long-Term Disability	Percentage Receiving Offsets in the Next Year if Currently Not in Receipt	Average Percentage of Full Benefit Paid if in Receipt of Offsets
1	36%	27%
2	27%	26%
3	23%	26%
4	16%	26%
5	14%	26%
6	9%	26%
7	4%	26%
8 and Longer	0%	30%

**Rates of Termination of Benefits Due to Death or Recovery:** 2012 Group Long Term Disability Valuation Table (2012 GLTD) as proposed by the Society of Actuaries’ Group Disability Experience Committee for use by the National Association of Insurance Commissioners. Used as a basis those rates applicable to plans with a six-month elimination period, “Own Occupation” definition of disability in the first twenty-four months and “Any Occupation” definition of disability for the twenty-fifth month onward, initial maximum guaranteed benefit of \$1,900, “No Diagnosis” cause of disability, 15% margin for recovery, 28% margin for deaths, and adjusted for prior five years of VRS experience with the following adjustment factors:

Month of Disability	Male	Female
4 - 24	0.852	0.803
25 - 60	0.811	0.821
61 - 120	1.164	1.184
121 and over	1.073	1.126



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits**

<b>Disabled Life Reserve:</b>	The liability associated for those participants assumed to be in a current benefit period was based upon the development method in which prior experience was applied to the current claim duration and prior payments made for each individual.
<b>Incurred But Not Reported Reserve:</b>	The liability associated for those participants with claims that have been incurred but not reported (IBNR), as of the valuation date, to the administrator was based upon the development method in which prior experience for claim incidence and expected benefits payments was applied to the covered population.



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity:**

Rates were compared against rates developed using the Society of Actuaries (SOA) Long Term Care basic experience rate tables. We also compared rates against a Milliman LTC study performed on behalf of the SOA for reasonableness. Because actuarial experience (gains)/losses have fluctuated over the past several years, we recommend no modifications.

Unadjusted Claim Incidence Rates				
Attained Age	Nursing Facility		Home Health	
	Male	Female	Male	Female
25	0.00001	0.00001	0.00008	0.00008
30	0.00003	0.00002	0.00010	0.00010
35	0.00008	0.00005	0.00012	0.00013
40	0.00013	0.00009	0.00018	0.00015
45	0.00021	0.00014	0.00028	0.00017
50	0.00031	0.00020	0.00039	0.00029
55	0.00047	0.00029	0.00053	0.00047
60	0.00060	0.00065	0.00085	0.00092
65	0.00100	0.00107	0.00150	0.00162
70	0.00210	0.00191	0.00249	0.00295
75	0.00480	0.00507	0.00482	0.00541
80	0.01023	0.01327	0.00895	0.00917
85	0.02155	0.03171	0.01541	0.01511
90	0.04111	0.06180	0.02249	0.02042
95	0.05844	0.08370	0.02522	0.02190
100	0.07276	0.09756	0.02598	0.02198
105	0.09059	0.11372	0.02677	0.02206
110+	0.11279	0.13255	0.02758	0.02213



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity (continued):**

For actively employed members, the unadjusted claim incidence rates are adjusted by the following selection factors based upon length of VSDP membership and age of entry into VSDP.

Claim Incidence Selection Factors			
Actively Employed Members			
Years of VSDP Membership	VSDP Entry Age		
	<50	50 - 64	65+
1	0.133	0.138	0.164
2	0.217	0.222	0.256
3	0.284	0.289	0.342
4	0.334	0.341	0.438
5	0.367	0.375	0.520
6	0.439	0.447	0.547
7	0.473	0.482	0.573
8	0.500	0.511	0.593
9	0.527	0.538	0.612
10	0.561	0.573	0.634
11	0.599	0.612	0.673
12	0.643	0.658	0.719
13	0.702	0.718	0.755
14	0.769	0.787	0.797
15	0.836	0.836	0.840
16	0.851	0.851	0.855
17	0.869	0.869	0.872
18	0.890	0.890	0.893
19	0.915	0.915	0.918
20+	0.945	0.945	0.947



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity (continued):**

For ported members, the unadjusted claim incidence rates are adjusted based upon the likelihood of porting and the number of years since porting.

Claim Incidence Selection Factors		
Ported Members		
Porting Rate	Initial Year Of Porting	Ultimate Rate*
0%	2.35	1.19
5%	2.29	1.18
10%	2.22	1.18
15%	2.16	1.17
20%	2.09	1.16
25%	2.03	1.16
30%	1.96	1.15
35%	1.90	1.14
40%	1.83	1.13
45%	1.77	1.13
50%	1.70	1.12
55%	1.64	1.11
60%	1.57	1.11
65%	1.51	1.10
70%	1.44	1.09
75%	1.38	1.09
80%	1.31	1.08
85%	1.25	1.07
90%	1.18	1.06
95%	1.12	1.06
100%	1.05	1.05

\* The selection factors are assumed to decrease linearly over a 10-year period.



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity (continued):**

The duration of a claim is based upon the attained age at incidence, gender, and type of claim.

Length of Stay (Months)				
Attained Age	Nursing Facility		Home Health	
	Male	Female	Male	Female
25	11.15	13.96	19.14	12.54
30	11.60	14.42	18.81	12.47
35	12.04	14.98	18.67	12.45
40	12.29	14.87	16.77	13.48
45	12.50	14.77	14.99	14.56
50	12.90	14.16	15.36	13.78
55	13.30	13.52	15.77	13.02
60	12.99	14.12	15.15	12.40
65	13.36	14.30	12.84	12.80
70	14.00	14.32	11.80	13.53
75	13.99	15.09	11.50	13.50
80	13.76	15.61	10.90	13.18
85	13.62	15.90	10.05	12.86
90	13.09	16.19	8.78	12.70
95	12.30	16.51	8.23	12.66
100	11.32	16.10	8.70	13.34
105	9.84	14.77	9.56	14.60
110+	8.31	13.32	9.33	14.89



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits (continued)**

- Daily Benefit Amount:** \$96 per day indemnity benefit paid for service in a nursing home. The daily benefit for home health care coverage is 50% of the nursing home benefit.
- Daily Benefit Amount Increases:** The valuation does not include a provision for increases (i.e., 5% compound increase every five years). If the benefit policy is to provide increases at regular intervals, the resulting liability will be materially greater than the results presented (i.e., inflation increases are not assumed to be pre-funded).
- Benefit Maximums:** A lifetime maximum benefit of \$70,080 (reflects a two-year maximum coverage period based upon a \$96 per day indemnity benefit).



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits (continued)**

**Porting Rates:**

Porting rate assumptions are based upon experience over the first five years of the program, with substantial increases over the life of the program. Because actuarial experience (gains)/losses have fluctuated over the past several years, we made no modifications. Porting rates by age of entry into VSDP and length of VSDP membership are provided in the following table.

VSDP Entry Age	Years of VSDP Membership										
	0	5	10	15	20	25	30	35	40	45	50+
25	0.1000	0.1010	0.1144	0.1313	0.1739	0.2555	0.3693	0.5263	0.6812	0.8874	1.0000
30	0.1000	0.1019	0.1234	0.1534	0.2185	0.3194	0.4537	0.5822	0.7574	0.9609	1.0000
35	0.1000	0.1021	0.1303	0.1778	0.2683	0.3935	0.5001	0.6454	0.8406	1.0000	1.0000
40	0.1000	0.1063	0.1608	0.2383	0.3423	0.4320	0.5526	0.7169	0.9230	1.0000	1.0000
45	0.1001	0.1177	0.2001	0.2931	0.3754	0.4755	0.6119	0.7978	0.9983	1.0000	1.0000
50	0.1027	0.1304	0.2244	0.3262	0.4116	0.5247	0.6790	0.8833	1.0000	1.0000	1.0000
55	0.1072	0.1410	0.2422	0.3585	0.4524	0.5804	0.7549	0.9624	1.0000	1.0000	1.0000
60	0.1162	0.1596	0.2667	0.3924	0.4986	0.6434	0.8407	1.0000	1.0000	1.0000	1.0000
65	0.1329	0.1887	0.2999	0.4307	0.5508	0.7146	0.9257	1.0000	1.0000	1.0000	1.0000
70	0.1485	0.2129	0.3308	0.4741	0.6099	0.7952	0.9985	1.0000	1.0000	1.0000	1.0000
75	0.1700	0.2444	0.3693	0.5231	0.6768	0.8863	1.0000	1.0000	1.0000	1.0000	1.0000
80	0.1875	0.2682	0.4043	0.5786	0.7524	0.9645	1.0000	1.0000	1.0000	1.0000	1.0000
85	0.1941	0.2770	0.4310	0.6413	0.8379	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
90	0.2012	0.2863	0.4601	0.7123	0.9347	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
95	0.2088	0.2960	0.4917	0.7925	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	0.2171	0.3063	0.5261	0.8833	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
105	0.2259	0.3171	0.5635	0.9860	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
110	0.2354	0.3284	0.6042	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
115	0.2457	0.3404	0.6485	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
120	0.2567	0.3529	0.6966	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000





**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Sickness and Disability Program  
Long-Term Care Benefits (continued)**

**Porting Premiums:**

While actively employed or receiving LTD benefits, a member receives coverage in the amount currently in place for the entire actively employed group. Upon termination of employment, a member has the option to port the amount of current coverage for the group by paying a premium. We reviewed that the premiums below adequately cover the expected costs as a part of the experience study and, therefore, no adjustments are recommended.

Monthly Porting Premium Rates Per \$1 of Daily Benefit Amount							
VSDP Entry Age	Rate	VSDP Entry Age	Rate	VSDP Entry Age	Rate	VSDP Entry Age	Rate
20	0.018	38	0.070	56	0.233	74	1.212
21	0.019	39	0.075	57	0.255	75	1.331
22	0.020	40	0.078	58	0.278	76	1.466
23	0.022	41	0.084	59	0.305	77	1.619
24	0.023	42	0.089	60	0.335	78	1.786
25	0.025	43	0.095	61	0.368	79	1.968
26	0.028	44	0.100	62	0.406	80	2.153
27	0.030	45	0.106	63	0.448	81	2.329
28	0.033	46	0.112	64	0.497	82	2.503
29	0.035	47	0.121	65	0.539	83	2.676
30	0.038	48	0.128	66	0.596	84	2.835
31	0.041	49	0.136	67	0.662	85	2.971
32	0.046	50	0.144	68	0.717	86	3.134
33	0.050	51	0.155	69	0.777	87	3.277
34	0.053	52	0.166	70	0.845	88	3.405
35	0.057	53	0.180	71	0.922	89	3.522
36	0.061	54	0.196	72	1.007	90	3.610
37	0.065	55	0.213	73	1.105		



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Disability Benefits and Long-Term Care Benefits**

<b>Asset Valuation Method:</b>	<p>For the purposes of GASB 74/75, the value of assets is equal to the market value of assets.</p> <p>The method of valuing assets is intended to recognize a “smoothed” market value of assets. Under this method, the difference between actual return on market value from investment experience and the expected return on market value is recognized over a five-year period. The resulting actuarial value of asset value cannot be less than 80% or more than 120% of the market value of assets.</p>
<b>Health Insurance Credit and Group Life Insurance Benefits:</b>	<p>Health Insurance Credit (if applicable) and Group Life Insurance benefits provided under VLDP are valued under the respective plans.</p>
<b>Disability:</b>	<p>Applicable members covered under the Hybrid Plan are eligible from the first day of employment for work-related VLDP disability benefits, but must have a minimum of one year of service to be eligible for non-work related VLDP disability benefits.</p>



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Disability Benefits**

- Cost-of-Living Increase:** 0.00% per year, compounded annually.
- Liability Assumed for Disabled Members in Waiting Period:** The liability associated for those disabled and not yet eligible to receive benefits was based upon the expected number of long-term disabilities incurred during the period of January 1, 2016 and June 30, 2016.
- Income Replacement for Future Disabled Members:** 62% of a member’s pre-disability income.
- Percentage of Members with 1% Employer Contribution:** 65% of members are assumed to meet the Social Security definition of Disability, and are thus eligible for an additional 1% of employer contribution.
- Offsets for Active Members:** The following benefit adjustments are assumed for the expected future monthly benefits to be paid to future disabled members. The benefit adjustments are consistent with recent experience.

<b>Year of Long-Term Disability</b>	<b>Benefit Adjustment Factor</b>
1	71%
2	57%
3	52%
4	49%
5	42%
6-9	36%
10-13	43%
14	45%
15 and Longer	51%



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Disability Benefits (continued)**

**Offsets for Disabled Members:** It is assumed that the offset amounts reported by the administrator will continue to apply to each member’s benefit until the benefit expires. For members with less than six years of disability and no current benefit offsets, benefit amounts are adjusted to reflect future offsets as follows:

Year of Long-Term Disability	Percentage Receiving Offsets in the Next Year if Currently Not in Receipt	Average Percentage of Full Benefit Paid if in Receipt of Offsets
1	36%	27%
2	27%	26%
3	23%	26%
4	16%	26%
5	14%	26%
6	9%	26%
7	4%	26%
8 and Longer	0%	30%

**Rates of Termination of Benefits Due to Death or Recovery:** 2012 Group Long Term Disability Valuation Table (2012 GLTD) as proposed by the Society of Actuaries’ Group Disability Experience Committee for use by the National Association of Insurance Commissioners. Used as a basis those rates applicable to plans with a six-month elimination period, “Own Occupation” definition of disability, initial maximum guaranteed benefit of \$1,900, “No Diagnosis” cause of disability, 15% margin for recovery, 28% margin for deaths, and adjusted for prior five years of VRS experience with the following adjustment factors:

Month of Disability	Male	Female
4 - 24	0.852	0.803
25 - 60	0.811	0.821
61 - 120	1.164	1.184
121 and over	1.073	1.126



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits**

**Disabled Life Reserve:**

The liability associated for those participants assumed to be in a current benefit period was based upon the development method in which prior experience was applied to the current claim duration and prior payments made for each individual.

**Incurred But Not Reported Reserve:**

The liability associated for those participants with claims that have been incurred but not reported (IBNR) as of the valuation date to the administrator was based upon the development method in which prior experience for claim incidence and expected benefits payments was applied to the covered population.



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity:**

Rates were compared against rates developed using the Society of Actuaries (SOA) Long Term Care basic experience rate tables. We also compared rates against a Milliman LTC study performed on behalf of the SOA for reasonableness. Because actuarial experience (gains)/losses have fluctuated over the past several years, we recommend no modifications.

Unadjusted Claim Incidence Rates				
Attained Age	Nursing Facility		Home Health	
	Male	Female	Male	Female
25	0.00001	0.00001	0.00008	0.00008
30	0.00003	0.00002	0.00010	0.00010
35	0.00008	0.00005	0.00012	0.00013
40	0.00013	0.00009	0.00018	0.00015
45	0.00021	0.00014	0.00028	0.00017
50	0.00031	0.00020	0.00039	0.00029
55	0.00047	0.00029	0.00053	0.00047
60	0.00060	0.00065	0.00085	0.00092
65	0.00100	0.00107	0.00150	0.00162
70	0.00210	0.00191	0.00249	0.00295
75	0.00480	0.00507	0.00482	0.00541
80	0.01023	0.01327	0.00895	0.00917
85	0.02155	0.03171	0.01541	0.01511
90	0.04111	0.06180	0.02249	0.02042
95	0.05844	0.08370	0.02522	0.02190
100	0.07276	0.09756	0.02598	0.02198
105	0.09059	0.11372	0.02677	0.02206
110+	0.11279	0.13255	0.02758	0.02213



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity (continued):**

For actively employed members, the unadjusted claim incidence rates are adjusted by the following selection factors based upon length of VLDP membership and age of entry into VLDP.

Claim Incidence Selection Factors			
Actively Employed Members			
Years of VLDP Membership	VLDP Entry Age		
	<50	50 - 64	65+
1	0.133	0.138	0.164
2	0.217	0.222	0.256
3	0.284	0.289	0.342
4	0.334	0.341	0.438
5	0.367	0.375	0.520
6	0.439	0.447	0.547
7	0.473	0.482	0.573
8	0.500	0.511	0.593
9	0.527	0.538	0.612
10	0.561	0.573	0.634
11	0.599	0.612	0.673
12	0.643	0.658	0.719
13	0.702	0.718	0.755
14	0.769	0.787	0.797
15	0.836	0.836	0.840
16	0.851	0.851	0.855
17	0.869	0.869	0.872
18	0.890	0.890	0.893
19	0.915	0.915	0.918
20+	0.945	0.945	0.947



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity (continued):**

For ported members, the unadjusted claim incidence rates are adjusted based upon the likelihood of porting and the number of years since porting.

Claim Incidence Selection Factors		
Ported Members		
Porting Rate	Initial Year Of Porting	Ultimate Rate*
0%	2.35	1.19
5%	2.29	1.18
10%	2.22	1.18
15%	2.16	1.17
20%	2.09	1.16
25%	2.03	1.16
30%	1.96	1.15
35%	1.90	1.14
40%	1.83	1.13
45%	1.77	1.13
50%	1.70	1.12
55%	1.64	1.11
60%	1.57	1.11
65%	1.51	1.10
70%	1.44	1.09
75%	1.38	1.09
80%	1.31	1.08
85%	1.25	1.07
90%	1.18	1.06
95%	1.12	1.06
100%	1.05	1.05

\* The selection factors are assumed to decrease linearly over a 10-year period.





***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits (continued)**

**Morbidity (continued):**

The duration of a claim is based upon the attained age at incidence, gender, and type of claim.

