



**Cavanaugh Macdonald**  
CONSULTING, LLC

*The experience and dedication you deserve*



Virginia  
Retirement  
System

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

**Prepared as of June 30, 2016**





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

December 20, 2016

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, 2016:

- 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)

As described above, this report includes information, in aggregate, on the actuarial valuations of the Health Insurance Credit Program for participating Political Subdivisions as of June 30, 2016. 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.

Governmental Accounting Standards Board Statements No. 43 and No. 45 (GASB 43 and 45) require actuarial valuations of retiree health care and other postemployment benefits (OPEB). Cavanaugh Macdonald Consulting, LLC (CMC) is submitting the results of the annual actuarial valuation of the OPEB Plans of VRS prepared as of June 30, 2016. While not verifying the data at source, the actuary performed tests for consistency and reasonability. The asset values used to determine unfunded liabilities are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts using the market value of assets would be different. 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.

Contribution rates for Virginia Retirement System (VRS) employers are established every two years. The actuarially calculated employer contribution rates based on the current valuation are for informational purposes only.

The valuation results indicate that the full employer contribution rates shown in the following table 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 following table, we present the employer contribution rates based on the June 30, 2015 actuarial valuation, the employer contribution rates approved by the General Assembly for fiscal years ending 2017 and 2018, and the employer contribution rates based on the June 30, 2016 actuarial valuation.

OPEB Plan	Fiscal Years 2017 & 2018		2016 Valuation (Informational Only)
	Board Approved	General Assembly Approved	
	2015 Valuation		
GLI*	1.31%	1.31%	1.31%
HIC – State Employees	1.18%	1.18%	1.15%
HIC – Teachers	1.23%	1.11%/1.23%	1.25%
HIC – Participating Political Subdivisions**	0.31%	0.31%	0.32%
HIC – Constitutional Officers	0.36%	0.36%	0.37%
HIC – Social Service Employees	0.42%	0.42%	0.42%
HIC – Registrars	0.41%	0.41%	0.40%
VSDP	0.66%	0.66%	0.63%
VLDP – Teachers	0.31%	0.31%	0.32%
VLDP – Political Subdivisions	0.60%	0.60%	0.62%

\*The contribution rate for GLI includes an adjustment of 0.34% for active group life insurance, see Section I for additional detail.

\*\* Average of individual employer rates.

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 - Political Subdivisions and HIC - Special Coverage Groups). GASB 43 and 45 require the discount rate used to value a plan be based on the likely return of the assets used to pay benefits. As of June 30, 2016, the plan has assets in trust solely to provide benefits to eligible recipients. Therefore, the discount rate has been set at 7.00%. 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 a closed 20 year period, on the assumption that payroll will increase by 3% annually and the amortization period will decrease by one each year until reaching 0 years. In the event that the funding policy produces an effective amortization period of greater than 30 years, a 30 year amortization period is used in accordance with GASB 43 and 45. 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 and meet the parameters for the disclosures under GASB 43 and 45.

The annual required contributions were determined in accordance with the accounting requirements under GASB 43 and 45.

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 in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the OPEB Plans and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of VRS.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: Experience of the OPEB Plans differing from that anticipated by the 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 OPEB Plans' funded status); and changes in the provisions of the OPEB Plans 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.

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

Respectfully submitted,



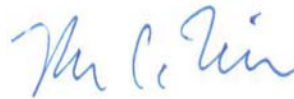
Jose I. Fernandez, ASA, FCA, EA, MAAA  
Principal and Consulting Actuary



Eric H. Gary, FSA, FCA, MAAA  
Principal and Chief Health Actuary



Andrew A. Paine, ASA, FCA, MAAA  
Senior Actuary



Brian C. Nichols, EA, FCA, MAAA  
Senior Actuary

JIF/EHG/AAP/BCN:aap/bcn

## ***Table of Contents***

---

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Summary of Principal Results	1
II	Membership Data	14
III	Assets	25
IV	Comments on Valuation	27
V	Contribution Rates	44
VI	Accounting Information	47
VII	Derivation of Experience Gains and Losses	54
 <u>Schedule</u>		
A	Results of the Valuation and Solvency Test	60
B	Plan Assets	73
C	Unfunded Actuarial Accrued Liability (UAAL) Amortization Schedule	95
D	Outline of Actuarial Assumptions and Methods	104
E	Actuarial Cost Method	189
F	Summary of Main Plan Provisions as Interpreted for Valuation Purposes	190
G	Schedule of Active Member Data	197

## Section I – Summary of Principal Results

1. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized for each OPEB Plan on the following pages:

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

Valuation Date	June 30, 2016	June 30, 2015
Number Active	362,678	360,873
Number Retired or Disabled	<u>173,134</u>	<u>166,148</u>
Total	535,812	527,021
Annual Covered Payroll	\$18,321,880	\$17,813,570
Assets:		
Market Value	\$ 1,224,926	\$ 1,162,617
Actuarial Value	\$ 1,247,564	\$ 1,128,876
Unfunded Actuarial Liability	\$ 1,726,904	\$ 1,700,228
Effective Amortization Period (Years)	27.5	28.6
Insurance Amount		
Active Members	\$36,643,758	\$35,627,140
Retired and Disabled Members	<u>8,232,852</u>	<u>7,803,680</u>
Total	\$44,876,610	\$43,430,820
Annual Required Contribution (ARC) in Dollars:		
Normal Cost	\$ 76,230*	\$ 73,865*
Accrued Liability	<u>99,438</u>	<u>95,846</u>
Total	\$ 175,668	\$ 169,711
ARC as a Percent of Active Payroll**:		
Normal Cost	0.42%	0.42%
Accrued Liability	<u>0.55</u>	<u>0.55</u>
Total	0.97%	0.97%
Adjustment for Active Group Life Insurance	<u>0.34%</u>	<u>0.34%</u>
Total Cost for Plan	1.31%	1.31%
Contribution as ¢ per \$1,000 of Active Insurance Amount		
Active Members	14.1¢	14.1¢
Retired and Disabled Members	<u>40.4</u>	<u>40.4</u>
Total	54.5¢	54.5¢
Discount Rate	7.00%	7.00%

\*Includes total administrative expenses of \$183,000 for 2015 and \$81,000 for 2016.

\*\*Includes timing adjustment factor of 1.0192.

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active	107,840	107,200
Number Retired, Disabled, or Eligible Deferred Vested	<u>46,354</u>	<u>45,003</u>
Total	154,194	152,203
Annual Covered Payroll	\$ 6,319,509	\$ 6,055,429
Assets:		
Market Value	\$ 68,685	\$ 67,433
Actuarial Value	\$ 70,798	\$ 67,164
Unfunded Actuarial Liability	\$ 916,843	\$ 909,362
Effective Amortization Period (Years)	27.0	28.0
Annual Required Contribution (ARC) in Dollars:		
Normal Cost	\$ 18,144**	\$ 18,202**
Accrued Liability	<u>53,344</u>	<u>51,839</u>
Total	\$ 71,488	\$ 70,041
Annual Required Contribution as a Percent of Active Payroll***:		
Normal Cost	0.29%	0.31%
Accrued Liability	<u>0.86</u>	<u>0.87</u>
Total	1.15%	1.18%
Discount Rate	7.00%	7.00%

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

\*\* Includes total administrative expenses of \$195,000 for 2015 and \$171,000 for 2016.