Length of Stay (Months)				
Attained Age	Nursing Facility		Home Health	
	Male	Female	Male	Female
25	11.15	13.96	19.14	12.54
30	11.60	14.42	18.81	12.47
35	12.04	14.98	18.67	12.45
40	12.29	14.87	16.77	13.48
45	12.50	14.77	14.99	14.56
50	12.90	14.16	15.36	13.78
55	13.30	13.52	15.77	13.02
60	12.99	14.12	15.15	12.40
65	13.36	14.30	12.84	12.80
70	14.00	14.32	11.80	13.53
75	13.99	15.09	11.50	13.50
80	13.76	15.61	10.90	13.18
85	13.62	15.90	10.05	12.86
90	13.09	16.19	8.78	12.70
95	12.30	16.51	8.23	12.66
100	11.32	16.10	8.70	13.34
105	9.84	14.77	9.56	14.60
110+	8.31	13.32	9.33	14.89



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits (continued)**

- Daily Benefit Amount:** \$96 per day indemnity benefit paid for service in a nursing home. The daily benefit for home health care coverage is 50% of the nursing home benefit.
- Daily Benefit Amount Increases:** The valuation does not include a provision for increases (i.e., 5% compound increase every five years). If the benefit policy is to provide increases at regular intervals, the resulting liability will be materially greater than the results presented (i.e., inflation increases are not assumed to be pre-funded).
- Benefit Maximums:** A lifetime maximum benefit of \$70,080 (reflects a two-year maximum coverage period based upon a \$96 per day indemnity benefit).



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits (continued)**

**Porting Rates:**

Porting rate assumptions are based upon experience over the first five years of the program, with substantial increases over the life of the program. Because actuarial experience (gains)/losses have fluctuated over the past several years, we made no modifications. Porting rates by age of entry into VLDP and length of VLDP membership are provided in the following table.

VLDP Entry Age	Years of VLDP Membership										
	0	5	10	15	20	25	30	35	40	45	50+
25	0.1000	0.1010	0.1144	0.1313	0.1739	0.2555	0.3693	0.5263	0.6812	0.8874	1.0000
30	0.1000	0.1019	0.1234	0.1534	0.2185	0.3194	0.4537	0.5822	0.7574	0.9609	1.0000
35	0.1000	0.1021	0.1303	0.1778	0.2683	0.3935	0.5001	0.6454	0.8406	1.0000	1.0000
40	0.1000	0.1063	0.1608	0.2383	0.3423	0.4320	0.5526	0.7169	0.9230	1.0000	1.0000
45	0.1001	0.1177	0.2001	0.2931	0.3754	0.4755	0.6119	0.7978	0.9983	1.0000	1.0000
50	0.1027	0.1304	0.2244	0.3262	0.4116	0.5247	0.6790	0.8833	1.0000	1.0000	1.0000
55	0.1072	0.1410	0.2422	0.3585	0.4524	0.5804	0.7549	0.9624	1.0000	1.0000	1.0000
60	0.1162	0.1596	0.2667	0.3924	0.4986	0.6434	0.8407	1.0000	1.0000	1.0000	1.0000
65	0.1329	0.1887	0.2999	0.4307	0.5508	0.7146	0.9257	1.0000	1.0000	1.0000	1.0000
70	0.1485	0.2129	0.3308	0.4741	0.6099	0.7952	0.9985	1.0000	1.0000	1.0000	1.0000
75	0.1700	0.2444	0.3693	0.5231	0.6768	0.8863	1.0000	1.0000	1.0000	1.0000	1.0000
80	0.1875	0.2682	0.4043	0.5786	0.7524	0.9645	1.0000	1.0000	1.0000	1.0000	1.0000
85	0.1941	0.2770	0.4310	0.6413	0.8379	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
90	0.2012	0.2863	0.4601	0.7123	0.9347	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
95	0.2088	0.2960	0.4917	0.7925	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	0.2171	0.3063	0.5261	0.8833	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
105	0.2259	0.3171	0.5635	0.9860	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
110	0.2354	0.3284	0.6042	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
115	0.2457	0.3404	0.6485	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
120	0.2567	0.3529	0.6966	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**Assumptions and Methods Applicable to the Virginia Local Disability Program  
Long-Term Care Benefits (continued)**

**Porting Premiums:** While actively employed or receiving LTD benefits, a member receives coverage in the amount currently in place for the entire actively employed group. Upon termination of employment, a member has the option to port the amount of current coverage for the group by paying a premium. We reviewed that the premiums below adequately cover the expected costs as a part of the experience study and, therefore, no adjustments are recommended.

Monthly Porting Premium Rates Per \$1 of Daily Benefit Amount							
VLDP Entry Age	Rate	VLDP Entry Age	Rate	VLDP Entry Age	Rate	VLDP Entry Age	Rate
20	0.018	38	0.070	56	0.233	74	1.212
21	0.019	39	0.075	57	0.255	75	1.331
22	0.020	40	0.078	58	0.278	76	1.466
23	0.022	41	0.084	59	0.305	77	1.619
24	0.023	42	0.089	60	0.335	78	1.786
25	0.025	43	0.095	61	0.368	79	1.968
26	0.028	44	0.100	62	0.406	80	2.153
27	0.030	45	0.106	63	0.448	81	2.329
28	0.033	46	0.112	64	0.497	82	2.503
29	0.035	47	0.121	65	0.539	83	2.676
30	0.038	48	0.128	66	0.596	84	2.835
31	0.041	49	0.136	67	0.662	85	2.971
32	0.046	50	0.144	68	0.717	86	3.134
33	0.050	51	0.155	69	0.777	87	3.277
34	0.053	52	0.166	70	0.845	88	3.405
35	0.057	53	0.180	71	0.922	89	3.522
36	0.061	54	0.196	72	1.007	90	3.610
37	0.065	55	0.213	73	1.105		



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**STATE EMPLOYEES<sup>1</sup>**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted General Employee Rates projected generationally;  
females set forward 2 years

b. Post-Retirement:

Pub-2010 Amount Weighted General Healthy Retiree Rates projected  
generationally; 110% of rates for females

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally;  
males and females set forward 3 years

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted General Contingent Annuitant Rates projected  
generationally; 110% of rates for males and females

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is  
75% of the MP-2020 rates

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<sup>1</sup> The actuarial assumptions for State are also applied to the applicable members of the Optional Retirement Plan (ORP).



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

State Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00037	0.00037	0.00316	0.00041	0.00011	0.00014	0.00176	0.00014
25	0.00028	0.00028	0.00321	0.00031	0.00011	0.00010	0.00215	0.00010
30	0.00036	0.00036	0.00411	0.00040	0.00018	0.00017	0.00336	0.00017
35	0.00047	0.00047	0.00555	0.00052	0.00028	0.00025	0.00524	0.00025
40	0.00066	0.00066	0.00834	0.00073	0.00043	0.00040	0.00825	0.00040
45	0.00098	0.00098	0.01342	0.00604	0.00066	0.00062	0.01267	0.00288
50	0.00149	0.00298	0.01921	0.00771	0.00097	0.00244	0.01640	0.00352
55	0.00219	0.00431	0.02355	0.00906	0.00144	0.00315	0.01874	0.00491
60	0.00319	0.00615	0.02785	0.01113	0.00222	0.00422	0.02110	0.00684
65	0.00468	0.00913	0.03524	0.01522	0.00362	0.00674	0.02569	0.00989
70	0.00703	0.01526	0.04599	0.02342	0.00598	0.01169	0.03464	0.01488
75	0.01096	0.02671	0.06347	0.03720	0.00986	0.02071	0.05075	0.02366
80	0.01730	0.04774	0.09259	0.05896	0.04276	0.03696	0.07811	0.03930
85		0.08591	0.13603	0.09617		0.06826	0.11878	0.06948
90		0.14672	0.20588	0.15860		0.12636	0.16740	0.12462

25% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 1.

State Employees Retirement Rates, Plan 1 Male							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	>=31
<=49	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0325	0.0325	0.1250	0.1250
51	0.0000	0.0000	0.0000	0.0325	0.0300	0.0800	0.0900
52	0.0000	0.0000	0.0000	0.0325	0.0300	0.0800	0.0900
53	0.0000	0.0000	0.0000	0.0325	0.0300	0.0800	0.0900
54	0.0000	0.0000	0.0000	0.0325	0.0300	0.0800	0.0900
55	0.0000	0.0450	0.0450	0.0450	0.0350	0.0800	0.0900
56	0.0000	0.0450	0.0400	0.0400	0.0400	0.0800	0.0900
57	0.0000	0.0450	0.0400	0.0400	0.0400	0.0800	0.0900
58	0.0000	0.0450	0.0400	0.0400	0.0400	0.1000	0.0900
59	0.0000	0.0450	0.0400	0.0400	0.0400	0.1000	0.0900
60	0.0000	0.0450	0.0500	0.0500	0.0500	0.1150	0.0900
61	0.0000	0.1500	0.0750	0.0750	0.0750	0.1700	0.1500
62	0.0000	0.1500	0.1000	0.1000	0.1000	0.1700	0.2000
63	0.0000	0.1500	0.1000	0.1000	0.1000	0.1700	0.1750
64	0.0000	0.1500	0.1350	0.1350	0.1350	0.1700	0.1750
65	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
66	0.0000	0.2750	0.2500	0.2500	0.2500	0.2500	0.2500
67	0.0000	0.2750	0.2200	0.2200	0.2200	0.2200	0.2200
68	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
69	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
70	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
71	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
72	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
73	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
74	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
75	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
76	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
77	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
78	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
79	0.0000	0.2000	0.2200	0.2200	0.2200	0.2200	0.2200
>=80	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

State Employees Retirement Rates, Plan 1 Female							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.0000	0.0400	0.0400	0.0750	0.0750
51	0.0000	0.0000	0.0000	0.0400	0.0300	0.0750	0.0600
52	0.0000	0.0000	0.0000	0.0400	0.0350	0.0750	0.0600
53	0.0000	0.0000	0.0000	0.0500	0.0350	0.0750	0.0800
54	0.0000	0.0000	0.0000	0.0500	0.0350	0.0750	0.0800
55	0.0000	0.0500	0.0500	0.0500	0.0400	0.0750	0.0800
56	0.0000	0.0500	0.0400	0.0400	0.0400	0.0750	0.0800
57	0.0000	0.0500	0.0400	0.0400	0.0400	0.1000	0.0900
58	0.0000	0.0500	0.0450	0.0450	0.0450	0.1000	0.0900
59	0.0000	0.0500	0.0500	0.0500	0.0500	0.1200	0.0900
60	0.0000	0.0500	0.0550	0.0550	0.0550	0.1200	0.1250
61	0.0000	0.0750	0.0800	0.0800	0.0800	0.1200	0.1600
62	0.0000	0.1000	0.1200	0.1200	0.1200	0.2250	0.2000
63	0.0000	0.1750	0.1200	0.1200	0.1200	0.2250	0.1750
64	0.0000	0.1750	0.1500	0.1500	0.1500	0.2250	0.1750
65	0.0000	0.2750	0.2750	0.2750	0.2750	0.2750	0.3000
66	0.0000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000
67	0.0000	0.3000	0.2500	0.2500	0.2500	0.2500	0.2500
68	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
69	0.0000	0.2500	0.2700	0.2700	0.2700	0.2700	0.2700
70	0.0000	0.2500	0.2700	0.2700	0.2700	0.2700	0.2700
71	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
72	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
73	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
74	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
75	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
76	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
77	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
78	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
79	0.0000	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
≥80	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000





**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 2 and the Hybrid Plan.

State Employees Retirement Rates, Plan 2 and Hybrid Male																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080
51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
60	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
61	0.000	0.080	0.075	0.075	0.075	0.075	0.080	0.080	0.080	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075
62	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
63	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
64	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
65	0.000	0.200	0.200	0.200	0.200	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
66	0.000	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
67	0.000	0.230	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
68	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
69	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
70	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
71	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
72	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
73	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
74	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
75	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
76	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
77	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
78	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
79	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

State Employees Retirement Rates, Plan 2 and Hybrid Female																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080
51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
60	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
61	0.000	0.080	0.075	0.075	0.075	0.075	0.080	0.080	0.080	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075
62	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
63	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
64	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
65	0.000	0.200	0.200	0.200	0.200	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
66	0.000	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
67	0.000	0.230	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
68	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
69	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
70	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
71	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
72	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
73	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
74	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
75	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
76	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
77	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
78	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
79	0.000	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 25% of disability cases are assumed to be service related.

State Employees Disability Rates		
Age	Male	Female
20	0.00039	0.00033
25	0.00072	0.00100
30	0.00091	0.00211
35	0.00129	0.00281
40	0.00212	0.00354
45	0.00343	0.00474
50	0.00497	0.00629
55	0.00629	0.00742
60	0.00690	0.00735
65	0.00657	0.00653
70	0.00572	0.00841



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**TERMINATION RATES:** The following are sample withdrawal rates based on age and years of service (for causes other than death, disability, or retirement).

State Termination Rates, Male											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	>=10
20	0.27455	0.24436	0.21876	0.19618	0.17376	0.15141	0.13019	0.11442	0.10694	0.11166	0.13006
25	0.23974	0.21579	0.19409	0.17424	0.15524	0.13693	0.11975	0.10595	0.09746	0.09732	0.10701
30	0.19848	0.17836	0.15985	0.14343	0.12952	0.11720	0.10578	0.09487	0.08505	0.07808	0.07539
35	0.17716	0.15218	0.13247	0.11805	0.10829	0.10087	0.09383	0.08541	0.07535	0.06447	0.05388
40	0.16592	0.13267	0.10974	0.09619	0.08963	0.08644	0.08292	0.07677	0.06737	0.05473	0.03929
45	0.15975	0.11918	0.09302	0.07949	0.07467	0.07461	0.07339	0.06905	0.06126	0.04945	0.03331
50	0.15528	0.11158	0.08401	0.07030	0.06578	0.06661	0.06592	0.06272	0.05733	0.04934	0.03819
55	0.15197	0.11087	0.08483	0.07159	0.06658	0.06381	0.06149	0.05872	0.05613	0.05509	0.05439
60	0.15091	0.11838	0.09735	0.08612	0.08094	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.15304	0.13450	0.12193	0.11472	0.11037	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.16014	0.16414	0.16565	0.16590	0.16406	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

State Termination Rates, Female											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	>=10
20	0.31051	0.30337	0.28078	0.24487	0.20381	0.16715	0.14191	0.11957	0.10836	0.11872	0.15981
25	0.27376	0.26249	0.24118	0.21199	0.18029	0.15160	0.13004	0.11112	0.09997	0.10375	0.12876
30	0.23050	0.21033	0.18887	0.16746	0.14755	0.12956	0.11392	0.10015	0.08933	0.08403	0.08671
35	0.20766	0.17777	0.15365	0.13514	0.12123	0.10996	0.09994	0.09070	0.08104	0.07066	0.05980
40	0.19406	0.15556	0.12786	0.10975	0.09881	0.09213	0.08715	0.08194	0.07420	0.06178	0.04364
45	0.18340	0.13974	0.10951	0.09110	0.08142	0.07776	0.07634	0.07404	0.06888	0.05803	0.04010
50	0.17198	0.12790	0.09781	0.08001	0.07116	0.06882	0.06860	0.06763	0.06550	0.06030	0.05125
55	0.16001	0.12044	0.09383	0.07856	0.07120	0.06731	0.06491	0.06383	0.06463	0.06942	0.07765
60	0.14937	0.11902	0.09937	0.08896	0.08486	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.14142	0.12453	0.11513	0.11187	0.11326	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.13651	0.14019	0.14662	0.15441	0.16495	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** The following total salary increase rates are used. The total salary increase rate consists of an inflation rate of 2.50%, a productivity component of 1.00%, and a variable merit component that is dependent on years of service.

<b>Pay Increase Assumption</b>	
<b>Years of Service</b>	<b>Total Increase (Next Year)</b>
1	5.35%
2	5.35
3	4.75
4	4.45
5	4.45
6	4.45
7	4.35
8	4.25
9	4.00
10	4.00
11-19	3.65
20 or more	3.50

**DISABILITY ELECTION:** All active members hired on or after January 1, 1999 will enter the Virginia Sickness and Disability Program (VSDP) and will not be eligible to receive non-VSDP disability benefits. For members hired before January 1, 1999 we measure the liabilities based upon the member's actual election contained in the valuation data.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**TEACHERS**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted Teachers Employee Rates projected generationally;  
110% of rates for males

b. Post-Retirement:

Pub-2010 Amount Weighted Teachers Healthy Retiree Rates projected  
generationally; males set forward 1 year; 105% of rates for females

c. Post-Disablement:

Pub-2010 Amount Weighted Teachers Disabled Rates projected generationally;  
110% of rates for males and females

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted Teachers Contingent Annuitant Rates projected  
generationally

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is  
75% of the MP-2020 rates



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Teachers Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00037	0.00030	0.00453	0.00034	0.00013	0.00014	0.00256	0.00013
25	0.00018	0.00017	0.00306	0.00016	0.00009	0.00010	0.00180	0.00009
30	0.00024	0.00024	0.00389	0.00022	0.00014	0.00015	0.00283	0.00014
35	0.00033	0.00032	0.00504	0.00030	0.00020	0.00021	0.00441	0.00020
40	0.00046	0.00046	0.00710	0.00042	0.00031	0.00033	0.00692	0.00031
45	0.00074	0.00074	0.01108	0.00549	0.00048	0.00050	0.01084	0.00262
50	0.00122	0.00122	0.01766	0.00701	0.00073	0.00077	0.01631	0.00320
55	0.00189	0.00245	0.02325	0.00824	0.00107	0.00203	0.01916	0.00446
60	0.00290	0.00393	0.02753	0.01012	0.00161	0.00301	0.02152	0.00622
65	0.00479	0.00662	0.03348	0.01384	0.00270	0.00468	0.02482	0.00899
70	0.00780	0.01214	0.04291	0.02129	0.00485	0.00809	0.03148	0.01353
75	0.01185	0.02312	0.05711	0.03382	0.00921	0.01534	0.04403	0.02151
80	0.02343	0.04363	0.08083	0.05360	0.01826	0.02959	0.06608	0.03573
85		0.08198	0.11897	0.08743		0.05655	0.10264	0.06316
90		0.14859	0.17878	0.14418		0.10594	0.15032	0.11329

5% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 1.

Teachers Employees Retirement Rates, Plan 1 Male							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	>=31
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.025	0.025	0.150	0.150
51	0.000	0.000	0.000	0.070	0.035	0.150	0.100
52	0.000	0.000	0.000	0.070	0.035	0.150	0.100
53	0.000	0.000	0.000	0.040	0.035	0.150	0.100
54	0.000	0.000	0.000	0.040	0.040	0.150	0.100
55	0.000	0.070	0.070	0.070	0.050	0.225	0.150
56	0.000	0.070	0.050	0.050	0.050	0.225	0.150
57	0.000	0.070	0.050	0.050	0.050	0.225	0.150
58	0.000	0.070	0.050	0.050	0.050	0.225	0.150
59	0.000	0.100	0.070	0.070	0.070	0.225	0.150
60	0.000	0.100	0.075	0.075	0.075	0.225	0.170
61	0.000	0.110	0.120	0.120	0.120	0.350	0.230
62	0.000	0.170	0.150	0.150	0.150	0.350	0.300
63	0.000	0.140	0.150	0.150	0.150	0.350	0.250
64	0.000	0.180	0.150	0.150	0.150	0.350	0.250
65	0.000	0.300	0.300	0.300	0.300	0.300	0.340
66	0.000	0.275	0.340	0.340	0.340	0.340	0.340
67	0.000	0.300	0.340	0.340	0.340	0.340	0.340
68	0.000	0.300	0.300	0.300	0.300	0.300	0.300
69	0.000	0.300	0.300	0.300	0.300	0.300	0.300
70	0.000	0.300	0.300	0.300	0.300	0.300	0.300
71	0.000	0.300	0.300	0.300	0.300	0.300	0.300
72	0.000	0.300	0.250	0.250	0.250	0.250	0.250
73	0.000	0.300	0.250	0.250	0.250	0.250	0.250
74	0.000	0.300	0.250	0.250	0.250	0.250	0.250
75	0.000	0.300	0.250	0.250	0.250	0.250	0.250
76	0.000	0.300	0.250	0.250	0.250	0.250	0.250
77	0.000	0.300	0.250	0.250	0.250	0.250	0.250
78	0.000	0.300	0.250	0.250	0.250	0.250	0.250
79	0.000	0.300	0.250	0.250	0.250	0.250	0.250
>=80	0.000	1.000	1.000	1.000	1.000	1.000	1.000





**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Teachers Employees Retirement Rates, Plan 1 Female							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.030	0.030	0.150	0.150
51	0.000	0.000	0.000	0.045	0.030	0.150	0.100
52	0.000	0.000	0.000	0.045	0.040	0.150	0.100
53	0.000	0.000	0.000	0.045	0.040	0.150	0.100
54	0.000	0.000	0.000	0.045	0.045	0.150	0.120
55	0.000	0.045	0.045	0.045	0.050	0.225	0.160
56	0.000	0.060	0.055	0.055	0.055	0.225	0.160
57	0.000	0.060	0.055	0.055	0.055	0.225	0.160
58	0.000	0.070	0.055	0.055	0.055	0.225	0.160
59	0.000	0.080	0.070	0.070	0.070	0.225	0.170
60	0.000	0.090	0.085	0.085	0.085	0.300	0.200
61	0.000	0.250	0.110	0.110	0.110	0.300	0.250
62	0.000	0.250	0.150	0.150	0.150	0.350	0.300
63	0.000	0.250	0.150	0.150	0.150	0.350	0.280
64	0.000	0.250	0.200	0.200	0.200	0.350	0.280
65	0.000	0.350	0.350	0.350	0.350	0.350	0.400
66	0.000	0.300	0.400	0.400	0.400	0.400	0.400
67	0.000	0.300	0.320	0.320	0.320	0.320	0.320
68	0.000	0.300	0.320	0.320	0.320	0.320	0.320
69	0.000	0.300	0.320	0.320	0.320	0.320	0.320
70	0.000	0.300	0.320	0.320	0.320	0.320	0.320
71	0.000	0.300	0.275	0.275	0.275	0.275	0.275
72	0.000	0.300	0.275	0.275	0.275	0.275	0.275
73	0.000	0.300	0.275	0.275	0.275	0.275	0.275
74	0.000	0.300	0.275	0.275	0.275	0.275	0.275
75	0.000	0.300	0.275	0.275	0.275	0.275	0.275
76	0.000	0.300	0.275	0.275	0.275	0.275	0.275
77	0.000	0.300	0.275	0.275	0.275	0.275	0.275
78	0.000	0.300	0.275	0.275	0.275	0.275	0.275
79	0.000	0.300	0.275	0.275	0.275	0.275	0.275
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 2 and the Hybrid Plan.

Teachers Employees Retirement Rates, Plan 2 and Hybrid Male																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090
51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
60	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
61	0.000	0.140	0.100	0.100	0.100	0.100	0.140	0.140	0.140	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
62	0.000	0.150	0.130	0.130	0.130	0.150	0.150	0.150	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130
63	0.000	0.150	0.130	0.130	0.130	0.150	0.150	0.150	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130
64	0.000	0.150	0.140	0.150	0.150	0.150	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140
65	0.000	0.300	0.300	0.300	0.300	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
66	0.000	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
67	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
68	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
69	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
70	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
71	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
72	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
73	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
74	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
75	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
76	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
77	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
78	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
79	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Teachers Employees Retirement Rates, Plan 2 and Hybrid Female																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090
51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
60	0.000	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
61	0.000	0.140	0.100	0.100	0.100	0.100	0.140	0.140	0.140	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
62	0.000	0.150	0.130	0.130	0.130	0.150	0.150	0.150	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130
63	0.000	0.150	0.130	0.130	0.150	0.150	0.150	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130
64	0.000	0.150	0.140	0.150	0.150	0.150	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140
65	0.000	0.300	0.300	0.300	0.300	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
66	0.000	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
67	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
68	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
69	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
70	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
71	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
72	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
73	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
74	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
75	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
76	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
77	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
78	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
79	0.000	0.300	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 5% of disability cases are assumed to be service related.

Teachers Disability Rates		
Age	Male	Female
20	0.000005	0.000003
25	0.000005	0.000023
30	0.000064	0.000081
35	0.000135	0.000196
40	0.000325	0.000481
45	0.000725	0.000792
50	0.001444	0.001609
55	0.002443	0.002521
60	0.003395	0.003321
65	0.003773	0.003509
70	0.003773	0.003509



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**TERMINATION RATES:** The following are sample withdrawal rates based on age and years of service (for causes other than death, disability, or retirement).

Teachers Termination Rates, Male											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	>=10
20	0.21024	0.18133	0.15388	0.13077	0.11441	0.10289	0.09263	0.08171	0.07520	0.08410	0.10256
25	0.19207	0.16728	0.14515	0.12651	0.11200	0.10027	0.08948	0.07865	0.07114	0.07386	0.08326
30	0.17373	0.15296	0.13619	0.12212	0.10955	0.09763	0.08634	0.07569	0.06663	0.06067	0.05704
35	0.16839	0.14734	0.13071	0.11712	0.10510	0.09374	0.08315	0.07322	0.06329	0.05217	0.04003
40	0.17192	0.14706	0.12722	0.11176	0.09935	0.08902	0.07978	0.07098	0.06080	0.04704	0.02932
45	0.18182	0.15046	0.12547	0.10682	0.09330	0.08397	0.07608	0.06863	0.05924	0.04581	0.02657
50	0.19523	0.15641	0.12587	0.10367	0.08850	0.07924	0.07216	0.06603	0.05883	0.04925	0.02260
55	0.21008	0.16464	0.12933	0.10382	0.08670	0.07536	0.06833	0.06318	0.05973	0.05790	0.02260
60	0.22536	0.17534	0.13667	0.10856	0.08958	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.24063	0.18847	0.14805	0.11831	0.09792	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.25778	0.20650	0.16623	0.13612	0.11494	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Teachers Termination Rates, Female											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	>=10
20	0.18402	0.15181	0.13307	0.12138	0.10696	0.09610	0.08820	0.08060	0.06604	0.06553	0.08772
25	0.18376	0.15481	0.13758	0.12581	0.11260	0.10133	0.09186	0.08253	0.06911	0.06524	0.07704
30	0.18401	0.15920	0.14307	0.13106	0.11916	0.10734	0.09622	0.08548	0.07393	0.06510	0.06148
35	0.17757	0.15500	0.13863	0.12610	0.11452	0.10307	0.09292	0.08399	0.07473	0.06273	0.04807
40	0.16719	0.14495	0.12771	0.11411	0.10233	0.09214	0.08464	0.07905	0.07207	0.05823	0.03499
45	0.15616	0.13289	0.11458	0.10011	0.08846	0.07999	0.07497	0.07203	0.06668	0.05362	0.02476
50	0.14917	0.12446	0.10550	0.09113	0.08036	0.07318	0.06863	0.06593	0.06167	0.05381	0.02476
55	0.15060	0.12499	0.10614	0.09285	0.08348	0.07597	0.06925	0.06342	0.06066	0.06295	0.02476
60	0.16342	0.13817	0.12008	0.10819	0.10045	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.18831	0.16489	0.14798	0.13739	0.13130	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.23251	0.21308	0.19795	0.18856	0.18426	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** Teachers are assumed to receive their first salary increase on the valuation date. The following salary increase rates are used. Inflation rate of 2.50% plus productivity component of 1.00% plus step-rate/promotional component as shown:

<b>Pay Increase Assumption</b>	
<b>Years of Service</b>	<b>Total Increase (Next Year)</b>
1	5.95%
2	5.85
3	5.85
4	5.45
5	5.45
6	5.45
7	5.35
8	5.35
9	5.35
10	4.85
11	4.85
12	4.85
13	4.75
14	4.75
15	4.65
16	4.65
17	4.55
18	4.45
19	4.45
20 or more	3.50



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**STATE POLICE**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted Safety Employee Rates projected generationally; 95% of rates for males; 105% of rates for females set forward 2 years

b. Post-Retirement:

Pub-2010 Amount Weighted Safety Healthy Retiree Rates projected generationally; 110% of rates for males; 105% of rates for females set forward 3 years

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally; 95% of rates for males set back 3 years; 90% of rates for females set back 3 years

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted Safety Contingent Annuitant Rates projected generationally; 110% of rates for males and females set forward 2 years

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is 75% of the MP-2020 rates



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

SPORS Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00039	0.00045	0.00030	0.00044	0.00018	0.00019	0.00011	0.00019
25	0.00035	0.00041	0.00334	0.00043	0.00023	0.00025	0.00175	0.00024
30	0.00039	0.00045	0.00291	0.00047	0.00032	0.00034	0.00176	0.00033
35	0.00045	0.00052	0.00372	0.00055	0.00043	0.00045	0.00276	0.00045
40	0.00056	0.00065	0.00492	0.00074	0.00059	0.00062	0.00431	0.00062
45	0.00078	0.00134	0.00725	0.00656	0.00080	0.00126	0.00679	0.00312
50	0.00114	0.00211	0.01160	0.00822	0.00108	0.00217	0.01050	0.00403
55	0.00166	0.00337	0.01727	0.00976	0.00147	0.00376	0.01428	0.00559
60	0.00251	0.00559	0.02166	0.01243	0.00200	0.00649	0.01650	0.00789
65	0.00390	0.00969	0.02543	0.01791	0.00315	0.01121	0.01846	0.01158
70	0.00728	0.01725	0.03185	0.02818	0.00628	0.01936	0.02205	0.01781
75	0.01360	0.03109	0.04127	0.04466	0.01249	0.03344	0.02915	0.02881
80	0.02541	0.05613	0.05625	0.07148	0.05177	0.05774	0.04210	0.04901
85		0.10049	0.08137	0.11732		0.09971	0.06435	0.08833
90		0.17446	0.11975	0.19311		0.16715	0.09913	0.15347

85% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.





**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire.

SPORS Retirement Rates				
Age	Years of Service			
	0-4	5-24	25	>=26
<=49	0.000	0.000	0.000	0.000
50	0.000	0.100	0.100	0.100
51	0.000	0.030	0.100	0.100
52	0.000	0.030	0.100	0.100
53	0.000	0.030	0.100	0.100
54	0.000	0.030	0.100	0.100
55	0.000	0.060	0.100	0.200
56	0.000	0.060	0.100	0.130
57	0.000	0.060	0.100	0.130
58	0.000	0.100	0.100	0.130
59	0.000	0.100	0.100	0.130
60	0.000	0.100	0.100	0.130
61	0.000	0.100	0.100	0.130
62	0.000	0.200	0.200	0.200
63	0.000	0.200	0.200	0.300
64	0.000	0.200	0.200	0.300
65	0.000	0.200	0.200	0.500
66	0.000	0.200	0.200	0.500
67	0.000	0.200	0.200	0.500
68	0.000	0.200	0.200	0.500
69	0.000	0.200	0.200	0.500
>=70	0.000	1.000	1.000	1.000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 85% of disability cases are assumed to be service related.

SPORS Disability Rates	
Age	Unisex
<=44	0.00194
45	0.00233
50	0.00481
55	0.00770
60	0.00897
65	0.01108
70	0.01368

**TERMINATION RATES:** The following are sample withdrawal rates based on years of service (for causes other than death, disability, or retirement).

SPORS Termination Rates	
Service	Unisex
0	0.08000
1	0.06000
2	0.06000
3	0.06000
4	0.06000
5	0.06000
6	0.06000
7	0.03000
8	0.03000
9	0.03000
>=10	0.01750



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** The following salary increase rates are used. Inflation rate of 2.50% plus productivity component of 1.00% plus step-rate/promotional component as shown:

Pay Increase Assumption	
Years of Service	Total Increase (Next Year)
1	4.75%
2	4.75
3	4.75
4	4.75
5	4.65
6	4.40
7	4.40
8	4.40
9	4.40
10 - 19	4.00
20 or more	3.50

**DISABILITY ELECTION:** All active members hired on or after January 1, 1999 will enter the Virginia Sickness and Disability Program (VSDP) and will not be eligible to receive non-VSDP disability benefits. For members hired before January 1, 1999 we measure the liabilities based upon the member's actual election contained in the valuation data.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**JUDICIAL**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted General Employee Rates projected generationally;  
males set forward 2 years

b. Post-Retirement:

Pub-2010 Amount Weighted General Healthy Retiree Rates projected  
generationally; 95% of rates for males and females set back 2 years

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted General Contingent Annuitant Rates projected  
generationally

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is  
75% of the MP-2020 rates



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

JRS Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00033	0.00034	0.00412	0.00037	0.00013	0.00012	0.00233	0.00013
25	0.00031	0.00030	0.00278	0.00028	0.00009	0.00010	0.00164	0.00009
30	0.00040	0.00031	0.00354	0.00036	0.00015	0.00011	0.00257	0.00015
35	0.00053	0.00040	0.00458	0.00047	0.00023	0.00018	0.00401	0.00023
40	0.00077	0.00054	0.00645	0.00066	0.00036	0.00029	0.00629	0.00036
45	0.00116	0.00079	0.01007	0.00549	0.00056	0.00045	0.00985	0.00262
50	0.00175	0.00121	0.01605	0.00701	0.00083	0.00068	0.01483	0.00320
55	0.00255	0.00353	0.02114	0.00824	0.00123	0.00246	0.01742	0.00446
60	0.00371	0.00506	0.02503	0.01012	0.00186	0.00319	0.01956	0.00622
65	0.00548	0.00732	0.03044	0.01384	0.00296	0.00475	0.02256	0.00899
70	0.00837	0.01168	0.03901	0.02129	0.00489	0.00807	0.02862	0.01353
75	0.01315	0.02023	0.05192	0.03382	0.00808	0.01422	0.04003	0.02151
80	0.06052	0.03586	0.07348	0.05360	0.01330	0.02525	0.06007	0.03573
85		0.06471	0.10815	0.08743		0.04592	0.09331	0.06316
90		0.11350	0.16253	0.14418		0.08594	0.13665	0.11329

5% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire with an unreduced retirement benefit.

Judicial Retirement Rates	
Age	Unisex
<=59	0.000
60	0.100
61	0.100
62	0.100
63	0.100
64	0.100
65	0.100
66	0.100
67	0.150
68	0.150
69	0.150
70	0.250
71	0.250
72	0.250
>=73	1.000

**DISABILITY RATES:** There are no assumed rates of disability prior to service retirement for causes other than death or retirement.

**TERMINATION RATES:** There are no assumed rates of withdrawal prior to service retirement for causes other than death or retirement.

**SALARY INCREASE RATES:** Salary increase rates are 4.0%.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**VIRGINIA LAW OFFICERS**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted Safety Employee Rates projected generationally; 95% of rates for males; 105% of rates for females set forward 2 years

b. Post-Retirement:

Pub-2010 Amount Weighted Safety Healthy Retiree Rates projected generationally; 110% of rates for males; 105% of rates for females set forward 3 years

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally; 95% of rates for males set back 3 years; 90% of rates for females set back 3 years

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted Safety Contingent Annuitant Rates projected generationally; 110% of rates for males and females set forward 2 years

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is 75% of the MP-2020 rates



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

VaLORS Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00039	0.00045	0.00030	0.00044	0.00018	0.00019	0.00011	0.00019
25	0.00035	0.00041	0.00334	0.00043	0.00023	0.00025	0.00175	0.00024
30	0.00039	0.00045	0.00291	0.00047	0.00032	0.00034	0.00176	0.00033
35	0.00045	0.00052	0.00372	0.00055	0.00043	0.00045	0.00276	0.00045
40	0.00056	0.00065	0.00492	0.00074	0.00059	0.00062	0.00431	0.00062
45	0.00078	0.00134	0.00725	0.00656	0.00080	0.00126	0.00679	0.00312
50	0.00114	0.00211	0.01160	0.00822	0.00108	0.00217	0.01050	0.00403
55	0.00166	0.00337	0.01727	0.00976	0.00147	0.00376	0.01428	0.00559
60	0.00251	0.00559	0.02166	0.01243	0.00200	0.00649	0.01650	0.00789
65	0.00390	0.00969	0.02543	0.01791	0.00315	0.01121	0.01846	0.01158
70	0.00728	0.01725	0.03185	0.02818	0.00628	0.01936	0.02205	0.01781
75	0.01360	0.03109	0.04127	0.04466	0.01249	0.03344	0.02915	0.02881
80	0.02541	0.05613	0.05625	0.07148	0.05177	0.05774	0.04210	0.04901
85		0.10049	0.08137	0.11732		0.09971	0.06435	0.08833
90		0.17446	0.11975	0.19311		0.16715	0.09913	0.15347

35% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.