\*\*\* Includes timing adjustment factor of 1.0192.

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active	149,018	147,645
Number Retired, Disabled, or Eligible Deferred Vested	<u>64,327</u>	<u>61,956</u>
Total	213,345	209,601
Annual Covered Payroll	\$ 7,666,824	\$ 7,488,507
Assets:		
Market Value	\$ 82,854	\$ 84,384
Actuarial Value	\$ 86,701	\$ 85,379
Unfunded Actuarial Liability	\$ 1,264,502	\$ 1,240,036
Effective Amortization Period (Years)	26.7	27.8
Annual Required Contribution (ARC) in Dollars:		
Normal Cost	\$ 19,198*	\$ 18,948*
Accrued Liability	<u>74,109</u>	<u>71,021</u>
Total	\$ 93,307	\$ 89,969
Annual Required Contribution as a Percent of Active Payroll**:		
Normal Cost	0.26%	0.26%
Accrued Liability	<u>0.99</u>	<u>0.97</u>
Total	1.25%	1.23%
Discount Rate	7.00%	7.00%

\* Includes total administrative expenses of \$211,000 for 2015 and \$178,000 for 2016.

\*\* Includes timing adjustment factor of 1.0192.



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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active	21,846	21,339
Number Retired, Disabled, or Eligible Deferred Vested	<u>4,890</u>	<u>4,667</u>
Total	26,736	26,006
Annual Covered Payroll	\$ 943,186	\$ 900,390
Assets:		
Market Value	\$ 19,337	\$ 19,348
Actuarial Value	\$ 19,337	\$ 19,348
Unfunded Actuarial Liability	\$ 18,905	\$ 17,564
Effective Amortization Period (Years)	26.3	27.8
Annual Required Contribution (ARC) in Dollars:		
Normal Cost*	\$ 967*	\$ 947*
Accrued Liability	<u>1,117</u>	<u>1,005</u>
Total	\$ 2,084	\$ 1,952
Average Annual Required Contribution as a Percent of Active Payroll**:		
Normal Cost	0.14%	0.14%
Accrued Liability	<u>0.18</u>	<u>0.17</u>
Total	0.32%	0.31%
Discount Rate	7.00%	7.00%

\* Includes total administrative expenses of \$59,000 for 2015 and \$52,000 for 2016.

\*\* Includes timing adjustment factor of 1.0192. These figures are the average of all participating Political Subdivisions.

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active	12,372	12,060
Number Retired, Disabled, or Eligible Deferred Vested	<u>3,245</u>	<u>2,990</u>
Total	15,617	15,050
Annual Covered Payroll	\$ 606,902	\$ 584,797
Assets:		
Market Value	\$ 1,479	\$ 1,120
Actuarial Value	\$ 1,479	\$ 1,120
Unfunded Actuarial Liability	\$ 26,299	\$ 25,580
Effective Amortization Period (Years)	26.4	27.6
Annual Required Contribution (ARC) in Dollars:		
Normal Cost	\$ 627	\$ 600
Accrued Liability	<u>1,550</u>	<u>1,471</u>
Total	\$ 2,177	\$ 2,071
Annual Required Contribution as a Percent of Active Payroll*:		
Normal Cost	0.11%	0.10%
Accrued Liability	<u>0.26</u>	<u>0.26</u>
Total	0.37%	0.36%
Discount Rate	7.00%	7.00%

\* Includes timing adjustment factor of 1.0192.

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active	5,418	5,262
Number Retired, Disabled, or Eligible Deferred Vested	<u>1,894</u>	<u>1,786</u>
Total	7,312	7,048
Annual Covered Payroll	\$ 239,648	\$ 228,472
Assets:		
Market Value	\$ 861	\$ 915
Actuarial Value	\$ 861	\$ 915
Unfunded Actuarial Liability	\$ 12,854	\$ 12,492
Effective Amortization Period (Years)	26.7	27.8
Annual Required Contribution (ARC) in Dollars:		
Normal Cost	\$ 246	\$ 235
Accrued Liability	<u>753</u>	<u>714</u>
Total	\$ 999	\$ 949
Annual Required Contribution as a Percent of Active Payroll*:		
Normal Cost	0.10%	0.10%
Accrued Liability	<u>0.32</u>	<u>0.32</u>
Total	0.42%	0.42%
Discount Rate	7.00%	7.00%

\* Includes timing adjustment factor of 1.0192.

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active	216	213
Number Retired, Disabled, or Eligible Deferred Vested	<u>62</u>	<u>59</u>
Total	278	272
Annual Covered Payroll	\$ 10,274	\$ 9,884
Assets:		
Market Value	\$ 11	\$ 7
Actuarial Value	\$ 11	\$ 7
Unfunded Actuarial Liability	\$ 499	\$ 497
Effective Amortization Period (Years)	26.1	27.1
Annual Required Contribution (ARC) in Dollars:		
Normal Cost	\$ 11	\$ 11
Accrued Liability	<u>30</u>	<u>29</u>
Total	\$ 41	\$ 40
Annual Required Contribution as a Percent of Active Payroll*:		
Normal Cost	0.11%	0.11%
Accrued Liability	<u>0.29</u>	<u>0.30</u>
Total	0.40%	0.41%
Discount Rate	7.00%	7.00%

\* Includes timing adjustment factor of 1.0192.

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active (participating in VSDP)	75,410	74,367
Number Disabled	2,796	2,842
Number Ported	<u>1,724</u>	<u>1,414</u>
Total	79,930	78,623
Annual Covered Payroll*	\$ 3,815,678	\$ 3,627,297
Assets:		
Market Value	\$ 407,826	\$ 414,518
Actuarial Value	\$ 416,248	\$ 398,609
Unfunded Actuarial Accrued Liability	\$ (175,362)	\$ (163,362)
Effective Amortization Period (Years)	24.5	25.9
Annual Required Contribution (ARC) in Dollars:		
Normal Cost**	\$ 34,257	\$ 33,306
Accrued Liability	<u>(10,792)</u>	<u>(9,730)</u>
Total	\$ 23,465	\$ 23,576
ARC as a Percent of Active Payroll***:		
Normal Cost	0.92%	0.93%
Accrued Liability	<u>(0.29)</u>	<u>(0.27)</u>
Total	0.63%	0.66%
Discount Rate	7.00%	7.00%

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

\*\* Includes administrator expenses of \$8,536,000 for 2015 and administrative expenses of \$8,197,000 for 2016.

\*\*\* Includes timing adjustment factor of 1.0192

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

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

<b>Valuation Date – June 30, 2016</b>	<b>State</b>	<b>SPORS</b>	<b>VaLORS</b>	<b>Total</b>
Number Active (participating in VSDP)	65,771	1,384	8,255	75,410
Number Disabled	<u>2,201</u>	<u>14</u>	<u>581</u>	<u>2,796</u>
Total	67,972	1,398	8,836	78,206
Annual Covered Payroll*	\$3,431,516	\$ 72,283	\$ 311,879	\$3,815,678
LTD Assets: (Allocated by liabilities)				
Market Value	\$ 277,435	\$ 5,038	\$ 58,815	\$ 341,288
Actuarial Value	\$ 282,697	\$ 5,134	\$ 59,931	\$ 347,762
LTD Unfunded Actuarial Accrued Liability	\$ (119,143)	\$ (2,164)	\$ (25,258)	\$ (146,565)
Effective Amortization Period (Years)	26.2	23.4	25.7	26.1
LTD Annual Required Contribution (ARC) in Dollars:				
Normal Cost**	\$ 26,594	\$ 355	\$ 4,703	\$ 31,652
Accrued Liability	<u>(7,048)</u>	<u>(137)</u>	<u>(1,511)</u>	<u>(8,696)</u>
Total	\$ 19,546	\$ 218	\$ 3,192	\$ 22,956
LTD Annual Required Contribution as a Percent of Active Payroll***:				
Normal Cost	0.79%	0.50%	1.54%	0.85%
Accrued Liability	<u>(0.21)</u>	<u>(0.19)</u>	<u>(0.49)</u>	<u>(0.23)</u>
Total	0.58%	0.31%	1.05%	0.62%
Discount Rate	7.00%	7.00%	7.00%	7.00%

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

\*\* Includes administrative expenses of \$7,762,000 for 2016.

\*\*\* Includes timing adjustment factor of 1.0192

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)**

<b>Valuation Date – June 30, 2016</b>	<b>State</b>	<b>SPORS</b>	<b>VaLORS</b>	<b>Total</b>
Number Active (participating in VSDP)	65,771	1,384	8,255	75,410
Number Disabled	2,201	14	581	2,796
Number Ported	<u>1,660</u>	<u>2</u>	<u>62</u>	<u>1,724</u>
<b>Total</b>	69,632	1,400	8,898	79,930
Annual Covered Payroll*	\$3,431,516	\$ 72,283	\$ 311,879	\$3,815,678
LTC Assets: (Allocated by liabilities)				
Market Value	\$ 63,404	\$ 348	\$ 2,785	\$ 66,538
Actuarial Value	\$ 65,259	\$ 359	\$ 2,868	\$ 68,486
LTC Unfunded Actuarial Accrued Liability	\$ (27,440)	\$ (151)	\$ (1,206)	\$ (28,797)
Effective Amortization Period (Years)	18.9	21.8	18.9	18.9
LTC Annual Required Contribution (ARC) in Dollars:				
Normal Cost**	\$ 2,418	\$ 19	\$ 169	\$ 2,606
Accrued Liability	<u>(1,998)</u>	<u>(10)</u>	<u>(88)</u>	<u>(2,096)</u>
<b>Total</b>	\$ 420	\$ 9	\$ 81	\$ 510
LTC Annual Required Contribution as a Percent of Active Payroll***:				
Normal Cost	0.07%	0.03%	0.06%	0.07%
Accrued Liability	<u>(0.06)</u>	<u>(0.01)</u>	<u>(0.03)</u>	<u>(0.06)</u>
<b>Total</b>	0.01%	0.02%	0.03%	0.01%
Discount Rate	7.00%	7.00%	7.00%	7.00%

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

\*\* Includes total administrative expenses of \$435,000 for 2016.

\*\*\* Includes timing adjustment factor of 1.0192

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)**

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active (participating in VLDP)	5,001	2,796
Number Disabled	<u>1</u>	<u>0</u>
Total	5,002	2,796
Annual Covered Payroll*	\$ 193,042	\$ 104,087
Assets:		
Market Value	\$ 0	\$ 0
Actuarial Value	\$ 57	\$ 48
Unfunded Actuarial Accrued Liability	\$ 382	\$ 129
Effective Amortization Period (Years)	18.7	20.1
Annual Required Contribution (ARC) in Dollars:		
Normal Cost**	\$ 593	\$ 303
Accrued Liability	<u>28</u>	<u>9</u>
Total	\$ 621	\$ 312
ARC as a Percent of Active Payroll***:		
Normal Cost	0.31%	0.30%
Accrued Liability	<u>0.01</u>	<u>0.01</u>
Total	0.32%	0.31%
Discount Rate	7.00%	7.00%

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

\*\* Includes estimated third party administrator expenses of \$123,000 for 2015 and total administrative expenses of \$227,000 for 2016.

\*\*\* Includes timing adjustment factor of 1.0192



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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
Number Active (participating in VLDP)	4,675	2,917
Number Disabled	<u>0</u>	<u>0</u>
Total	4,675	2,917
Annual Covered Payroll*	\$ 147,729	\$ 88,350
Assets:		
Market Value	\$ 0	\$ 0
Actuarial Value	\$ 52	\$ 30
Unfunded Actuarial Accrued Liability	\$ 326	\$ 106
Effective Amortization Period (Years)	19.8	17.9
Annual Required Contribution (ARC) in Dollars:		
Normal Cost**	\$ 883	\$ 515
Accrued Liability	<u>23</u>	<u>8</u>
Total	\$ 906	\$ 523
ARC as a Percent of Active Payroll***:		
Normal Cost	0.61%	0.59%
Accrued Liability	<u>0.01</u>	<u>0.01</u>
Total	0.62%	0.60%
Discount Rate	7.00%	7.00%

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

\*\* Includes estimated third party administrator expenses of \$156,000 for 2015 and total administrative expenses of \$260,000 for 2016.

\*\*\* Includes timing adjustment factor of 1.0192

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

---

2. Comments on the valuation results as of June 30, 2016 are given in Section IV and further discussion of the contribution levels is provided in Section V.
3. Schedule B shows the development of the actuarial value of assets. Schedule D and Schedule E of this report outline the full set of actuarial assumptions and methods used in the current valuation. The Political Subdivisions have been divided into two groups. Group A 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. Group B is all other Political Subdivisions not included in Group A.
4. 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 14.1¢ per \$1,000 of insurance. This cost is included in Summary of Principal Results to provide a combined contribution rate for deaths in active service and postemployment benefits.
5. Changes to the actuarial assumptions and methods from the last actuarial valuation:
  - For VSDP and VLDP the actuarial cost method used for calculation of LTC actuarial accrued liability and normal cost was changed from Projected Unit Credit (PUC) to Entry Age Normal (EAN).
6. The valuation takes into account the effect of amendments to VRS through the valuation date. The main plan provisions of VRS, as summarized in Schedule F, were taken into account in the current valuation.