***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire.

VaLORS Retirement Rates, Male					
Age	Years of Service				
	0-4	5	6-24	25	>=26
<=49	0.000	0.000	0.000	0.000	0.000
50	0.000	0.150	0.150	0.450	0.450
51	0.000	0.100	0.080	0.300	0.300
52	0.000	0.100	0.080	0.300	0.300
53	0.000	0.100	0.080	0.300	0.250
54	0.000	0.100	0.080	0.240	0.250
55	0.000	0.100	0.080	0.180	0.250
56	0.000	0.100	0.090	0.180	0.250
57	0.000	0.100	0.100	0.180	0.200
58	0.000	0.100	0.100	0.180	0.200
59	0.000	0.100	0.120	0.180	0.200
60	0.000	0.180	0.180	0.180	0.300
61	0.000	0.180	0.200	0.200	0.200
62	0.000	0.180	0.300	0.300	0.300
63	0.000	0.400	0.250	0.250	0.250
64	0.000	0.150	0.250	0.250	0.250
65	0.000	0.150	0.300	0.300	0.300
66	0.000	0.150	0.300	0.300	0.300
67	0.000	0.150	0.300	0.300	0.300
68	0.000	0.150	0.300	0.300	0.300
69	0.000	0.150	0.300	0.300	0.300
>=70	0.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

VaLORS Retirement Rates, Female					
Age	Years of Service				
	0-4	5	6-24	25	>=26
<=49	0.000	0.000	0.000	0.000	0.000
50	0.000	0.150	0.150	0.375	0.375
51	0.000	0.100	0.100	0.250	0.200
52	0.000	0.100	0.090	0.250	0.200
53	0.000	0.100	0.090	0.250	0.225
54	0.000	0.100	0.090	0.250	0.300
55	0.000	0.100	0.090	0.250	0.300
56	0.000	0.100	0.100	0.250	0.300
57	0.000	0.100	0.130	0.250	0.180
58	0.000	0.100	0.130	0.400	0.180
59	0.000	0.100	0.130	0.300	0.200
60	0.000	0.200	0.200	0.200	0.200
61	0.000	0.200	0.200	0.200	0.200
62	0.000	0.200	0.350	0.350	0.350
63	0.000	0.200	0.250	0.250	0.250
64	0.000	0.200	0.250	0.250	0.250
65	0.000	0.200	0.500	0.500	0.500
66	0.000	0.200	0.300	0.300	0.300
67	0.000	0.200	0.300	0.300	0.300
68	0.000	0.200	0.300	0.300	0.300
69	0.000	0.200	0.300	0.300	0.300
>=70	0.000	1.000	1.000	1.000	1.000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 35% of disability cases are assumed to be service related.

VaLORS Disability Rates		
Age	Male	Female
20	0.00143	0.00543
25	0.00322	0.00581
30	0.00584	0.00659
35	0.00720	0.00769
40	0.00793	0.01001
45	0.00913	0.01381
50	0.01165	0.01821
55	0.01501	0.02277
60	0.01782	0.02901
65	0.01916	0.03865
70	0.01920	0.05499



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**TERMINATION RATES:** The following are sample withdrawal rates based on age and years of service (for causes other than death, disability, or retirement).

VaLORS Termination Rates, Male											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	≥10
20	0.39130	0.29901	0.23922	0.21072	0.20801	0.21063	0.20749	0.19800	0.19643	0.19065	0.21396
25	0.36285	0.28479	0.23294	0.20555	0.19714	0.19438	0.18892	0.17882	0.17232	0.16314	0.17288
30	0.32624	0.26656	0.22474	0.19872	0.18316	0.17349	0.16486	0.15375	0.14058	0.12618	0.11671
35	0.29590	0.24719	0.21139	0.18685	0.16890	0.15650	0.14654	0.13513	0.11884	0.10094	0.07962
40	0.26990	0.22715	0.19453	0.17109	0.15383	0.14157	0.13160	0.12059	0.10400	0.08381	0.05579
45	0.24947	0.20776	0.17527	0.15163	0.13800	0.12852	0.11960	0.10962	0.09617	0.07511	0.04653
50	0.23564	0.19022	0.15449	0.12845	0.12136	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
55	0.22917	0.17523	0.13271	0.10157	0.10390	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
60	0.23045	0.16307	0.11015	0.07107	0.08562	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.23923	0.15385	0.08724	0.03755	0.06679	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.25880	0.14725	0.06100	0.00455	0.04490	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

VaLORS Termination Rates, Female											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	≥10
20	0.47177	0.35733	0.28556	0.25386	0.26029	0.28130	0.30657	0.32166	0.31215	0.30524	0.22840
25	0.43786	0.33985	0.27627	0.24458	0.24051	0.24937	0.26238	0.26963	0.25996	0.24867	0.18991
30	0.39363	0.31781	0.26502	0.23302	0.21502	0.20767	0.20420	0.20042	0.18976	0.17234	0.13686
35	0.35591	0.29532	0.25008	0.21852	0.19421	0.17876	0.16674	0.15620	0.14391	0.12349	0.09981
40	0.32307	0.27240	0.23204	0.20097	0.17622	0.15870	0.14410	0.12972	0.11499	0.09385	0.07347
45	0.29713	0.25007	0.21104	0.17970	0.16112	0.14777	0.13695	0.12161	0.10324	0.08381	0.04500
50	0.27965	0.22915	0.18712	0.15384	0.14876	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
55	0.27168	0.21009	0.16023	0.12279	0.13911	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
60	0.27367	0.19304	0.13033	0.08631	0.13217	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.28529	0.17815	0.09796	0.04508	0.12790	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.31084	0.16417	0.05830	0.00350	0.12656	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** The following salary increase rates are used. Inflation rate of 2.50% plus productivity component of 1.00% plus step-rate/promotional component as shown:

Pay Increase Assumption	
Years of Service	Total Increase (Next Year)
1	4.75%
2	4.75
3	4.75
4	4.75
5	4.65
6	4.40
7	4.40
8	4.40
9	4.40
10 - 19	4.00
20 or more	3.50

**DISABILITY ELECTION:** All active members hired on or after January 1, 1999 will enter the Virginia Sickness and Disability Program (VSDP) and will not be eligible to receive non-VSDP disability benefits. For members hired before January 1, 1999 we measure the liabilities based upon the member's actual election contained in the valuation data.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**LOCALS – TOP 10, NON-HAZARDOUS DUTY**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted General Employee Rates projected generationally; males set forward 2 years; 105% of rates for females set forward 3 years

b. Post-Retirement:

Pub-2010 Amount Weighted General Healthy Retiree Rates projected generationally; 95% of rates for males set forward 2 years; 95% of rates for females set forward 1 year

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally; 110% of rates for males set forward 3 years; 110% of rates for females set forward 2 years

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted General Contingent Annuitant Rates projected generationally

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is 75% of the MP-2020 rates



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Top 10 Non-Hazardous Duty Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00033	0.00031	0.00348	0.00037	0.00011	0.00011	0.00213	0.00013
25	0.00031	0.00030	0.00353	0.00028	0.00013	0.00010	0.00216	0.00009
30	0.00040	0.00038	0.00452	0.00036	0.00020	0.00015	0.00338	0.00015
35	0.00053	0.00050	0.00611	0.00047	0.00032	0.00024	0.00527	0.00023
40	0.00077	0.00073	0.00917	0.00066	0.00049	0.00038	0.00829	0.00036
45	0.00116	0.00110	0.01476	0.00549	0.00075	0.00058	0.01284	0.00262
50	0.00175	0.00329	0.02113	0.00701	0.00110	0.00221	0.01746	0.00320
55	0.00255	0.00472	0.02591	0.00824	0.00164	0.00286	0.02016	0.00446
60	0.00371	0.00677	0.03064	0.01012	0.00256	0.00395	0.02256	0.00622
65	0.00548	0.01053	0.03876	0.01384	0.00420	0.00648	0.02695	0.00899
70	0.00837	0.01809	0.05059	0.02129	0.00694	0.01132	0.03563	0.01353
75	0.01315	0.03193	0.06982	0.03382	0.01145	0.02006	0.05146	0.02151
80	0.06052	0.05749	0.10185	0.05360	0.05076	0.03598	0.07865	0.03573
85		0.10196	0.14963	0.08743		0.06689	0.12115	0.06316
90		0.16858	0.22647	0.14418		0.12191	0.17199	0.11329

20% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 1.

Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Male with 50/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	>=31
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.065	0.065	0.100	0.100
51	0.000	0.000	0.000	0.065	0.040	0.100	0.090
52	0.000	0.000	0.000	0.065	0.050	0.100	0.090
53	0.000	0.000	0.000	0.065	0.060	0.100	0.090
54	0.000	0.000	0.000	0.065	0.035	0.100	0.090
55	0.000	0.065	0.065	0.065	0.050	0.100	0.090
56	0.000	0.065	0.050	0.050	0.050	0.100	0.100
57	0.000	0.065	0.040	0.040	0.040	0.100	0.100
58	0.000	0.065	0.040	0.040	0.040	0.100	0.100
59	0.000	0.065	0.040	0.040	0.040	0.100	0.150
60	0.000	0.065	0.060	0.060	0.060	0.100	0.150
61	0.000	0.065	0.090	0.090	0.090	0.100	0.150
62	0.000	0.065	0.090	0.090	0.090	0.250	0.225
63	0.000	0.065	0.090	0.090	0.090	0.250	0.225
64	0.000	0.065	0.150	0.150	0.150	0.250	0.225
65	0.000	0.250	0.250	0.250	0.250	0.250	0.270
66	0.000	0.300	0.300	0.300	0.300	0.300	0.300
67	0.000	0.150	0.250	0.250	0.250	0.250	0.250
68	0.000	0.150	0.200	0.200	0.200	0.200	0.200
69	0.000	0.275	0.200	0.200	0.200	0.200	0.200
70	0.000	0.275	0.200	0.200	0.200	0.200	0.200
71	0.000	0.275	0.200	0.200	0.200	0.200	0.200
72	0.000	0.275	0.200	0.200	0.200	0.200	0.200
73	0.000	0.275	0.200	0.200	0.200	0.200	0.200
74	0.000	0.275	0.200	0.200	0.200	0.200	0.200
75	0.000	0.275	0.200	0.200	0.200	0.200	0.200
76	0.000	0.275	0.200	0.200	0.200	0.200	0.200
77	0.000	0.275	0.200	0.200	0.200	0.200	0.200
78	0.000	0.275	0.200	0.200	0.200	0.200	0.200
79	0.000	0.275	0.200	0.200	0.200	0.200	0.200
>=80	0.000	1.000	1.000	1.000	1.000	1.000	1.000





**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Female with 50/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.050	0.050	0.160	0.160
51	0.000	0.000	0.000	0.070	0.040	0.110	0.085
52	0.000	0.000	0.000	0.070	0.040	0.120	0.085
53	0.000	0.000	0.000	0.070	0.050	0.175	0.085
54	0.000	0.000	0.000	0.070	0.070	0.220	0.085
55	0.000	0.070	0.070	0.070	0.055	0.220	0.150
56	0.000	0.105	0.055	0.055	0.055	0.220	0.150
57	0.000	0.105	0.050	0.050	0.050	0.220	0.150
58	0.000	0.105	0.050	0.050	0.050	0.165	0.160
59	0.000	0.105	0.065	0.065	0.065	0.220	0.160
60	0.000	0.105	0.065	0.065	0.065	0.220	0.160
61	0.000	0.105	0.065	0.065	0.065	0.220	0.160
62	0.000	0.105	0.130	0.130	0.130	0.345	0.250
63	0.000	0.105	0.120	0.120	0.120	0.240	0.180
64	0.000	0.105	0.170	0.170	0.170	0.240	0.275
65	0.000	0.280	0.280	0.280	0.280	0.280	0.275
66	0.000	0.200	0.300	0.300	0.300	0.300	0.300
67	0.000	0.150	0.275	0.275	0.275	0.275	0.275
68	0.000	0.150	0.275	0.275	0.275	0.275	0.275
69	0.000	0.150	0.275	0.275	0.275	0.275	0.275
70	0.000	0.150	0.275	0.275	0.275	0.275	0.275
71	0.000	0.150	0.275	0.275	0.275	0.275	0.275
72	0.000	0.150	0.275	0.275	0.275	0.275	0.275
73	0.000	0.150	0.275	0.275	0.275	0.275	0.275
74	0.000	0.150	0.275	0.275	0.275	0.275	0.275
75	0.000	0.150	0.275	0.275	0.275	0.275	0.275
76	0.000	0.150	0.275	0.275	0.275	0.275	0.275
77	0.000	0.150	0.275	0.275	0.275	0.275	0.275
78	0.000	0.150	0.275	0.275	0.275	0.275	0.275
79	0.000	0.150	0.275	0.275	0.275	0.275	0.275
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Male with 55/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.065	0.065	0.065	0.065
51	0.000	0.000	0.000	0.065	0.040	0.040	0.040
52	0.000	0.000	0.000	0.065	0.050	0.050	0.050
53	0.000	0.000	0.000	0.065	0.060	0.060	0.060
54	0.000	0.000	0.000	0.065	0.035	0.035	0.035
55	0.000	0.065	0.065	0.065	0.050	0.100	0.100
56	0.000	0.065	0.050	0.050	0.050	0.100	0.100
57	0.000	0.065	0.040	0.040	0.040	0.100	0.100
58	0.000	0.065	0.040	0.040	0.040	0.100	0.100
59	0.000	0.065	0.040	0.040	0.040	0.100	0.150
60	0.000	0.065	0.060	0.060	0.060	0.100	0.150
61	0.000	0.065	0.090	0.090	0.090	0.100	0.150
62	0.000	0.065	0.090	0.090	0.090	0.250	0.225
63	0.000	0.065	0.090	0.090	0.090	0.250	0.225
64	0.000	0.065	0.150	0.150	0.150	0.250	0.225
65	0.000	0.250	0.250	0.250	0.250	0.250	0.270
66	0.000	0.300	0.300	0.300	0.300	0.300	0.300
67	0.000	0.150	0.250	0.250	0.250	0.250	0.250
68	0.000	0.150	0.200	0.200	0.200	0.200	0.200
69	0.000	0.275	0.200	0.200	0.200	0.200	0.200
70	0.000	0.275	0.200	0.200	0.200	0.200	0.200
71	0.000	0.275	0.200	0.200	0.200	0.200	0.200
72	0.000	0.275	0.200	0.200	0.200	0.200	0.200
73	0.000	0.275	0.200	0.200	0.200	0.200	0.200
74	0.000	0.275	0.200	0.200	0.200	0.200	0.200
75	0.000	0.275	0.200	0.200	0.200	0.200	0.200
76	0.000	0.275	0.200	0.200	0.200	0.200	0.200
77	0.000	0.275	0.200	0.200	0.200	0.200	0.200
78	0.000	0.275	0.200	0.200	0.200	0.200	0.200
79	0.000	0.275	0.200	0.200	0.200	0.200	0.200
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Female with 55/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.050	0.050	0.050	0.050
51	0.000	0.000	0.000	0.070	0.040	0.040	0.040
52	0.000	0.000	0.000	0.070	0.040	0.040	0.040
53	0.000	0.000	0.000	0.070	0.050	0.050	0.050
54	0.000	0.000	0.000	0.070	0.070	0.070	0.070
55	0.000	0.070	0.070	0.070	0.055	0.220	0.220
56	0.000	0.105	0.055	0.055	0.055	0.220	0.150
57	0.000	0.105	0.050	0.050	0.050	0.220	0.150
58	0.000	0.105	0.050	0.050	0.050	0.165	0.160
59	0.000	0.105	0.065	0.065	0.065	0.220	0.160
60	0.000	0.105	0.065	0.065	0.065	0.220	0.160
61	0.000	0.105	0.065	0.065	0.065	0.220	0.160
62	0.000	0.105	0.130	0.130	0.130	0.345	0.250
63	0.000	0.105	0.120	0.120	0.120	0.240	0.180
64	0.000	0.105	0.170	0.170	0.170	0.240	0.275
65	0.000	0.280	0.280	0.280	0.280	0.280	0.275
66	0.000	0.200	0.300	0.300	0.300	0.300	0.300
67	0.000	0.150	0.275	0.275	0.275	0.275	0.275
68	0.000	0.150	0.275	0.275	0.275	0.275	0.275
69	0.000	0.150	0.275	0.275	0.275	0.275	0.275
70	0.000	0.150	0.275	0.275	0.275	0.275	0.275
71	0.000	0.150	0.275	0.275	0.275	0.275	0.275
72	0.000	0.150	0.275	0.275	0.275	0.275	0.275
73	0.000	0.150	0.275	0.275	0.275	0.275	0.275
74	0.000	0.150	0.275	0.275	0.275	0.275	0.275
75	0.000	0.150	0.275	0.275	0.275	0.275	0.275
76	0.000	0.150	0.275	0.275	0.275	0.275	0.275
77	0.000	0.150	0.275	0.275	0.275	0.275	0.275
78	0.000	0.150	0.275	0.275	0.275	0.275	0.275
79	0.000	0.150	0.275	0.275	0.275	0.275	0.275
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 2 and the Hybrid Plan.

Top 10 Non-Hazardous Duty Retirement Rates, Plan 2/Hybrid Male																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080
51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
60	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
61	0.000	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
62	0.000	0.200	0.150	0.150	0.150	0.200	0.200	0.200	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
63	0.000	0.100	0.150	0.150	0.100	0.100	0.100	0.100	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
64	0.000	0.100	0.130	0.100	0.100	0.100	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130	0.130
65	0.000	0.250	0.250	0.250	0.250	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210
66	0.000	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
67	0.000	0.150	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
68	0.000	0.150	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
69	0.000	0.150	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
70	0.000	0.150	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
71	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
72	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
73	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
74	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
75	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
76	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
77	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
78	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
79	0.000	0.300	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170	0.170
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Top 10 Non-Hazardous Duty Retirement Rates, Plan 2/Hybrid Female																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08
52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08
53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08
54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08
56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
60	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
61	0.00	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
62	0.00	0.20	0.15	0.15	0.15	0.20	0.20	0.20	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
63	0.00	0.10	0.15	0.15	0.10	0.10	0.10	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
64	0.00	0.10	0.13	0.10	0.10	0.10	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
65	0.00	0.25	0.25	0.25	0.25	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
66	0.00	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
67	0.00	0.15	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
68	0.00	0.15	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
69	0.00	0.15	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
70	0.00	0.15	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
71	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
72	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
73	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
74	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
75	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
76	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
77	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
78	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
79	0.00	0.30	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
≥80	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 20% of disability cases are assumed to be service related.

Top 10 Non-Hazardous Duty Disability Rates		
Age	Male	Female
20	0.00005	0.00001
25	0.00005	0.00005
30	0.00007	0.00023
35	0.00050	0.00062
40	0.00139	0.00134
45	0.00252	0.00229
50	0.00384	0.00330
55	0.00591	0.00442
60	0.00808	0.00530
65	0.00942	0.00546
70	0.01022	0.00546



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**TERMINATION RATES:** The following are sample withdrawal rates based on age and years of service (for causes other than death, disability, or retirement).

Top 10 Non-Hazardous Duty Termination Rates, Male											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	≥10
20	0.32543	0.31042	0.30208	0.30072	0.30427	0.30827	0.30643	0.29813	0.27932	0.24444	0.18652
25	0.28989	0.27432	0.26526	0.26242	0.26375	0.26558	0.26297	0.25458	0.23734	0.20701	0.15866
30	0.24454	0.22694	0.21572	0.20997	0.20770	0.20620	0.20225	0.19376	0.17891	0.15529	0.12067
35	0.21415	0.19378	0.17963	0.17076	0.16538	0.16121	0.15615	0.14808	0.13573	0.11801	0.09397
40	0.19294	0.16945	0.15202	0.13993	0.13167	0.12522	0.11929	0.11204	0.10236	0.09015	0.05781
45	0.17894	0.15267	0.13230	0.11737	0.10675	0.09865	0.09232	0.08627	0.07933	0.07192	0.05296
50	0.16934	0.14141	0.11910	0.10223	0.09004	0.08133	0.07525	0.07068	0.06652	0.06290	0.04605
55	0.16167	0.13384	0.11115	0.09363	0.08092	0.07311	0.06800	0.06512	0.06387	0.06264	0.04605
60	0.15428	0.12874	0.10758	0.09097	0.07895	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.14654	0.12546	0.10779	0.09372	0.08367	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.13705	0.12384	0.11269	0.10367	0.09758	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Top 10 Non-Hazardous Duty Termination Rates, Female											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	≥10
20	0.29606	0.27600	0.26872	0.26828	0.26794	0.26068	0.25184	0.24003	0.22638	0.21127	0.19613
25	0.26948	0.24864	0.23870	0.23584	0.23500	0.23043	0.22383	0.21351	0.19968	0.18230	0.16241
30	0.23747	0.21281	0.19801	0.19150	0.18990	0.18876	0.18525	0.17702	0.16297	0.14248	0.11600
35	0.21697	0.18644	0.16712	0.15790	0.15565	0.15609	0.15458	0.14802	0.13451	0.11314	0.08392
40	0.20303	0.16631	0.14281	0.13119	0.12810	0.12896	0.12867	0.12352	0.11116	0.09064	0.06153
45	0.19315	0.15196	0.12534	0.11170	0.10742	0.10776	0.10785	0.10381	0.09325	0.07535	0.04936
50	0.18459	0.14212	0.11414	0.09902	0.09329	0.09247	0.09213	0.08891	0.08086	0.06735	0.04769
55	0.17544	0.13552	0.10836	0.09258	0.08536	0.08303	0.08149	0.07885	0.07414	0.06668	0.05673
60	0.16477	0.13125	0.10723	0.09187	0.08344	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.15252	0.12880	0.11016	0.09645	0.08728	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.13663	0.12821	0.11849	0.10838	0.09910	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** The following total salary increase rates are used. The total salary increase rate consists of an inflation rate of 2.50%, a productivity component of 1.00%, and a variable merit component that is dependent on years of service.

Pay Increase Assumption	
Years of Service	Total Increase (Next Year)
1	5.35%
2	5.35
3	4.75
4	4.45
5	4.45
6	4.45
7	4.35
8	4.25
9	4.00
10	4.00
11-19	3.65
20 or more	3.50





***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**LOCALS – NON-TOP 10, NON-HAZARDOUS DUTY**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted General Employee Rates projected generationally; males set forward 2 years; 105% of rates for females set forward 3 years

b. Post-Retirement:

Pub-2010 Amount Weighted General Healthy Retiree Rates projected generationally; 95% of rates for males set forward 2 years; 95% of rates for females set forward 1 year

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally; 110% of rates for males set forward 3 years; 110% of rates for females set forward 2 years

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted General Contingent Annuitant Rates projected generationally

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is 75% of the MP-2020 rates



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Non-Top 10 Non-Hazardous Duty Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00033	0.00031	0.00348	0.00037	0.00011	0.00011	0.00213	0.00013
25	0.00031	0.00030	0.00353	0.00028	0.00013	0.00010	0.00216	0.00009
30	0.00040	0.00038	0.00452	0.00036	0.00020	0.00015	0.00338	0.00015
35	0.00053	0.00050	0.00611	0.00047	0.00032	0.00024	0.00527	0.00023
40	0.00077	0.00073	0.00917	0.00066	0.00049	0.00038	0.00829	0.00036
45	0.00116	0.00110	0.01476	0.00549	0.00075	0.00058	0.01284	0.00262
50	0.00175	0.00329	0.02113	0.00701	0.00110	0.00221	0.01746	0.00320
55	0.00255	0.00472	0.02591	0.00824	0.00164	0.00286	0.02016	0.00446
60	0.00371	0.00677	0.03064	0.01012	0.00256	0.00395	0.02256	0.00622
65	0.00548	0.01053	0.03876	0.01384	0.00420	0.00648	0.02695	0.00899
70	0.00837	0.01809	0.05059	0.02129	0.00694	0.01132	0.03563	0.01353
75	0.01315	0.03193	0.06982	0.03382	0.01145	0.02006	0.05146	0.02151
80	0.06052	0.05749	0.10185	0.05360	0.05076	0.03598	0.07865	0.03573
85		0.10196	0.14963	0.08743		0.06689	0.12115	0.06316
90		0.16858	0.22647	0.14418		0.12191	0.17199	0.11329

15% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 1.

Non-Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Male with 50/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	>=31
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.060	0.060	0.150	0.150
51	0.000	0.000	0.000	0.125	0.050	0.100	0.080
52	0.000	0.000	0.000	0.125	0.050	0.150	0.100
53	0.000	0.000	0.000	0.100	0.050	0.150	0.100
54	0.000	0.000	0.000	0.100	0.050	0.150	0.110
55	0.000	0.100	0.100	0.100	0.060	0.150	0.110
56	0.000	0.100	0.060	0.060	0.060	0.150	0.100
57	0.000	0.100	0.055	0.055	0.055	0.110	0.100
58	0.000	0.100	0.060	0.060	0.060	0.110	0.100
59	0.000	0.100	0.055	0.055	0.055	0.160	0.100
60	0.000	0.100	0.050	0.050	0.050	0.160	0.120
61	0.000	0.100	0.085	0.085	0.085	0.160	0.160
62	0.000	0.100	0.150	0.150	0.150	0.270	0.220
63	0.000	0.100	0.150	0.150	0.150	0.270	0.180
64	0.000	0.100	0.150	0.150	0.150	0.270	0.180
65	0.000	0.300	0.300	0.300	0.300	0.300	0.300
66	0.000	0.300	0.320	0.320	0.320	0.320	0.320
67	0.000	0.300	0.220	0.220	0.220	0.220	0.220
68	0.000	0.300	0.220	0.220	0.220	0.220	0.220
69	0.000	0.300	0.220	0.220	0.220	0.220	0.220
70	0.000	0.300	0.220	0.220	0.220	0.220	0.220
71	0.000	0.300	0.220	0.220	0.220	0.220	0.220
72	0.000	0.300	0.220	0.220	0.220	0.220	0.220
73	0.000	0.300	0.220	0.220	0.220	0.220	0.220
74	0.000	0.300	0.220	0.220	0.220	0.220	0.220
75	0.000	0.300	0.220	0.220	0.220	0.220	0.220
76	0.000	0.300	0.220	0.220	0.220	0.220	0.220
77	0.000	0.300	0.220	0.220	0.220	0.220	0.220
78	0.000	0.300	0.220	0.220	0.220	0.220	0.220
79	0.000	0.300	0.220	0.220	0.220	0.220	0.220
>=80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Non-Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Female with 50/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.050	0.050	0.100	0.100
51	0.000	0.000	0.000	0.055	0.050	0.100	0.075
52	0.000	0.000	0.000	0.060	0.050	0.100	0.075
53	0.000	0.000	0.000	0.070	0.060	0.120	0.100
54	0.000	0.000	0.000	0.070	0.060	0.120	0.100
55	0.000	0.070	0.070	0.070	0.060	0.120	0.100
56	0.000	0.060	0.055	0.055	0.055	0.100	0.100
57	0.000	0.060	0.055	0.055	0.055	0.100	0.100
58	0.000	0.060	0.055	0.055	0.055	0.100	0.100
59	0.000	0.060	0.055	0.055	0.055	0.100	0.100
60	0.000	0.060	0.065	0.065	0.065	0.150	0.100
61	0.000	0.060	0.095	0.095	0.095	0.200	0.165
62	0.000	0.060	0.145	0.145	0.145	0.200	0.200
63	0.000	0.060	0.145	0.145	0.145	0.200	0.200
64	0.000	0.060	0.145	0.145	0.145	0.350	0.200
65	0.000	0.280	0.280	0.280	0.280	0.280	0.350
66	0.000	0.280	0.280	0.280	0.280	0.280	0.280
67	0.000	0.280	0.220	0.220	0.220	0.220	0.220
68	0.000	0.280	0.220	0.220	0.220	0.220	0.220
69	0.000	0.280	0.220	0.220	0.220	0.220	0.220
70	0.000	0.280	0.220	0.220	0.220	0.220	0.220
71	0.000	0.280	0.170	0.170	0.170	0.170	0.170
72	0.000	0.280	0.170	0.170	0.170	0.170	0.170
73	0.000	0.280	0.200	0.200	0.200	0.200	0.200
74	0.000	0.280	0.200	0.200	0.200	0.200	0.200
75	0.000	0.280	0.200	0.200	0.200	0.200	0.200
76	0.000	0.280	0.200	0.200	0.200	0.200	0.200
77	0.000	0.280	0.200	0.200	0.200	0.200	0.200
78	0.000	0.280	0.200	0.200	0.200	0.200	0.200
79	0.000	0.280	0.200	0.200	0.200	0.200	0.200
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Non-Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Male with 55/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.060	0.060	0.060	0.060
51	0.000	0.000	0.000	0.125	0.050	0.050	0.050
52	0.000	0.000	0.000	0.125	0.050	0.050	0.050
53	0.000	0.000	0.000	0.100	0.050	0.050	0.050
54	0.000	0.000	0.000	0.100	0.050	0.050	0.050
55	0.000	0.100	0.100	0.100	0.060	0.150	0.150
56	0.000	0.100	0.060	0.060	0.060	0.150	0.100
57	0.000	0.100	0.055	0.055	0.055	0.110	0.100
58	0.000	0.100	0.060	0.060	0.060	0.110	0.100
59	0.000	0.100	0.055	0.055	0.055	0.160	0.100
60	0.000	0.100	0.050	0.050	0.050	0.160	0.120
61	0.000	0.100	0.085	0.085	0.085	0.160	0.160
62	0.000	0.100	0.150	0.150	0.150	0.270	0.220
63	0.000	0.100	0.150	0.150	0.150	0.270	0.180
64	0.000	0.100	0.150	0.150	0.150	0.270	0.180
65	0.000	0.300	0.300	0.300	0.300	0.300	0.300
66	0.000	0.300	0.320	0.320	0.320	0.320	0.320
67	0.000	0.300	0.220	0.220	0.220	0.220	0.220
68	0.000	0.300	0.220	0.220	0.220	0.220	0.220
69	0.000	0.300	0.220	0.220	0.220	0.220	0.220
70	0.000	0.300	0.220	0.220	0.220	0.220	0.220
71	0.000	0.300	0.220	0.220	0.220	0.220	0.220
72	0.000	0.300	0.220	0.220	0.220	0.220	0.220
73	0.000	0.300	0.220	0.220	0.220	0.220	0.220
74	0.000	0.300	0.220	0.220	0.220	0.220	0.220
75	0.000	0.300	0.220	0.220	0.220	0.220	0.220
76	0.000	0.300	0.220	0.220	0.220	0.220	0.220
77	0.000	0.300	0.220	0.220	0.220	0.220	0.220
78	0.000	0.300	0.220	0.220	0.220	0.220	0.220
79	0.000	0.300	0.220	0.220	0.220	0.220	0.220
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Non-Top 10 Non-Hazardous Duty Retirement Rates, Plan 1 Female with 55/30 eligibility							
Age	Years of Service						
	0-4	5	6-9	10	11-29	30	≥31
≤49	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.050	0.050	0.050	0.050
51	0.000	0.000	0.000	0.055	0.050	0.050	0.050
52	0.000	0.000	0.000	0.060	0.050	0.050	0.050
53	0.000	0.000	0.000	0.070	0.060	0.060	0.060
54	0.000	0.000	0.000	0.070	0.060	0.060	0.060
55	0.000	0.070	0.070	0.070	0.060	0.120	0.120
56	0.000	0.060	0.055	0.055	0.055	0.100	0.100
57	0.000	0.060	0.055	0.055	0.055	0.100	0.100
58	0.000	0.060	0.055	0.055	0.055	0.100	0.100
59	0.000	0.060	0.055	0.055	0.055	0.100	0.100
60	0.000	0.060	0.065	0.065	0.065	0.150	0.100
61	0.000	0.060	0.095	0.095	0.095	0.200	0.165
62	0.000	0.060	0.145	0.145	0.145	0.200	0.200
63	0.000	0.060	0.145	0.145	0.145	0.200	0.200
64	0.000	0.060	0.145	0.145	0.145	0.350	0.200
65	0.000	0.280	0.280	0.280	0.280	0.280	0.350
66	0.000	0.280	0.280	0.280	0.280	0.280	0.280
67	0.000	0.280	0.220	0.220	0.220	0.220	0.220
68	0.000	0.280	0.220	0.220	0.220	0.220	0.220
69	0.000	0.280	0.220	0.220	0.220	0.220	0.220
70	0.000	0.280	0.220	0.220	0.220	0.220	0.220
71	0.000	0.280	0.170	0.170	0.170	0.170	0.170
72	0.000	0.280	0.170	0.170	0.170	0.170	0.170
73	0.000	0.280	0.200	0.200	0.200	0.200	0.200
74	0.000	0.280	0.200	0.200	0.200	0.200	0.200
75	0.000	0.280	0.200	0.200	0.200	0.200	0.200
76	0.000	0.280	0.200	0.200	0.200	0.200	0.200
77	0.000	0.280	0.200	0.200	0.200	0.200	0.200
78	0.000	0.280	0.200	0.200	0.200	0.200	0.200
79	0.000	0.280	0.200	0.200	0.200	0.200	0.200
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire from Plan 2 and the Hybrid Plan.

Non-Top 10 Non-Hazardous Duty Retirement Rates, Plan 2/Hybrid Male																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080
51	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
60	0.000	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080
61	0.000	0.110	0.090	0.090	0.090	0.090	0.110	0.110	0.110	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
62	0.000	0.150	0.110	0.110	0.110	0.150	0.150	0.150	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
63	0.000	0.150	0.110	0.110	0.150	0.150	0.150	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
64	0.000	0.130	0.140	0.130	0.130	0.130	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140	0.140
65	0.000	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
66	0.000	0.220	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
67	0.000	0.220	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
68	0.000	0.100	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
69	0.000	0.160	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
70	0.000	0.160	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
71	0.000	0.160	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
72	0.000	0.160	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
73	0.000	0.160	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135	0.135
74	0.000	0.160	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
75	0.000	0.160	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
76	0.000	0.160	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
77	0.000	0.160	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
78	0.000	0.160	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
79	0.000	0.160	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
≥80	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Non-Top 10 Non-Hazardous Duty Retirement Rates, Plan 2/Hybrid Female																			
Age	Years of Service																		
	0-4	5	6-24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	≥40
<=49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08
52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08
53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08
54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08
56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
60	0.00	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
61	0.00	0.11	0.09	0.09	0.09	0.09	0.11	0.11	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
62	0.00	0.15	0.11	0.11	0.11	0.15	0.15	0.15	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
63	0.00	0.15	0.11	0.11	0.15	0.15	0.15	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
64	0.00	0.13	0.14	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
65	0.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
66	0.00	0.22	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
67	0.00	0.22	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
68	0.00	0.10	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
69	0.00	0.16	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
70	0.00	0.16	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
71	0.00	0.16	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
72	0.00	0.16	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
73	0.00	0.16	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
74	0.00	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
75	0.00	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
76	0.00	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
77	0.00	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
78	0.00	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
79	0.00	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
≥80	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00





***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 15% of disability cases are assumed to be service related.

Non-Top 10 Non-Hazardous Duty Disability Rates		
Age	Male	Female
20	0.00005	0.00001
25	0.00009	0.00001
30	0.00022	0.00001
35	0.00052	0.00024
40	0.00130	0.00058
45	0.00271	0.00127
50	0.00429	0.00274
55	0.00585	0.00483
60	0.00656	0.00640
65	0.00656	0.00656
70	0.00656	0.00656



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

**TERMINATION RATES:** The following are sample withdrawal rates based on age and years of service (for causes other than death, disability, or retirement).