## Section II – Membership Data

1. Data regarding the membership of VRS for use as a basis of the valuation were furnished by VRS. The following table shows the number of active members and their annual compensation, as of June 30, 2016, 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, 2016  
(\$ IN THOUSANDS)**

Group	Number	Covered Payroll	Insurance Amount
<b><u>ACTIVE EMPLOYEES</u></b>			
State Employees	74,968	\$ 4,002,477	\$ 8,004,954
Teachers	149,018	7,666,824	15,333,648
VRS Political Subdivisions	106,271	4,656,697	9,313,394
SPORS	1,940	114,877	229,754
JRS	416	65,524	131,048
VaLORS	9,106	352,677	705,354
Life Insurance Only	<u>20,959</u>	<u>1,462,803</u>	<u>2,925,606</u>
Total	362,678	\$18,321,879	\$36,643,758
<b><u>RETIRED OR DISABLED MEMBERS</u></b>			
Service Retirees	156,021	n/a	\$ 7,284,550
Disabled Members	<u>17,113</u>	n/a	<u>948,302</u>
Total	173,134	n/a	\$ 8,232,852

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, 2016  
(\$ IN THOUSANDS)**

<b>OPEB Plan</b>	<b>Number</b>	<b>Covered Payroll</b>
GLI	362,678	\$18,321,880
HIC – State Employees	107,840	6,319,509
HIC – Teachers	149,018	7,666,824
HIC – Participating Political Subdivisions	21,846	943,186
HIC – Constitutional Officers	12,372	606,902
HIC – Social Service Employees	5,418	239,648
HIC – Registrars	216	10,274
VSDP		
State Employees	65,771	3,431,516
SPORS	1,384	72,283
VaLORS	<u>8,255</u>	<u>311,879</u>
Total	75,410	3,815,678
VLDP – Teachers	5,001	193,042
VLDP – Political Subdivisions	4,675	147,729

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 table shows a six-year history of active member valuation data.

**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
6/30/2016	362,678	\$18,321,880	\$50,518	2.34%
6/30/2015	360,873	17,813,570	49,362	1.44
6/30/2014	360,855	17,559,285	48,660	2.56
6/30/2013	361,080	17,132,176	47,447	2.47
6/30/2012	360,602	16,696,961	46,303	0.36
6/30/2011	358,536	16,542,753	46,139	0.97

**HEALTH INSURANCE CREDIT PROGRAM**

Valuation Date	Number	Annual Covered Payroll (\$ in Thousands)	Annual Average Pay	% Change in Average Pay
<b>STATE EMPLOYEES</b>				
6/30/2016	107,840	\$6,319,509	\$58,601	3.74%
6/30/2015	107,200	6,055,429	56,487	1.73
6/30/2014	106,815	5,930,862	55,525	3.57
6/30/2013	106,780	5,724,611	53,611	1.22
6/30/2012	106,517	5,641,862	52,967	(0.91)
6/30/2011	105,186	5,622,425	53,452	5.21
<b>TEACHERS</b>				
6/30/2016	149,018	\$7,666,824	\$51,449	1.44%
6/30/2015	147,645	7,488,507	50,720	1.25
6/30/2014	146,977	7,362,793	50,095	2.61
6/30/2013	147,257	7,188,884	48,819	2.60
6/30/2012	147,216	7,004,577	47,580	0.46
6/30/2011	146,152	6,922,130	47,363	(1.24)

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

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

**HEALTH INSURANCE CREDIT PROGRAM**

<b>Valuation Date</b>	<b>Number</b>	<b>Annual Covered Payroll (\$ in Thousands)</b>	<b>Annual Average Pay</b>	<b>% Change in Average Pay</b>
<b><u>PARTICIPATING POLITICAL SUBDIVISIONS</u></b>				
6/30/2016	21,846	\$943,186	\$43,174	2.32%
6/30/2015	21,339	900,390	42,195	0.83
6/30/2014	20,921	875,485	41,847	1.51
6/30/2013	20,534	846,523	41,225	3.92
6/30/2012	20,416	809,905	39,670	0.43
6/30/2011	19,861	784,481	39,499	2.44
<b><u>CONSTITUTIONAL OFFICERS</u></b>				
6/30/2016	12,372	\$606,902	\$49,054	1.14%
6/30/2015	12,060	584,797	48,499	0.86
6/30/2014	11,796	567,134	48,079	1.22
6/30/2013	11,269	535,261	47,499	4.12
6/30/2012	11,237	512,620	45,619	1.16
6/30/2011	11,731	529,049	45,098	0.24
<b><u>SOCIAL SERVICE EMPLOYEES</u></b>				
6/30/2016	5,418	\$239,648	\$44,232	1.87%
6/30/2015	5,262	228,472	43,419	0.97
6/30/2014	4,895	210,499	43,003	0.46
6/30/2013	4,633	198,320	42,806	3.72
6/30/2012	4,745	195,827	41,270	1.03
6/30/2011	4,951	202,247	40,850	(0.74)
<b><u>REGISTRARS</u></b>				
6/30/2016	216	\$10,274	\$47,565	2.50%
6/30/2015	213	9,884	46,404	1.93
6/30/2014	203	9,242	45,527	1.83
6/30/2013	191	8,539	44,707	3.95
6/30/2012	193	8,301	43,010	1.79
6/30/2011	212	8,958	42,255	(0.55)

**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
6/30/2016	75,410	\$3,815,678	\$50,599	3.74%
6/30/2015	74,367	3,627,297	48,776	1.21
6/30/2014	74,399	3,585,486	48,193	2.94
6/30/2013	74,178	3,472,669	46,815	0.50
6/30/2012	73,707	3,433,322	46,581	0.08
6/30/2011	72,440	3,371,773	46,546	5.10

**VIRGINIA LOCAL DISABILITY PROGRAM**

Valuation Date	Number	Annual Covered Payroll (\$ in Thousands)	Annual Average Pay	% Change in Average Pay
<b><u>TEACHERS</u></b>				
6/30/2016	5,001	\$193,042	\$38,601	3.69%
6/30/2015	2,796	104,087	37,227	13.53
6/30/2014	282	9,247	32,791	n/a
<b><u>POLITICAL SUBDIVISIONS</u></b>				
6/30/2016	4,675	\$147,729	\$31,600	4.33%
6/30/2015	2,917	88,350	30,288	3.67
6/30/2014	845	24,688	29,217	n/a