Non-Top 10 Non-Hazardous Duty Termination Rates, Male											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	>=10
20	0.38626	0.34020	0.30446	0.27976	0.26553	0.25945	0.25319	0.24256	0.22942	0.21542	0.19829
25	0.34582	0.30879	0.27971	0.25872	0.24501	0.23668	0.22856	0.21758	0.20423	0.18923	0.17160
30	0.29499	0.26680	0.24458	0.22769	0.21478	0.20418	0.19421	0.18311	0.16980	0.15370	0.13533
35	0.26103	0.23300	0.21169	0.19604	0.18413	0.17401	0.16467	0.15478	0.14272	0.12727	0.10921
40	0.23608	0.20395	0.18048	0.16444	0.15346	0.14510	0.13781	0.13010	0.12027	0.10694	0.08984
45	0.21691	0.18002	0.15364	0.13656	0.12626	0.11997	0.11521	0.11013	0.10332	0.09373	0.07933
50	0.20077	0.16159	0.13368	0.11597	0.10614	0.10146	0.09880	0.09627	0.09310	0.08885	0.08086
55	0.18678	0.14934	0.12243	0.10520	0.09586	0.09185	0.09042	0.09022	0.09123	0.09336	0.09555
60	0.17555	0.14390	0.12073	0.10548	0.09702	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.16801	0.14540	0.12836	0.11667	0.10985	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.16495	0.15620	0.14895	0.14345	0.13973	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Non-Top 10 Non-Hazardous Duty Termination Rates, Female											
Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	>=10
20	0.35767	0.33669	0.30846	0.27527	0.24526	0.22704	0.22422	0.22176	0.21816	0.21568	0.21293
25	0.32508	0.30131	0.27509	0.24836	0.22591	0.21199	0.20768	0.20326	0.19626	0.18741	0.17582
30	0.28507	0.25605	0.23167	0.21264	0.19928	0.19055	0.18459	0.17765	0.16637	0.14940	0.12629
35	0.25792	0.22474	0.20062	0.18479	0.17509	0.16848	0.16228	0.15456	0.14215	0.12254	0.09510
40	0.23681	0.20100	0.17636	0.16123	0.15230	0.14605	0.14002	0.13263	0.12132	0.10320	0.07675
45	0.21851	0.18237	0.15746	0.14201	0.13248	0.12573	0.11969	0.11310	0.10459	0.09194	0.07283
50	0.20148	0.16715	0.14302	0.12750	0.11742	0.11005	0.10356	0.09770	0.09309	0.08937	0.08493
55	0.18709	0.15590	0.13351	0.11857	0.10862	0.10068	0.09333	0.08825	0.08825	0.08825	0.08825
60	0.17815	0.15052	0.13021	0.11626	0.10712	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
65	0.17656	0.15223	0.13387	0.12121	0.11334	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
70	0.18530	0.16398	0.14753	0.13688	0.13090	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** The following total salary increase rates are used. The total salary increase rate consists of an inflation rate of 2.50%, a productivity component of 1.00%, and a variable merit component that is dependent on years of service.

Pay Increase Assumption	
Years of Service	Total Increase (Next Year)
1	5.35%
2	5.35
3	4.75
4	4.45
5	4.45
6	4.45
7	4.35
8	4.25
9	4.00
10	4.00
11-19	3.65
20 or more	3.50



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**LOCALS – TOP 10, HAZARDOUS DUTY**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted Safety Employee Rates projected generationally; 95% of rates for males; 105% of rates for females set forward 2 years

b. Post-Retirement:

Pub-2010 Amount Weighted Safety Healthy Retiree Rates projected generationally; 110% of rates for males; 105% of rates for females set forward 3 years

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally; 95% of rates for males set back 3 years; 90% of rates for females set back 3 years

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted Safety Contingent Annuitant Rates projected generationally; 110% of rates for males and females set forward 2 years

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is 75% of the MP-2020 rates



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

Top 10 Hazardous Duty Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00039	0.00045	0.00030	0.00044	0.00018	0.00019	0.00011	0.00019
25	0.00035	0.00041	0.00334	0.00043	0.00023	0.00025	0.00175	0.00024
30	0.00039	0.00045	0.00291	0.00047	0.00032	0.00034	0.00176	0.00033
35	0.00045	0.00052	0.00372	0.00055	0.00043	0.00045	0.00276	0.00045
40	0.00056	0.00065	0.00492	0.00074	0.00059	0.00062	0.00431	0.00062
45	0.00078	0.00134	0.00725	0.00656	0.00080	0.00126	0.00679	0.00312
50	0.00114	0.00211	0.01160	0.00822	0.00108	0.00217	0.01050	0.00403
55	0.00166	0.00337	0.01727	0.00976	0.00147	0.00376	0.01428	0.00559
60	0.00251	0.00559	0.02166	0.01243	0.00200	0.00649	0.01650	0.00789
65	0.00390	0.00969	0.02543	0.01791	0.00315	0.01121	0.01846	0.01158
70	0.00728	0.01725	0.03185	0.02818	0.00628	0.01936	0.02205	0.01781
75	0.01360	0.03109	0.04127	0.04466	0.01249	0.03344	0.02915	0.02881
80	0.02541	0.05613	0.05625	0.07148	0.05177	0.05774	0.04210	0.04901
85		0.10049	0.08137	0.11732		0.09971	0.06435	0.08833
90		0.17446	0.11975	0.19311		0.16715	0.09913	0.15347

70% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire.

Top 10 Hazardous Duty Retirement Rates, Male					
Age	Years of Service				
	0-4	5	6-24	25	>=26
<=49	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0650	0.0650	0.2000	0.2000
51	0.0000	0.0650	0.0600	0.2500	0.2000
52	0.0000	0.0650	0.0600	0.2500	0.2000
53	0.0000	0.0650	0.0600	0.2500	0.2400
54	0.0000	0.0650	0.0600	0.2500	0.2400
55	0.0000	0.0650	0.0600	0.2500	0.2400
56	0.0000	0.0650	0.0600	0.2100	0.2000
57	0.0000	0.0650	0.0600	0.2100	0.2000
58	0.0000	0.0650	0.0600	0.2100	0.2000
59	0.0000	0.0650	0.1000	0.2100	0.2000
60	0.0000	0.2100	0.2100	0.2100	0.2300
61	0.0000	0.3750	0.2300	0.2300	0.2300
62	0.0000	0.3750	0.2700	0.2700	0.2700
63	0.0000	0.3750	0.2700	0.2700	0.2700
64	0.0000	0.3750	0.2700	0.2700	0.2700
65	0.0000	0.3750	0.3500	0.3500	0.3500
66	0.0000	0.3750	0.3500	0.3500	0.3500
67	0.0000	0.3750	0.3500	0.3500	0.3500
68	0.0000	0.3750	0.3500	0.3500	0.3500
69	0.0000	0.3750	0.3500	0.3500	0.3500
>=70	0.0000	1.0000	1.0000	1.0000	1.0000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Top 10 Hazardous Duty Retirement Rates, Female					
Age	Years of Service				
	0-4	5	6-24	25	>=26
<=49	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0600	0.0600	0.2500	0.2500
51	0.0000	0.0600	0.0875	0.2500	0.3000
52	0.0000	0.0600	0.0750	0.2500	0.3000
53	0.0000	0.0600	0.0750	0.2500	0.3000
54	0.0000	0.0600	0.0750	0.2500	0.3000
55	0.0000	0.0600	0.0750	0.2500	0.4000
56	0.0000	0.0600	0.1400	0.2500	0.4000
57	0.0000	0.0600	0.1400	0.2500	0.2500
58	0.0000	0.0600	0.1400	0.2500	0.2500
59	0.0000	0.0600	0.1400	0.2500	0.2500
60	0.0000	0.1500	0.1500	0.1500	0.2500
61	0.0000	0.1500	0.1500	0.1500	0.1500
62	0.0000	0.1500	0.1500	0.1500	0.1500
63	0.0000	0.1500	0.1500	0.1500	0.1500
64	0.0000	0.1500	0.3000	0.3000	0.3000
65	0.0000	0.1500	0.3000	0.3000	0.3000
66	0.0000	0.1500	0.3000	0.3000	0.3000
67	0.0000	0.1500	0.3000	0.3000	0.3000
68	0.0000	0.1500	0.3000	0.3000	0.3000
69	0.0000	0.1500	0.3000	0.3000	0.3000
>=70	0.0000	1.0000	1.0000	1.0000	1.0000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 70% of disability cases are assumed to be service related.

Top 10 Hazardous Duty Disability Rates		
Age	Male	Female
20	0.00019	0.00012
25	0.00022	0.00248
30	0.00052	0.00558
35	0.00133	0.00705
40	0.00267	0.00794
45	0.00405	0.00906
50	0.00500	0.01090
55	0.00657	0.01376
60	0.01055	0.01788
65	0.01786	0.02327
70	0.03085	0.03105

**TERMINATION RATES:** The following are sample withdrawal rates based on years of service (for causes other than death, disability, or retirement).

Top 10 Hazardous Duty Termination Rates		
Service	Male	Female
0	0.05500	0.07000
1	0.04000	0.07000
2	0.04000	0.07000
3	0.04000	0.05000
4	0.04000	0.05000
5	0.03000	0.05000
6	0.02500	0.03000
7	0.02500	0.03000
8	0.02500	0.03500
9	0.01500	0.01500
10	0.01000	0.01500
11	0.01000	0.01500
12	0.01000	0.01500
13	0.01000	0.01500
>=14	0.00800	0.01500





***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** The following salary increase rates are used. Inflation rate of 2.50% plus productivity component of 1.00% plus step-rate/promotional component as shown:

Pay Increase Assumption	
Years of Service	Total Increase (Next Year)
1	4.75%
2	4.75
3	4.75
4	4.75
5	4.65
6	4.40
7	4.40
8	4.40
9	4.40
10 - 19	4.00
20 or more	3.50



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**LOCALS – NON-TOP 10, HAZARDOUS DUTY**

**Plan Specific Assumptions and Methods**

**MORTALITY RATES:**

a. Pre-Retirement:

Pub-2010 Amount Weighted Safety Employee Rates projected generationally; 95% of rates for males; 105% of rates for females set forward 2 years

b. Post-Retirement:

Pub-2010 Amount Weighted Safety Healthy Retiree Rates projected generationally; 110% of rates for males; 105% of rates for females set forward 3 years

c. Post-Disablement:

Pub-2010 Amount Weighted General Disabled Rates projected generationally; 95% of rates for males set back 3 years; 90% of rates for females set back 3 years

d. Beneficiaries and Survivors:

Pub-2010 Amount Weighted Safety Contingent Annuitant Rates projected generationally; 110% of rates for males and females set forward 2 years

e. Mortality Improvement Scale:

Rates projected generationally with Modified MP-2020 Improvement Scale that is 75% of the MP-2020 rates



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Non-Top 10 Hazardous Duty Mortality Base Rates								
Age	Male				Female			
	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor	Pre Retirement	Post Retirement	Post Disablement	Beneficiary & Survivor
20	0.00039	0.00045	0.00030	0.00044	0.00018	0.00019	0.00011	0.00019
25	0.00035	0.00041	0.00334	0.00043	0.00023	0.00025	0.00175	0.00024
30	0.00039	0.00045	0.00291	0.00047	0.00032	0.00034	0.00176	0.00033
35	0.00045	0.00052	0.00372	0.00055	0.00043	0.00045	0.00276	0.00045
40	0.00056	0.00065	0.00492	0.00074	0.00059	0.00062	0.00431	0.00062
45	0.00078	0.00134	0.00725	0.00656	0.00080	0.00126	0.00679	0.00312
50	0.00114	0.00211	0.01160	0.00822	0.00108	0.00217	0.01050	0.00403
55	0.00166	0.00337	0.01727	0.00976	0.00147	0.00376	0.01428	0.00559
60	0.00251	0.00559	0.02166	0.01243	0.00200	0.00649	0.01650	0.00789
65	0.00390	0.00969	0.02543	0.01791	0.00315	0.01121	0.01846	0.01158
70	0.00728	0.01725	0.03185	0.02818	0.00628	0.01936	0.02205	0.01781
75	0.01360	0.03109	0.04127	0.04466	0.01249	0.03344	0.02915	0.02881
80	0.02541	0.05613	0.05625	0.07148	0.05177	0.05774	0.04210	0.04901
85		0.10049	0.08137	0.11732		0.09971	0.06435	0.08833
90		0.17446	0.11975	0.19311		0.16715	0.09913	0.15347

45% of pre-retirement deaths are assumed to be service related. Mortality improvement is anticipated with a modified MP-2020 Improvement Scale.



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

**RETIREMENT RATES:** The following rates of retirement are assumed for members eligible to retire.

Non-Top 10 Hazardous Duty Retirement Rates, Male					
Age	Years of Service				
	0-4	5	6-24	25	>=26
<=49	0.000	0.000	0.000	0.000	0.000
50	0.000	0.090	0.090	0.275	0.275
51	0.000	0.070	0.075	0.200	0.200
52	0.000	0.070	0.075	0.200	0.200
53	0.000	0.070	0.075	0.200	0.200
54	0.000	0.070	0.075	0.200	0.200
55	0.000	0.070	0.075	0.200	0.200
56	0.000	0.070	0.075	0.200	0.200
57	0.000	0.070	0.075	0.200	0.200
58	0.000	0.070	0.080	0.200	0.165
59	0.000	0.070	0.120	0.200	0.240
60	0.000	0.150	0.150	0.150	0.240
61	0.000	0.200	0.240	0.240	0.240
62	0.000	0.200	0.275	0.275	0.275
63	0.000	0.200	0.275	0.275	0.275
64	0.000	0.200	0.275	0.275	0.275
65	0.000	0.500	0.275	0.275	0.275
66	0.000	0.500	0.500	0.500	0.500
67	0.000	0.500	0.500	0.500	0.500
68	0.000	0.500	0.500	0.500	0.500
69	0.000	0.500	0.500	0.500	0.500
>=70	0.000	1.000	1.000	1.000	1.000



**Schedule D – Outline of Actuarial Assumptions and Methods (continued)**

Non-Top 10 Hazardous Duty Retirement Rates, Female					
Age	Years of Service				
	0-4	5	6-24	25	≥26
≤49	0.000	0.000	0.000	0.000	0.000
50	0.000	0.060	0.060	0.300	0.300
51	0.000	0.100	0.090	0.200	0.200
52	0.000	0.100	0.090	0.200	0.200
53	0.000	0.100	0.090	0.200	0.200
54	0.000	0.100	0.090	0.200	0.300
55	0.000	0.100	0.090	0.200	0.300
56	0.000	0.100	0.120	0.200	0.300
57	0.000	0.100	0.120	0.200	0.250
58	0.000	0.100	0.120	0.200	0.250
59	0.000	0.100	0.120	0.200	0.250
60	0.000	0.150	0.150	0.150	0.250
61	0.000	0.150	0.250	0.250	0.250
62	0.000	0.150	0.250	0.250	0.250
63	0.000	0.150	0.250	0.250	0.250
64	0.000	0.150	0.250	0.250	0.250
65	0.000	0.150	0.400	0.400	0.400
66	0.000	0.150	0.400	0.400	0.400
67	0.000	0.150	0.400	0.400	0.400
68	0.000	0.150	0.400	0.400	0.400
69	0.000	0.150	0.400	0.400	0.400
≥70	0.000	1.000	1.000	1.000	1.000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**DISABILITY RATES:** As shown below for selected ages. 45% of disability cases are assumed to be service related.

Non-Top 10 Hazardous Duty Disability Rates		
Age	Male	Female
20	0.00001	0.00005
25	0.00016	0.00067
30	0.00058	0.00157
35	0.00121	0.00189
40	0.00218	0.00201
45	0.00330	0.00244
50	0.00416	0.00413
55	0.00496	0.00831
60	0.00575	0.01605
65	0.00630	0.02747
70	0.00659	0.04509



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**TERMINATION RATES:** The following are sample withdrawal rates based on years of service (for causes other than death, disability, or retirement).

Non-Top 10 Hazardous Duty Termination Rates		
Service	Males	Females
0	0.11000	0.20000
1	0.11000	0.15000
2	0.09500	0.10000
3	0.08500	0.08500
4	0.07500	0.07000
5	0.06500	0.07000
6	0.06500	0.07000
7	0.04000	0.07000
8	0.04000	0.07000
9	0.04000	0.06000
10	0.02500	0.03500
11	0.02500	0.03500
12	0.02500	0.03500
13	0.02500	0.03500
14	0.02500	0.03500
15	0.02000	0.03500
>=16	0.02000	0.02000



***Schedule D – Outline of Actuarial Assumptions and Methods (continued)***

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**SALARY INCREASE RATES:** The following salary increase rates are used. Inflation rate of 2.50% plus productivity component of 1.00% plus step-rate/promotional component as shown:

Pay Increase Assumption	
Years of Service	Total Increase (Next Year)
1	4.75%
2	4.75
3	4.75
4	4.75
5	4.65
6	4.40
7	4.40
8	4.40
9	4.40
10 - 19	4.00
20 or more	3.50





## ***Schedule E – Actuarial Cost Method***

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The valuation is prepared on the projected benefit basis, which is used to determine the present value of each member's expected benefit payable upon death after retirement or disability. The calculations are based on the member's age, years of service, gender, and an assumed future interest earnings rate (currently 6.75%). The calculations consider the probability of a member's death or termination of employment prior to becoming eligible for a benefit and the probability of the member terminating with a service or disability benefit. The present value of the expected benefits payable to active members is added to the present value of the expected future payments to current benefit recipients to obtain the present value of all expected benefits payable to the present group of members.