**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, 2016 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
6/30/2016	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
6/30/2014	10,922	1,206,647	4,306	843,669	159,238	7,369,106	5.18	46,277	0.81
6/30/2013	10,511	1,148,100	4,203	800,829	152,622	7,006,128	5.22	45,905	0.87
6/30/2012	9,828	1,064,957	3,905	773,058	146,314	6,658,857	4.58	45,511	0.35
6/30/2011	11,216	1,205,369	4,325	714,803	140,391	6,366,958	8.35	45,352	3.03

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

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>									
6/30/2016	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
6/30/2014	2,652	4,044	1,548	2,212	42,189	62,655	3.01	1,485	0.34
6/30/2013	2,542	3,765	1,503	2,112	41,085	60,823	2.79	1,480	0.14
6/30/2012	2,539	3,784	1,453	2,065	40,046	59,170	2.99	1,478	0.20
6/30/2011	2,684	4,009	1,986	2,841	38,960	57,451	2.08	1,475	0.27
<b>TEACHERS</b>									
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)
6/30/2014	3,729	5,075	1,291	1,752	58,121	80,257	4.32	1,381	(0.07)
6/30/2013	3,557	5,016	1,389	1,918	55,683	76,934	4.20	1,382	0.14
6/30/2012	3,240	4,426	1,214	1,649	53,515	73,836	3.91	1,380	0.00
6/30/2011	4,073	5,776	1,163	1,568	51,489	71,059	6.29	1,380	0.29

\* 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>									
6/30/2016	400	\$198	140	\$70	4,602	\$2,275	5.96%	\$494	0.00%
6/30/2015	448	219	130	63	4,342	2,147	7.84	494	(0.20)
6/30/2014	n/a	n/a	n/a	n/a	4,024	1,991	n/a	495	n/a
<b><u>CONSTITUTIONAL OFFICERS</u></b>									
6/30/2016	356	\$189	101	\$53	3,245	\$1,654	8.53%	\$510	0.39%
6/30/2015	237	120	91	44	2,990	1,518	5.27	508	0.20
6/30/2014	n/a	n/a	n/a	n/a	2,844	1,442	n/a	507	n/a

\* 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 Rols	Health Insurance Credit (\$1,000s)	Number Removed from Rols	Health Insurance Credit (\$1,000s)	Number on Rols 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>									
6/30/2016	158	\$78	50	\$24	1,894	\$957	5.98%	\$505	(0.20)%
6/30/2015	171	85	32	16	1,786	903	8.27	506	0.00
6/30/2014	n/a	n/a	n/a	n/a	1,647	834	n/a	506	n/a
<b><u>REGISTRARS</u></b>									
6/30/2016	4	\$3	1	\$1	62	\$33	6.45%	\$532	1.33%
6/30/2015	2	1	0	0	59	31	3.33	525	(0.19)
6/30/2014	n/a	n/a	n/a	n/a	57	30	n/a	526	n/a

\* 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 Rols	Annualized LTD Payments (\$1,000s)	Number Removed from Rols	Annualized LTD Payments (\$1,000s)	Number on Rols 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
6/30/2016	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
6/30/2014	369	6,103	305	4,567	2,701	27,315	5.96	10,113	3.45
6/30/2013	401	6,256	434	4,707	2,637	25,779	6.39	9,776	7.72
6/30/2012	424	6,438	374	5,635	2,670	24,230	3.43	9,075	1.49
6/30/2011	411	6,262	365	6,252	2,620	23,427	0.04	8,942	(1.71)

**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><u>TEACHERS</u></b>									
6/30/2016	1	\$11	0	\$0	1	\$11	n/a	\$11	n/a
6/30/2015	0	0	0	0	0	0	0.00	0	0.00
6/30/2014	0	0	0	0	0	0	0.00	0	0.00
<b><u>POLITICAL SUBDIVISIONS</u></b>									
6/30/2016	0	\$0	0	\$0	0	\$0	0.00%	\$0	0.00%
6/30/2015	0	0	0	0	0	0	0.00	0	0.00
6/30/2014	0	0	0	0	0	0	0.00	0	0.00

### **Section III – Assets**

---

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, 2016, the market value of assets used to determine the actuarial value of assets is shown below.

**TABLE 5**  
**COMPARISON OF MARKET VALUE OF ASSETS AT**  
**JUNE 30, 2016 AND JUNE 30, 2015**  
**(\$ IN THOUSANDS)**

<b>OPEB Plan</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
GLI	\$1,224,926	\$1,162,617
HIC – State Employees	68,685	67,433
HIC – Teachers	82,854	84,384
HIC - Participating Political Subdivisions	19,337	19,348
HIC – Constitutional Officers	1,479	1,120
HIC – Social Service Employees	861	915
HIC – Registrars	11	7
VSDP	407,826	414,518
VLDP – Teachers	0	0
VLDP – Political Subdivisions	0	0

**Section III – Assets (continued)**

---

2. Schedule B shows the development of the five-year market related actuarial value of assets as of June 30, 2016. The following table shows the actuarial value of assets.

**TABLE 6**  
**COMPARISON OF ACTUARIAL VALUE OF ASSETS AT**  
**JUNE 30, 2016 AND JUNE 30, 2015**  
**(\$ IN THOUSANDS)**

<b>OPEB Plan</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
GLI	\$1,247,564	\$1,128,876
HIC – State Employees	70,798	67,164
HIC – Teachers	86,701	85,379
HIC – Participating Political Subdivisions*	19,337	19,348
HIC – Constitutional Officers*	1,479	1,120
HIC – Social Service Employees*	861	915
HIC – Registrars*	11	7
VSDP	416,248	398,609
VLDP – Teachers	57	48
VLDP – Political Subdivisions	52	30

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

## ***Section IV – Comments on Valuation***

---

### **GROUP LIFE INSURANCE PROGRAM**

1. The June 30, 2016 valuation shows GLI has total prospective liabilities of \$3,491,820,000, of which \$1,749,825,000 is for the prospective death benefits payable on account of present retired and disabled members, and \$1,741,995,000 is for the prospective postemployment death benefits payable on account of present active members. Against these benefit liabilities, GLI has a total present actuarial value of assets of \$1,247,564,000 as of June 30, 2016. The difference of \$2,244,256,000 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for GLI on account of postemployment death benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year, plus administrator expenses. The valuation indicates the normal contribution for GLI is 0.42% of total active covered payroll.
3. Prospective normal contributions have a present value of \$517,352,000. When this amount is subtracted from \$2,244,256,000, which is the present value of the total future contributions to be made by the employers, there remains \$1,726,904,000 as the amount of future accrued liability contributions.
4. For GLI, it is recommended that the accrued liability contribution rate payable by employers on account of retirement benefits be set at 0.55% of total active covered payroll. This rate is sufficient to liquidate the unfunded accrued liability of \$1,726,904,000 over 27.5 years, based on a 7.00% investment rate of return assumption and that aggregate payroll will increase by 3.00% each year. See Schedule C for the amortization schedule for the unfunded accrued liability. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) is 0.97% of total active covered payroll. This rate is equivalent to 40.4¢ per month per \$1,000 of active members' life insurance.



#### ***Section IV – Comments on Valuation (continued)***

---

6. This valuation determines the cost of advance funding the postemployment death benefits under GLI. The cost of death 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 14.1¢ per month per \$1,000 of insurance.
7. The sum of the active term cost of 14.1¢ per \$1,000 of active members' life insurance and the postemployment advance funding cost of 40.4¢ per \$1,000 of active members' life insurance is 54.5¢ per \$1,000 of active members' life insurance.
8. GLI experienced a liability loss since the prior valuation of \$48.3 million; primarily due to demographic and salary experience. Assets grew less than expected for an asset loss of \$0.6 million. Combining the liability loss with the asset loss results in an overall loss on the unfunded liability of \$48.9 million.

## ***Section IV – Comments on Valuation (continued)***

---

### **HEALTH INSURANCE CREDIT PROGRAM STATE EMPLOYEES (State, JRS, SPORS, VaLORS, ORP, and UVA)**

1. For HIC - State Employees, the June 30, 2016 valuation shows total prospective benefit liabilities of \$1,112,913,000, of which \$610,570,000 is for the prospective retiree health care benefits payable on account of present retired members, members receiving disability benefits, and eligible deferred vested members, and \$502,343,000 is for the prospective retiree health care benefits payable on account of present active members. Against these benefit liabilities, HIC - State Employees has a total present actuarial value of assets of \$70,798,000 as of June 30, 2016. The difference of \$1,042,115,000 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for HIC - State Employees on account of retiree health care benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year, plus administrator expenses. The normal contribution for HIC - State Employees is determined to be 0.29% of total active covered payroll.
3. Prospective normal contributions have a present value of \$125,272,000. When this amount is subtracted from \$1,042,115,000, which is the present value of the total future contributions to be made by the employers, there remains \$916,843,000 as the amount of future accrued liability contributions.
4. For HIC - State Employees, it is recommended that the accrued liability contribution rate payable by employers on account of retiree health care benefits be set at 0.86% of total active covered payroll. This rate is sufficient to liquidate the unfunded accrued liability of \$916,843,000 over 27.0 years, based on a 7.00% investment rate of return and the assumption payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) is 1.15% of total active covered payroll.

#### ***Section IV – Comments on Valuation (continued)***

---

6. HIC - State Employees experienced a liability gain since the prior valuation of \$8.2 million; primarily due to demographic changes. The assets grew less than expected for a loss of \$1.4 million, for an overall gain on the unfunded liability of \$6.8 million.

## ***Section IV – Comments on Valuation (continued)***

---

### **HEALTH INSURANCE CREDIT PROGRAM TEACHERS**

1. For HIC - Teachers, the June 30, 2016 valuation shows total prospective benefit liabilities of \$1,505,916,000, of which \$811,164,000 is for the prospective retiree health care benefits payable on account of present retired members, members receiving disability benefits, and eligible deferred vested members, and \$694,752,000 is for the prospective retiree health care benefits payable on account of present active members. Against these benefit liabilities, HIC – Teachers has a total present actuarial value of assets of \$86,701,000 as of June 30, 2016. The difference of \$1,419,215,000 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for HIC - Teachers on account of retiree health care benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year, plus administrator expenses. The normal contribution for HIC - Teachers is determined to be 0.26% of total active covered payroll.
3. Prospective normal contributions have a present value of \$154,713,000. When this amount is subtracted from \$1,419,215,000, which is the present value of the total future contributions to be made by the employers, there remains \$1,264,502,000 as the amount of future accrued liability contributions.
4. For HIC - Teachers, it is recommended that the accrued liability contribution rate payable by employers on account of retiree health care benefits be set at 0.99% of salary. This rate is sufficient to liquidate the unfunded accrued liability of \$1,264,502,000 over 26.7 years, based on a 7.00% investment rate of return and the assumption payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) is 1.25% of total active covered payroll.

***Section IV – Comments on Valuation (continued)***

---

6. HIC - Teachers experienced a liability gain since the prior valuation of \$0.8 million; primarily due to demographic changes. The assets grew less than expected for a loss of \$1.9 million; for an overall loss on the unfunded liability of \$1.1 million.

## ***Section IV – Comments on Valuation (continued)***

---

### **HEALTH INSURANCE CREDIT PROGRAM PARTICIPATING POLITICAL SUBDIVISIONS**

1. For HIC - Participating Political Subdivisions, the June 30, 2016 valuation shows total prospective benefit liabilities of \$44,895,000, of which \$20,216,000 is for the prospective retiree health care benefits payable on account of present retired members, members receiving disability benefits, and eligible deferred vested members, and \$24,679,000 is for the prospective retiree health care benefits payable on account of present active members. Against these benefit liabilities, HIC - Participating Political Subdivisions has, in aggregate, a total present market value of assets of \$19,337,000 as of June 30, 2016. The difference of \$25,558,000 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for HIC - Participating Political Subdivisions on account of retiree health care benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year, plus administrator expenses. The average normal contribution for HIC - Participating Political Subdivisions is determined to be 0.14% of total active covered payroll.
3. Prospective normal contributions have a present value of \$6,653,000. When this amount is subtracted from \$25,558,000, which is the present value of the total future contributions to be made by the employers, there remains \$18,905,000 as the amount of future accrued liability contributions.
4. For HIC - Participating Political Subdivisions, the average accrued liability contribution rate payable by employers on account of retiree health care benefits is 0.18% of salary. This rate is sufficient to liquidate the unfunded accrued liability of \$18,905,000 over 26.3 years, based on a 7.00% investment rate of return and the assumption payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The average total annual required contribution (ARC) is 0.32% of total active covered payroll.

#### ***Section IV – Comments on Valuation (continued)***

---

6. HIC - Participating Political Subdivisions experienced a liability loss since the prior valuation of \$0.1 million. The assets grew less than expected for a loss of \$1.2 million; for an overall loss on the unfunded liability of \$1.3 million.