The employer contributions required to support the benefits of each OPEB Plan are determined following a level funding approach and consist of a normal contribution and an accrued liability contribution.

The normal contribution is determined using the "entry age normal" method (EAN). Under this method, a calculation is made for postemployment benefits to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of the average new member during the entire period of his anticipated covered service, would be required to meet the cost of all benefits payable on a member's behalf. Administrative expenses are included in the normal contribution.

The unfunded accrued liability is determined by subtracting the current assets and the present value of prospective employer normal contributions from the present value of expected benefits to be paid from each OPEB Plan. The accrued liability contribution amortizes the balance of the unfunded accrued liability over a period of years from the valuation date.



*Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes*

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**SUMMARY OF MAIN BENEFIT AND CONTRIBUTION PROVISIONS**

This schedule summarizes the major retirement benefit provisions of VRS included in the valuations. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

**Benefit Provisions which apply to all VRS Plans**

<b>Plan Year:</b>	Twelve-month period ending June 30th.
<b>Administration:</b>	All plans are administered by the Board of Trustees of the Virginia Retirement System.
<b>Plan 1:</b>	Members hired prior to July 1, 2010 and who were vested as of January 1, 2013.
<b>Plan 2:</b>	Members hired on or after July 1, 2010, or members hired prior to July 1, 2010 and who were not vested as of January 1, 2013. Members hired after January 1, 2014 in the State Police Plan, Virginia Law Officers Plan, and Political Subdivision Plan with enhanced hazardous duty benefits are in Plan 2.
<b>Hybrid:</b>	Members hired on or after January 1, 2014 or by member election. There is no Hybrid Plan in the State Police and Virginia Law Officers Plans.
<b>Eligibility:</b>	All full-time, salaried, permanent employees of the Commonwealth of Virginia or of any participating Virginia city, county, town, or political subdivision or of any local Virginia school boards are eligible to become members of VRS. This summary covers the provisions relating to state employees.



## ***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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### **GROUP LIFE INSURANCE PROGRAM**

The Group Life Insurance Program is administered by the Board of Trustees for the Virginia Retirement System (VRS). Contributions received are held in trust. Premiums for active employees are paid to Securian which in turn pays the life insurance proceeds to the beneficiaries. Payments for postemployment benefits are made by Securian and reimbursed by the Trust. The Board sets administrative policy and determines the allocation of the assets held for investment.

The following persons are eligible to participate in the Group Life Insurance Program: Teachers, State Employees, State Police (SPORS), Judicial Employees (JRS), Virginia Law Officers (VaLORS) and those VRS members receiving long-term disability benefits from the Virginia Sickness and Disability Program (VSDP), the Virginia Local Disability Program (VLDP), or, if the employer opted-out of VLDP during the election period, a comparable plan. In addition, local political subdivisions may elect coverage. Substantially all local units covered by VRS have elected coverage in the Group Life Insurance Program, as have other political subdivisions not providing VRS pension benefits. Also, certain members of the Optional Retirement Plan (ORP) have life insurance coverage. Although certain members who were employed at the time of initial coverage under the Group Life Insurance Program may decline coverage, substantially all full-time, permanent employees participate.

Each active member is entitled to a death benefit from this plan equal to two times the member's annual rate of compensation, rounded up to the next higher multiple of \$1,000. This benefit is provided for by the purchase of a group term life insurance contract from an insurance company. Active members may also be covered by Accidental Death and Dismemberment insurance, and they may elect additional amounts of insurance. These benefits are excluded from this valuation.

Each service retiree will be entitled to a death benefit from this plan equal to the amount in effect immediately before his/her termination or retirement, reduced by 25% on January 1 of the first full year following the date the employee is separated from service and each year thereafter. In no event will the death benefit be less than 25% of the amount in effect at the date of termination or retirement or \$8,000 for members who retire with at least 30 years of creditable service, effective as of 2015 (the \$8,000 is increased by the same percentage as any annual post-retirement supplement for retirees, as calculated for employees hired on or after July 1, 2010).

Each disabled member, including those receiving benefits from VSDP or VLDP, will be entitled to a death benefit from this plan, similar to the service retiree benefit, except the 25% per year reduction does not begin until the member reaches Normal Retirement Age, or the retirement date, if later. Members participating in VLDP (or a comparable plan) and State, VaLORS, and SPORS members participating in VSDP and hired on or after July 1, 2009 need at least one year of service before the member is eligible for a non-service related life insurance benefit from the Plan. The postemployment death benefit is paid for by an addition to the contribution required to provide the active member benefit. While the active member portion of the contribution is used to purchase group term life insurance from an insurance company, the postemployment portion of the contribution is held in a trust until required to pay benefits. The postemployment contribution is actuarially determined by this valuation.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation  
Purposes (continued)***

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**HEALTH INSURANCE CREDIT PROGRAM**

If an eligible employee has worked for more than one employer in VRS, for the purpose of this valuation, their most current (or last) employer providing HIC benefits assumes full liability for that employee.

**STATE EMPLOYEES  
(State, SPORS, JRS, VaLORS, ORP, and UVA)**

The Commonwealth shall provide a credit toward the cost of health insurance coverage for any former state employee who retired under the Virginia Retirement System (State), State Police Officers' Retirement System (SPORS), Judicial Retirement System (JRS), or Virginia Law Officers' Retirement System (VaLORS) and who rendered at least 15 years of total creditable service under the Retirement System or rendered service as a temporary employee of the General Assembly in 1972 and became a member of the retirement system from 1972 to 1985 immediately following such temporary service. The amount of each monthly health insurance credit shall be \$4 per year of creditable service, which shall be credited monthly to any retired employee participating in the Health Insurance Credit Program. However, such credit shall not exceed a beneficiary's qualified medical expenses.

An employee who retired under an Optional Retirement Plan (ORP) or the University of Virginia (UVA) may qualify for the health insurance credit if the retiree has at least 15 years of coverage under the ORP, UVA, or a combination of VRS service credit and ORP or UVA coverage equal to at least 15 years.

Disabled State retirees and Virginia Sickness and Disability Program (VSDP) beneficiaries shall receive a maximum monthly credit, which is the greater of (i) \$120, (ii) \$4 per year for each year of creditable service at the time of disability retirement, or (iii) \$4 per year for each year of creditable service at the time of eligibility for postemployment disability benefits. State, VaLORS, and SPORS employees participating in VSDP who receive long-term disability benefits from VSDP shall receive a monthly credit of \$120, or \$4 per year of creditable service at the time of disability, whichever is greater. Those employees participating in VSDP and hired on or after July 1, 2009 are required to earn one year of service to be eligible for the non-service related Health Insurance Credit disability benefit.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**TEACHERS**

A member who retired under the Virginia Retirement System and who rendered at least 15 years of total creditable service under VRS shall receive a health insurance credit to his monthly retirement allowance, which shall be applied to reduce the retired member's health insurance premium cost. The amount of each monthly health insurance credit shall be \$4 for each full year of the retired member's creditable service. However, such credit shall not exceed a beneficiary's qualified medical expenses.

Disabled Teacher retirees and Virginia Local Disability Program (VLDP) beneficiaries (or, if the employer opted-out of VLDP during the election period, a comparable plan) shall receive a monthly health insurance credit of \$4 multiplied by the lesser of (i) twice the amount of his creditable service or (ii) the amount of creditable service he would have completed at age 60 if he had remained in service to that age. Eligibility for the credit shall be determined in a manner prescribed by the Virginia Retirement System. Those employees participating in VLDP (or, if the employer opted-out of VLDP during the election period, a comparable plan) and hired on or after July 1, 2009 are required to earn one year of service to be eligible for the non-service related Health Insurance Credit disability benefit.

**POLITICAL SUBDIVISIONS**

Political subdivisions participating in the Virginia Retirement System (VRS) may elect to provide a credit toward the cost of health insurance coverage for any former employee who retired under VRS with at least 15 years of total creditable service. The amount of each monthly health insurance credit shall be \$1.50 per year of creditable service, which amount shall be paid monthly to any retired employee participating in the Health Insurance Credit Program. A maximum monthly benefit of \$45 applies to non-school division retirees. However, such credit shall not exceed the health insurance premium for retiree.

Disabled retirees are eligible to receive a maximum monthly credit of \$45.

In addition to the above mentioned health insurance credit, some localities chose to provide an additional health insurance credit of \$1 per month for each full year of the retired member's creditable service, not to exceed a maximum monthly credit of \$30. This additional benefit is available for retired constitutional officers, employees of constitutional officers, general registrars, employees of general registrars, and local social service employees.



## ***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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### **SPECIAL COVERAGE GROUPS**

A local officer, as defined in the Code of Virginia §51.1-124.3, retired under the Virginia Retirement System (VRS) who rendered at least 15 years of total creditable service under VRS shall receive a monthly health insurance credit of \$1.50 per year of creditable service, not to exceed a maximum monthly credit of \$45. However, such credit shall not exceed the health insurance premium for the retiree.

Disabled retirees are eligible to receive a maximum monthly credit of \$45.

### **VIRGINIA SICKNESS AND DISABILITY PROGRAM**

The following employees are eligible for VSDP benefits: full-time and part-time salaried state employees who are active members of the Virginia Retirement System (State), active members of the State Police Officers' Retirement System (SPORS), and active members of the Virginia Law Officers' Retirement System (VaLORS). Newly hired or appointed faculty of state universities of higher education in teaching, research or administrative positions who elect VRS as their retirement plan, may elect coverage under VSDP or any disability plan offered by the institution. If the institution does not offer an alternative disability plan, the faculty member is automatically covered under VSDP. Any eligible employee hired on or after July 1, 2009, shall not be eligible to receive VSDP long-term disability (LTD) benefits for non-work related disabilities prior to the completion of one continuous year of employment.

LTD benefits provide income replacement for members who become disabled and are unable to work for an extended period of time. LTD benefits begin at the expiration of the maximum period of short-term disability. While on long-term disability, members continue to accrue service as a VRS-covered member. LTD recipients are not considered employees of the Commonwealth of Virginia while they are on long-term disability.

Upon attaining the normal retirement age while on LTD, a member is required to retire. However, if the member becomes disabled within five years of the normal retirement age, they will be eligible, for up to five years, to receive VSDP LTD benefits, provided the member remains medically eligible. Once such member receives VSDP LTD benefits for five years, the member must retire.

Members are eligible to receive LTD benefits while working. Long-term disability-working status is in effect if members are able to work at least 20 hours a week, but are restricted from performing the full duties of their job or working a regular schedule. A member must have returned to work with modified duties while on short-term disability to be eligible for long-term disability-working status. The benefit will be adjusted by income or wages a member earns. During the first six months of long-term disability-working, the benefit amount will be adjusted by 60 percent of income or wages earned from employment. After the first six months of long-term disability-working, the benefit amount will be adjusted by 70 percent of income or wages earned from employment.



## ***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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LTD benefits provide members with an income replacement of 60 percent of a member's pre-disability income, or 80 percent for a catastrophic condition. For valuation purposes, a 2.50% Cost of Living Adjustment (COLA) is assumed for participating Plan 1 members of State, SPORS and VaLORS. For participating Plan 2 and Hybrid Plan members of State, SPORS, and VaLORS, a 2.25% COLA is assumed for the purpose of this valuation. LTD recipients are also eligible for benefits under the Health Insurance Credit Program (HIC) and are eligible for benefits under the Group Life Insurance Program (GLI). The liability associated with HIC and GLI for LTD recipients is not included as a VSDP liability, and is valued under the actuarial valuation of the HIC and GLI plans.

The LTD benefit is adjusted by any payments received as a result of the same disability from wages and salary from employment. Wages and salary include income reported on W-2 forms and income from self-employment. During the first six months on long-term disability, the amount of the adjustment depends on the income replacement level under VSDP.

LTD benefits end if the member: is able to perform the full duties of their job without restrictions, leaves covered employment and takes a refund of their member contributions and interest in their member contribution account, applies for service retirement or reaches normal retirement age, or the member does not cooperate or comply with the requirements of VSDP.

The purpose of the long-term care (LTC) benefit under VSDP is to provide members financial assistance towards long-term care services needed as a result of a catastrophic illness, injury or aging. Specifically, the LTC benefit under VSDP provides a \$96 per day indemnity benefit to reimburse qualified nursing home and assisted living costs. Additional LTC benefits are provided for qualified home health care services (50% of the nursing home daily benefit amount), and informal care (25% of the nursing home daily benefit amount). LTC benefits are paid after a 90-day elimination period following a member's certification to be unable to perform two of six activities of daily living or having a severe cognitive impairment. LTC benefits are tax qualified under the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

The LTC benefit has a lifetime maximum benefit of \$70,080 based upon a two-year maximum coverage period with a \$96 daily benefit amount (DBA) paid for nursing home care. At VRS' discretion, the DBA may be increased for inflation every five years in the amount of 5%, compounded annually since the previous increase. Since the LTC benefit's inception, VRS has elected to increase the DBA once (December of 2007). As such, the valuation does not include a provision for increases to the DBA. If the LTC benefit policy is to provide increases at regular intervals, the resulting liability will be materially greater than the results presented (i.e., inflation increases are not assumed to be pre-funded).

While actively employed or receiving LTD benefits, a member receives coverage in the amount currently in place for the actively employed group. Upon termination of employment, a member has the option to port the amount of current coverage for the actively employed group by paying a premium based upon the member's age at entry into VSDP.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**VIRGINIA LOCAL DISABILITY PROGRAM**

The VLDP provides disability benefits for those Hybrid Plan members of Teachers and Political Subdivisions (excluding members with enhanced hazardous duty coverage) that elect to participate in VLDP.

Long-term disability (LTD) benefits provide income replacement for members who become disabled and are unable to work for an extended period of time. LTD benefits begin at the expiration of the maximum period of short-term disability. While on long-term disability, members continue to accrue service as a VRS-covered member. LTD recipients are not considered employees of their associated employer group while they are on long-term disability.

In addition to an income replacement benefit, disabled members participating in the Hybrid Plan may be eligible to receive a one percent employer contribution to their defined contribution account. To be eligible for the one percent mandatory employer contribution, a Hybrid Plan member must be permanently and totally disabled as defined in §22(e)(3) of the Internal Revenue Code (Social Security Definition of Disability).

Upon attaining the normal retirement age while on LTD, a member is required to retire. However, if the member becomes approved for supplemental disability benefits on or after age 60 they will be eligible to receive VLDP LTD benefits, provided the member remains medically eligible, based on the chart below:

<b>Ages Approved for Supplemental Disability Benefits</b>	<b>Supplemental Disability Benefit Eligibility Period*</b>
60 – 64	5 Years
65 – 68	To Age 70
69 and Older	1 Year

\* Eligibility period includes short-term disability and long-term disability

Members are eligible to receive LTD benefits while working. Long-term disability-working status is in effect if members are able to work at least 20 hours a week, but are restricted from performing the full duties of their job or working a regular schedule. A member must have returned to work with modified duties while on short-term disability to be eligible for long-term disability-working status. The benefit will be adjusted by income or wages a member earns. During the first six months of long-term disability-working, the benefit amount will be adjusted by 60 percent of income or wages earned from employment. After the first six months of long-term disability-working, the benefit amount will be adjusted by 70 percent of income or wages earned from employment.





## ***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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LTD benefits provide members with an income replacement of 60 percent of a member's pre-disability income, or 80 percent for a catastrophic condition. LTD recipients are also eligible for benefits under the Health Insurance Credit Program (HIC) and are eligible for benefits under the Group Life Insurance Program (GLI). The liability associated with HIC and GLI for LTD recipients is not included as a VLDP liability, and is valued under the actuarial valuation of the HIC and GLI plans.

The LTD benefit is adjusted by any payments received as a result of the same disability from wages and salary from employment. Wages and salary include income reported on W-2 forms and income from self-employment. During the first six months on long-term disability, the amount of the adjustment depends on the income replacement level under VLDP.

LTD benefits end if the member: is able to perform the full duties of their job without restrictions, leaves covered employment and takes a refund of their member contributions and interest in their member contribution account, applies for service retirement or reaches normal retirement age, or the member does not cooperate or comply with the requirements of VLDP.

The purpose of the long-term care (LTC) benefit under VLDP is to provide members financial assistance towards long-term care services needed as a result of a catastrophic illness, injury or aging. Specifically, the LTC benefit under VLDP provides a \$96 per day indemnity benefit to reimburse qualified nursing home and assisted living costs. Additional LTC benefits are provided for qualified home health care services (50% of the nursing home daily benefit amount), and informal care (25% of the nursing home daily benefit amount). LTC benefits are paid after a 90-day elimination period following a member's certification to be unable to perform two of six activities of daily living or having a severe cognitive impairment. LTC benefits are tax qualified under the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

The LTC benefit has a lifetime maximum benefit of \$70,080 based upon a two-year maximum coverage period with a \$96 daily benefit amount (DBA) paid for nursing home care. At VRS' discretion, the DBA may be increased for inflation every five years in the amount of 5%, compounded annually since the previous increase. Since the LTC benefit's inception, VRS has elected to increase the DBA once (December of 2007). As such, the valuation does not include a provision for increases to the DBA. If the LTC benefit policy is to provide increases at regular intervals, the resulting liability will be materially greater than the results presented (i.e., inflation increases are not assumed to be pre-funded).