## ***Section IV – Comments on Valuation (continued)***

---

### **HEALTH INSURANCE CREDIT PROGRAM CONSTITUTIONAL OFFICERS**

1. For HIC - Constitutional Officers, the June 30, 2016 valuation shows total prospective benefit liabilities of \$32,292,000, of which \$15,106,000 is for the prospective retiree health care benefits payable on account of present retired members, members receiving disability benefits, and eligible deferred vested members, and \$17,186,000 is for the prospective retiree health care benefits payable on account of present active members. Against these benefit liabilities, HIC - Constitutional Officers has a total present actuarial value of assets of \$1,479,000 as of June 30, 2016. The difference of \$30,813,000 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for HIC - Constitutional Officers on account of retiree health care benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year. The normal contribution for HIC - Constitutional Officers is determined to be 0.11% of total active covered payroll.
3. Prospective normal contributions have a present value of \$4,514,000. When this amount is subtracted from \$30,813,000, which is the present value of the total future contributions to be made by the employers, there remains \$26,299,000 as the amount of future accrued liability contributions.
4. For HIC - Constitutional Officers, it is recommended that the accrued liability contribution rate payable by employers on account of retiree health care benefits be set at 0.26% of salary. This rate is sufficient to liquidate the unfunded accrued liability of \$26,299,000 over 26.4 years, based on a 7.00% investment rate of return and the assumption payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) is 0.37% of total active covered payroll.
6. HIC - Constitutional Officers experienced a liability loss since the prior valuation of \$0.1 million; primarily due to demographic changes. The assets grew less than expected for a loss of \$0.1 million; for an overall loss on the unfunded liability of \$0.2 million.



## ***Section IV – Comments on Valuation (continued)***

---

### **HEALTH INSURANCE CREDIT PROGRAM SOCIAL SERVICE EMPLOYEES**

1. For HIC - Social Service Employees, the June 30, 2016 valuation shows total prospective benefit liabilities of \$15,473,000, of which \$8,770,000 is for the prospective retiree health care benefits payable on account of present retired members, members receiving disability benefits, and eligible deferred vested members, and \$6,703,000 is for the prospective retiree health care benefits payable on account of present active members. Against these benefit liabilities, HIC - Social Service Employees has a total present actuarial value of assets of \$861,000 as of June 30, 2016. The difference of \$14,612,000 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for HIC - Social Service Employees on account of retiree health care benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year. The normal contribution for HIC - Social Service Employees is determined to be 0.10% of total active covered payroll.
3. Prospective normal contributions have a present value of \$1,758,000. When this amount is subtracted from \$14,612,000, which is the present value of the total future contributions to be made by the employers, there remains \$12,854,000 as the amount of future accrued liability contributions.
4. For HIC - Social Service Employees, it is recommended that the accrued liability contribution rate payable by employers on account of retiree health care benefits be set at 0.32% of salary. This rate is sufficient to liquidate the unfunded accrued liability of \$12,854,000 over 26.7 years, based on a 7.00% investment rate of return and the assumption payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) is 0.42% of total active covered payroll.

#### ***Section IV – Comments on Valuation (continued)***

---

6. HIC - Social Services Employees experienced a liability gain/loss since the prior valuation of \$0.0 million.  
The assets grew as expected for a gain/loss of \$0.0 million; for an overall gain/loss on the unfunded liability of \$0.0 million.

## ***Section IV – Comments on Valuation (continued)***

---

### **HEALTH INSURANCE CREDIT PROGRAM REGISTRARS**

1. For HIC - Registrars, the June 30, 2016 valuation shows total prospective benefit liabilities of \$581,000, of which \$291,000 is for the prospective retiree health care benefits payable on account of present retired members, members receiving disability benefits, and eligible deferred vested members, and \$290,000 is for the prospective retiree health care benefits payable on account of present active members. Against these benefit liabilities, HIC - Registrars has a total present actuarial value of assets of \$11,000 as of June 30, 2016. The difference of \$570,000 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for HIC - Registrars on account of retiree health care benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year. The normal contribution for Registrars is determined to be 0.11% of total active covered payroll.
3. Prospective normal contributions have a present value of \$71,000. When this amount is subtracted from \$570,000, which is the present value of the total future contributions to be made by the employers, there remains \$499,000 as the amount of future accrued liability contributions.
4. For HIC - Registrars, it is recommended that the accrued liability contribution rate payable by employers on account of retiree health care benefits be set at 0.29% of salary. This rate is sufficient to liquidate the unfunded accrued liability of \$499,000 over 26.1 years, based on a 7.00% investment rate of return and the assumption payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) is 0.40% of total active covered payroll.
6. HIC - Registrars experienced a liability gain since the prior valuation of \$13.5 thousand; primarily due to demographic changes. The assets grew less than expected for a loss of \$0.6 thousand; for an overall gain on the unfunded liability of \$12.9 thousand.

## ***Section IV – Comments on Valuation (continued)***

---

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

1. The June 30, 2016 valuation of VSDP shows total prospective benefit liabilities of \$435,016,000, of which \$156,449,000 is for the prospective benefits payable on account of present disabled and ported members, and \$278,567,000 is for the prospective benefits payable on account of present active members. Against these liabilities, LTD and LTC benefits have present assets of \$416,248,000 as of June 30, 2016. The difference of \$18,768,000 between the total liabilities and the total present actuarial value of assets presents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for VSDP on account of disabled and ported member benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year, plus administrator expenses. The normal contribution is determined to be 0.92% of total active covered payroll.
3. Prospective normal contributions have a present value of \$194,130,000. When this amount is subtracted from \$18,768,000, which is the present value of the total future contributions to be made by the employers, a surplus of \$175,362,000 results.
4. It is recommended that the accrued liability contribution rate payable by employers on account of LTD and LTC benefits be set at -0.29% of total active covered payroll. This rate includes an amount sufficient to liquidate the surplus of \$175,362,000 over 24.5 years, based on a 7.00% investment rate of return and the assumption that the payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) for LTD benefits and LTC benefits, combined, is 0.63% of total active covered payroll.
6. VSDP experienced a liability gain since the prior valuation of \$6.2 million; primarily due to demographic changes. This gain includes a loss of \$1.7 million for the change in actuarial cost method. The assets grew more than expected for a gain of \$3.8 million; for an overall gain on the unfunded liability of \$10.0 million.

## ***Section IV – Comments on Valuation (continued)***

---

### **VIRGINIA LOCAL DISABILITY PROGRAM TEACHERS**

1. The June 30, 2016 valuation of VLDP – Teachers shows total prospective benefit liabilities of \$3,913,000, of which \$132,000 is for the prospective benefits payable on account of present disabled and ported members, and \$3,781,000 is for the prospective benefits payable on account of present active members. Against these liabilities, LTD and LTC benefits have present assets of \$57,000 as of June 30, 2016. The difference of \$3,856,000 between the total liabilities and the total present actuarial value of assets presents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for VLDP – Teachers on account of disabled and ported member benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year, plus administrator expenses. The normal contribution is determined to be 0.31% of total active covered payroll.
3. Prospective normal contributions have a present value of \$3,474,000. When this amount is subtracted from \$3,856,000, which is the present value of the total future contributions to be made by the employers, there remains \$382,000 as the amount of future accrued liability contributions.
4. For VLDP – Teachers, it is recommended that the accrued liability contribution rate payable by employers on account of LTD and LTC benefits be set at 0.01% of total active covered payroll. This rate includes an amount sufficient to liquidate the unfunded accrued liability of \$382,000 over 18.7 years, based on a 7.00% investment rate of return and the assumption that the payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) for LTD benefits and LTC benefits, combined, is 0.32% of total active covered payroll.
6. VLDP – Teachers experienced a liability loss since the prior valuation of \$512.2 thousand; primarily due to administrative expenses greater than expected. This loss includes a gain of \$70.0 thousand for the

#### ***Section IV – Comments on Valuation (continued)***

---

change in actuarial cost method. The assets grew more than expected for a gain of \$5.6 thousand; for an overall loss on the unfunded liability of \$506.6 thousand.