While actively employed or receiving LTD benefits, a member receives coverage in the amount currently in place for the actively employed group. Upon termination of employment, a member has the option to port the amount of current coverage for the actively employed group by paying a premium based upon the member's age at entry into VLDP.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**STATE EMPLOYEES**  
**Plan Specific Benefit Provisions**

**Normal Retirement Eligibility:**

- Plan 1: A member may retire with unreduced pension benefits upon Normal Retirement on or after age 65 with credit for five years of service.
- Plan 2 and Hybrid: A member may retire with unreduced pension benefits upon Normal Retirement once they attain their normal Social Security retirement age and have at least five years of service.

**Early Retirement Eligibility:**

- Plan 1: A member may retire early with unreduced pension benefits after reaching age 50 with at least 30 years of service credit. A member may retire early with reduced pension benefits after reaching age 50 with at least ten years of service credit, or age 55 with credit for at least five years of service.
- Plan 2 and Hybrid: A member may retire early with unreduced pension benefits upon the sum of their age and their service being 90 (Rule of 90). A member may retire early with reduced pension benefits after reaching age 60 with at least five years of service credit.

**Disability Retirement Eligibility**  
**– Non-VSDP:**

A Plan 1 member hired prior to January 1, 1999 and who has declined VSDP coverage is eligible for disability retirement benefits from the first day of employment.

**Disability Retirement Eligibility**  
**– VSDP:**

A Plan 1 member hired prior to January 1, 1999 and who has elected VSDP coverage or any member hired on or after January 1, 1999. Applicable members hired prior to July 1, 2009 are eligible from the first day of employment for work related and non-work related VSDP disability benefits. Applicable members hired on or after July 1, 2009 are eligible from the first day of employment for work-related VSDP disability benefits, but must have a minimum of one year of service to be eligible for non-work related VSDP disability benefits.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**TEACHERS**  
**Plan Specific Benefit Provisions**

**Normal Retirement Eligibility:**

- Plan 1: A member may retire with unreduced pension benefits upon Normal Retirement on or after age 65 with credit for five years of service.
- Plan 2 and Hybrid: A member may retire with unreduced pension benefits upon Normal Retirement once they attain their normal Social Security retirement age and have at least five years of service.

**Early Retirement Eligibility:**

- Plan 1: A member may retire early with unreduced pension benefits after reaching age 50 with at least 30 years of service credit. A member may retire early with reduced pension benefits after reaching age 50 with at least ten years of service credit, or age 55 with credit for at least five years of service.
- Plan 2 and Hybrid: A member may retire early with unreduced pension benefits upon the sum of their age and their service being 90 (Rule of 90). A member may retire early with reduced pension benefits after reaching age 60 with at least five years of service credit.

**Disability Retirement Eligibility**

- Non-VLDP (Plan 1 and Plan 2):** A member is eligible from the first day of employment.

**Disability Retirement Eligibility**

- VLDP (Hybrid Plan):** Hybrid Plan members are eligible from the first day of employment for work-related VLDP disability benefits (or, if the employer opted-out of VLDP during the election period, a comparable plan), but must have a minimum of one year of service to be eligible for non-work related VLDP disability benefits.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**STATE POLICE**  
**Plan Specific Benefit Provisions**

**Normal Retirement Eligibility:** A member may retire with an unreduced pension benefit upon Normal Retirement on or after age 60 with credit for five years of service.

**Early Retirement Eligibility:** A member may retire early with unreduced pension benefits after reaching age 50 with at least 25 years of service credit. A member may retire early with reduced pension benefits after reaching age 50 with at least five years of service credit.

**Disability Retirement Eligibility – Non-VSDP:** A member hired prior to 1/1/1999 and who has declined VSDP coverage is eligible for disability benefits from the first day of employment.

**Disability Retirement Eligibility – VSDP:** A Plan 1 member hired prior to January 1, 1999 and who has elected VSDP coverage or any member hired on or after January 1, 1999. Applicable members hired prior to July 1, 2009 are eligible from the first day of employment for work related and non-work related VSDP disability benefits. Applicable members hired on or after July 1, 2009 are eligible from the first day of employment for work-related VSDP disability benefits, but must have a minimum of one year of service to be eligible for non-work related VSDP disability benefits.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**JUDICIAL**  
**Plan Specific Benefit Provisions**

**Service:**

Plan 1: Employees receive credit of one year of service multiplied by a weighting factor of 3.5 (2.5 for judges entering JRS on or after January 1, 1995). Any non-judicial VRS service credit is not weighted.

Plan 2 and Hybrid: Employees receive credit of one year of service multiplied by a weighting factor of:

- 1.5 for judges entering JRS before age 45,
- 2.0 for judges entering JRS between ages 45 and 54, or
- 2.5 for judges entering JRS at age 55 or older.

Any non-judicial VRS service credit is not weighted.

**Normal Retirement Eligibility:** A member may retire with unreduced pension benefits upon Normal Retirement on or after age 65 with credit for five years of service, or age 60 with at least 30 years of service credit. Effective June 1, 2017, the mandatory retirement age for judges is age 73.

**Early Retirement Eligibility:** A member may retire early with unreduced pension benefits at age 60 with at least 30 years of service or a member may retire early with reduced pension benefits after reaching age 55 with at least five years of service credit.

**Disability Retirement Eligibility:** A member is eligible for disability retirement benefits from the first day of employment.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**VIRGINIA LAW OFFICERS  
Plan Specific Benefit Provisions**

**Normal Retirement Eligibility:** A member may retire upon Normal Retirement on or after age 60 with credit for five years of service.

**Early Retirement Eligibility:** A member may retire early with unreduced pension benefits after reaching age 50 with at least 25 years of service credit. A member may retire early with reduced pension benefits after reaching age 50 with at least five years of service credit.

**Disability Retirement Eligibility:**  
– **Non-VSDP:** A member hired prior to 1/1/1999 and who has declined VSDP coverage is eligible for disability retirement benefits from the first day of employment.

**Disability Retirement Eligibility:**  
– **VSDP:** A Plan 1 member hired prior to January 1, 1999 and who has elected VSDP coverage or any member hired on or after January 1, 1999. Applicable members hired prior to July 1, 2009 are eligible from the first day of employment for work related and non-work related VSDP disability benefits. Applicable members hired on or after July 1, 2009 are eligible from the first day of employment for work-related VSDP disability benefits, but must have a minimum of one year of service to be eligible for non-work related VSDP disability benefits.



***Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)***

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**POLITICAL SUBDIVISIONS**  
**Locals1 – General**  
**Plan Specific Benefit Provisions**

**Normal Retirement Eligibility:**

Plan 1: A member may retire with unreduced pension benefits upon Normal Retirement on or after age 65 with credit for five years of service.

Plan 2 and Hybrid: A member may retire with unreduced pension benefits upon Normal Retirement once they attain their normal Social Security retirement age and have at least five years of service.

**Early Retirement Eligibility:**

Plan 1: A member may retire early with unreduced pension benefits after reaching age 50 with at least 30 years of service credit. A member may retire early with reduced pension benefits after reaching age 50 with at least ten years of service credit, or age 55 with credit for at least five years of service.

Plan 2 and Hybrid: A member may retire early with unreduced pension benefits upon the sum of their age and their service being 90 (Rule of 90). A member may retire early with reduced pension benefits after reaching age 60 with at least five years of service credit.

**Disability Retirement Eligibility**  
**– (Plan 1 and Plan 2):**

A member is eligible from the first day of employment.

**Disability Retirement Eligibility**  
**– VLDP (Hybrid Plan):**

Hybrid Plan members are eligible from the first day of employment for work-related VLDP disability benefits (or, if the employer opted-out of VLDP during the election period, a comparable plan), but must have a minimum of one year of service to be eligible for non-work related VLDP disability benefits.

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1 Locals includes both the Top 10 Locals group and the Non-Top 10 Locals group.



*Schedule F – Summary of Main Plan Provisions as Interpreted for Valuation Purposes (continued)*

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**POLITICAL SUBDIVISIONS**

**Locals – LEO/Fire**

**Plan Specific Benefit Provisions**

- Normal Retirement Eligibility:** A member may retire with an unreduced pension benefit upon Normal Retirement on or after age 60 with credit for five years of service.
- Early Retirement Eligibility:** A member may retire early with a reduced pension benefit after reaching age 50 with at least five years of service credit.
- Disability Retirement Eligibility:** A member is eligible for disability retirement benefits from the first day of employment.





*Schedule G – Schedule of Active Member Data*

**GROUP LIFE INSURANCE PROGRAM  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	3,888	5,107	46							9,041
25 - 29	4,551	21,118	5,015	22						30,706
30 - 34	3,340	15,569	16,672	3,169	56					38,806
35 - 39	2,502	11,769	11,619	11,477	3,916	26				41,309
40 - 44	1,977	10,073	9,166	8,216	11,380	2,906	18			43,736
45 - 49	1,764	8,587	8,225	7,145	8,419	9,165	1,914	26		45,245
50 - 54	1,675	8,058	8,188	7,509	8,369	8,372	6,642	1,669	36	50,518
55 - 59	1,389	6,334	6,645	6,654	7,648	6,754	4,649	3,960	1,288	45,321
60 - 64	743	4,118	4,596	4,899	5,992	5,471	3,698	2,805	3,016	35,338
65 - 69	223	1,503	1,913	1,887	2,061	1,929	1,345	1,084	1,668	13,613
70 & Up	109	630	730	748	790	658	424	401	782	5,272
<b>Totals</b>	22,161	92,866	72,815	51,726	48,631	35,281	18,690	9,945	6,790	358,905



**Schedule G – Schedule of Active Member Data (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
STATE EMPLOYEES  
(State, SPORS, JRS, VaLORS, ORP, and UVA)  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	1,484	1,288	15							2,787
25 - 29	1,848	5,320	1,013	3						8,184
30 - 34	1,503	5,472	3,672	620	13					11,280
35 - 39	1,109	4,530	3,849	2,315	761	13				12,577
40 - 44	802	3,455	3,329	2,444	2,099	621	9			12,759
45 - 49	649	2,643	2,614	2,378	2,160	1,829	442	10		12,725
50 - 54	606	2,461	2,412	2,221	2,446	2,161	1,443	500	16	14,266
55 - 59	462	1,993	2,087	1,945	2,091	2,104	1,537	1,464	564	14,247
60 - 64	256	1,256	1,536	1,563	1,700	1,724	1,330	1,348	1,421	12,134
65 - 69	65	443	657	687	731	692	573	603	974	5,425
70 & Up	26	121	185	240	271	293	210	241	557	2,144
<b>Totals</b>	<b>8,810</b>	<b>28,982</b>	<b>21,369</b>	<b>14,416</b>	<b>12,272</b>	<b>9,437</b>	<b>5,544</b>	<b>4,166</b>	<b>3,532</b>	<b>108,528</b>



*Schedule G – Schedule of Active Member Data (continued)*

**HEALTH INSURANCE CREDIT PROGRAM  
TEACHERS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	878	1,947	5							2,830
25 - 29	1,100	10,348	2,608	4						14,060
30 - 34	658	5,709	8,937	1,535	2					16,841
35 - 39	550	4,101	4,938	6,394	1,968	4				17,955
40 - 44	495	3,844	3,701	3,727	6,663	1,402	3			19,835
45 - 49	462	3,522	3,518	3,021	4,089	5,007	882	2		20,503
50 - 54	397	3,035	3,566	3,286	3,815	4,000	3,821	709	6	22,635
55 - 59	302	1,999	2,448	2,761	3,464	2,873	1,996	1,671	377	17,891
60 - 64	150	1,099	1,321	1,721	2,514	2,344	1,457	817	901	12,324
65 - 69	27	357	435	489	681	709	461	272	385	3,816
70 & Up	20	130	133	135	199	161	89	91	145	1,103
<b>Totals</b>	5,039	36,091	31,610	23,073	23,395	16,500	8,709	3,562	1,814	149,793



*Schedule G – Schedule of Active Member Data (continued)*

**HEALTH INSURANCE CREDIT PROGRAM  
POLITICAL SUBDIVISIONS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	496	575	13							1,084
25 - 29	462	1,404	352	1						2,219
30 - 34	391	1,406	993	239	10					3,039
35 - 39	314	1,122	775	651	288	5				3,155
40 - 44	252	1,087	797	586	612	191	2			3,527
45 - 49	271	1,041	832	573	635	465	145	6		3,968
50 - 54	286	1,137	931	807	781	611	347	133	3	5,036
55 - 59	286	1,195	977	845	857	700	348	242	109	5,559
60 - 64	174	942	899	763	813	645	387	259	223	5,105
65 - 69	84	490	482	377	315	228	153	101	86	2,316
70 & Up	45	290	312	260	218	136	70	41	46	1,418
<b>Totals</b>	3,061	10,689	7,363	5,102	4,529	2,981	1,452	782	467	36,426



*Schedule G – Schedule of Active Member Data (continued)*

**HEALTH INSURANCE CREDIT PROGRAM  
CONSTITUTIONAL OFFICERS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	257	399	3							659
25 - 29	246	1,045	331	3						1,625
30 - 34	161	633	786	204	8					1,792
35 - 39	82	393	460	466	196	1				1,598
40 - 44	65	284	299	322	452	168				1,590
45 - 49	50	226	230	231	302	481	131	1		1,652
50 - 54	64	226	238	250	277	354	274	80	1	1,764
55 - 59	43	172	190	199	232	246	144	93	55	1,374
60 - 64	21	118	125	111	154	135	94	44	96	898
65 - 69	4	22	46	45	57	59	35	25	56	349
70 & Up	1	14	5	17	30	11	11	18	27	134
<b>Totals</b>	994	3,532	2,713	1,848	1,708	1,455	689	261	235	13,435



*Schedule G – Schedule of Active Member Data (continued)*

**HEALTH INSURANCE CREDIT PROGRAM  
SOCIAL SERVICE EMPLOYEES  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	90	61								151
25 - 29	100	380	48							528
30 - 34	78	347	230	23						678
35 - 39	63	304	248	136	34	1				786
40 - 44	61	272	205	127	104	27				796
45 - 49	40	219	177	130	120	104	12			802
50 - 54	39	185	188	125	138	118	80	17		890
55 - 59	29	110	109	107	107	99	88	54	12	715
60 - 64	21	63	69	79	77	74	63	49	51	546
65 - 69	2	23	30	24	24	28	21	15	32	199
70 & Up	1	4	10	10	9	6	3	2	11	56
<b>Totals</b>	524	1,968	1,314	761	613	457	267	137	106	6,147



*Schedule G – Schedule of Active Member Data (continued)*

**HEALTH INSURANCE CREDIT PROGRAM  
REGISTRARS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	5	3								8
25 - 29	6	7	4							17
30 - 34	5	12	4	1						22
35 - 39	1	7	5	5	1					19
40 - 44	4	7	7	2	4	1				25
45 - 49	1	5	10	5	4	2	1			28
50 - 54	2	1	8	2	8	3	3	1		28
55 - 59	2	9	9	7	9	5	5		1	47
60 - 64	1	3	8	5	9	8	4	3	2	43
65 - 69	1	3	3	2		2	2	2	1	16
70 & Up		1	2	4		1	1	1	2	12
<b>Totals</b>	28	58	60	33	35	22	16	7	6	265



*Schedule G – Schedule of Active Member Data (continued)*

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	1,130	978	11							2,119
25 - 29	1,397	4,083	736	1						6,217
30 - 34	1,050	3,803	2,891	472	7					8,223
35 - 39	792	2,896	2,697	1,888	629	7				8,909
40 - 44	589	2,404	2,161	1,783	1,704	487	8			9,136
45 - 49	508	1,928	1,877	1,646	1,554	1,291	241	6		9,051
50 - 54	495	1,941	1,812	1,658	1,733	1,419	817	261	11	10,147
55 - 59	394	1,547	1,645	1,590	1,581	1,389	865	728	286	10,025
60 - 64	198	972	1,228	1,284	1,344	1,159	695	664	694	8,238
65 - 69	47	325	491	541	548	444	267	235	425	3,323
70 & Up	20	90	125	163	195	181	79	65	223	1,141
<b>Totals</b>	6,620	20,967	15,674	11,026	9,295	6,377	2,972	1,959	1,639	76,529





*Schedule G – Schedule of Active Member Data (continued)*

**VIRGINIA LOCAL DISABILITY PROGRAM  
TEACHERS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	189	441	2							632
25 - 29	288	2,329	576							3,193
30 - 34	171	1,354	1,142							2,667
35 - 39	158	993	547							1,698
40 - 44	132	1,016	490	3	1	1				1,643
45 - 49	124	958	503	2						1,587
50 - 54	96	841	452	2						1,391
55 - 59	69	477	290	4	1		1			842
60 - 64	43	251	181	1						476
65 - 69	10	79	43							132
70 & Up	5	30	16							51
<b>Totals</b>	1,285	8,769	4,242	12	2	1	1	0	0	14,312



*Schedule G – Schedule of Active Member Data (continued)*

**VIRGINIA LOCAL DISABILITY PROGRAM  
POLITICAL SUBDIVISIONS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2021**

Attained Age	Years of Service to Valuation Date									Total
	Less than 1 year	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 or more	
Under 25	258	217	4							479
25 - 29	331	845	137							1,313
30 - 34	253	952	359	1						1,565
35 - 39	219	823	283	1						1,326
40 - 44	193	744	282	2						1,221
45 - 49	193	714	276	4						1,187
50 - 54	191	708	277	11	1	1		1		1,190
55 - 59	199	698	308	3		1				1,209
60 - 64	108	562	267	5	1	1				944
65 - 69	44	212	122	1						379
70 & Up	25	113	66							204
<b>Totals</b>	2,014	6,588	2,381	28	2	3	0	1	0	11,017