## ***Section IV – Comments on Valuation (continued)***

---

### **VIRGINIA LOCAL DISABILITY PROGRAM POLITICAL SUBDIVISIONS**

1. The June 30, 2016 valuation for VLDP – Political Subdivisions shows total prospective benefit liabilities of \$4,962,000, of which \$135,000 is for the prospective benefits payable on account of present disabled and ported members, and \$4,827,000 is for the prospective benefits payable on account of present active members. Against these liabilities, LTD and LTC benefits have present assets of \$52,000 as of June 30, 2016. The difference of \$4,910,000 between the total liabilities and the total present actuarial value of assets presents the present value of contributions to be made in the future on account of benefits. Schedule A of this report outlines the results of the actuarial valuation.
2. The contributions for VLDP – Political Subdivisions on account of disabled and ported member benefits consist of normal contributions and accrued liability contributions. The normal contribution is equal to the actuarial present value of benefits accruing during the current year, plus administrator expenses. The normal contribution is determined to be 0.61% of total active covered payroll.
3. Prospective normal contributions have a present value of \$4,584,000. When this amount is subtracted from \$4,910,000, which is the present value of the total future contributions to be made by the employers, there remains \$326,000 as the amount of future accrued liability contributions.
4. For VLDP – Political Subdivisions, it is recommended that the accrued liability contribution rate payable by employers on account of LTD and LTC benefits be set at 0.01% of total active covered payroll. This rate includes an amount sufficient to liquidate the unfunded accrued liability of \$326,000 over 19.8 years, based on a 7.00% investment rate of return and the assumption that the payroll will increase by 3.00% annually. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
5. The total annual required contribution (ARC) for LTD benefits and LTC benefits, combined, is 0.62% of total active covered payroll.
6. VLDP – Political Subdivisions experienced a liability loss since the prior valuation of \$492.9 thousand; primarily due to administrative expenses greater than expected. This loss includes a gain of \$57.4

#### ***Section IV – Comments on Valuation (continued)***

---

thousand for the change in actuarial cost method. The assets grew more than expected for a gain of \$19.9 thousand; for an overall loss on the unfunded liability of \$473.0 thousand.



## **Section V – Contribution Rates**

---

1. The actuarially determined employer contribution (ARC) rates based on the June 30, 2016 actuarial valuation for each OPEB Plan are shown in the following table:

**TABLE 7**

**ANNUAL REQUIRED CONTRIBUTION (ARC) EXPRESSED  
AS A PERCENTAGE OF ACTIVE MEMBER COVERED PAYROLL**

<b>OPEB Plan</b>	<b>June 30, 2016</b>
GLI*	1.31%
HIC – State Employees	1.15
HIC – Teachers	1.25
HIC – Participating Political Subdivisions**	0.31
HIC – Constitutional Officers	0.37
HIC – Social Service Employees	0.42
HIC – Registrars	0.40
VSDP	0.63
VLDP – Teachers	0.32
VLDP – Political Subdivisions	0.62

\* The contribution rate for GLI includes an adjustment of 0.34% for active group life insurance, see Section I for additional detail.

\*\* Average of individual employer rates.

**Section V – 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 required contribution (ARC) rate for each OPEB Plan.

**TABLE 8**

**EMPLOYER CONTRIBUTION RATE EXPRESSED  
AS PERCENT OF ACTIVE MEMBER COVERED PAYROLL**

OPEB Plan	Rate as a Percent of Covered Payroll		
	Normal Cost* (a)	UAAL Amortization Payment (b)	Annual Required Contribution (c) = (a) + (b)
GLI	0.76%**	0.55%	1.31%
HIC – State Employees	0.29	0.86	1.15
HIC – Teachers	0.26	0.99	1.25
HIC – Participating Political Subdivisions***	0.14	0.18	0.32
HIC – Constitutional Officers	0.11	0.26	0.37
HIC – Social Service Employees	0.10	0.32	0.42
HIC – Registrars	0.11	0.29	0.40
VSDP	0.92	(0.29)	0.63
VLDP – Teachers	0.31	0.01	0.32
VLDP – Political Subdivisions	0.61	0.01	0.62

\* Includes total administrative expenses.

\*\* The normal cost rate for GLI includes an addition of 0.34% for active group life insurance, see Section I for additional detail.

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

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

---

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. On the basis of the valuation, we are recommending a total contribution rate of 54.5¢ 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**

<b>Recommended Contribution</b>	<b>Rate</b>	
	<b>¢ per \$1,000 of Active Members' Life Insurance</b>	<b>% of Covered Payroll</b>
Active Member Term Cost	14.1¢	0.34%
Postemployment Advance Funding	<u>40.4¢</u>	<u>0.97%</u>
Total	54.5¢	1.31%

**Section VI – Accounting Information**

1. GASB 43 and 45 set forth certain items of required supplementary information to be disclosed in the financial statements of VRS and the employers. One such item is a distribution of the number of members by type of membership, as follows:

**NUMBER OF ALL MEMBERS  
AS OF JUNE 30, 2016**

<b>OPEB Plan</b>	<b>Active Members</b>	<b>Retired, Disabled, Eligible Deferred Vested, or Ported LTC Members</b>	<b>Total</b>
GLI	362,678	173,134	535,812
HIC – State Employees	107,840	46,354	154,194
HIC – Teachers	149,018	64,327	213,345
HIC – Participating Political Subdivisions	21,846	4,890	26,736
HIC - Constitutional Officers	12,372	3,245	15,617
HIC – Social Service Employees	5,418	1,894	7,312
HIC – Registrars	216	62	278
VSDP	75,410	4,520	79,930
VLDP – Teachers	5,001	1	5,002
VLDP – Political Subdivisions	4,675	0	4,675

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

2. Another such item is the Schedule of Funding Progress, shown in the following table:

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

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued 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)
6/30/2016	\$1,247,564	\$2,974,468	\$1,726,904	41.94%	\$18,321,880	9.43%
6/30/2015	1,128,876	2,829,104	1,700,228	39.90	17,813,570	9.54
6/30/2014	992,221	2,701,509	1,709,288	36.73	17,559,285	9.73
6/30/2013	836,547	2,571,691	1,735,144	32.53	17,132,176	10.13
6/30/2012	755,889	2,458,310	1,702,421	30.75	16,696,961	10.20
6/30/2011	852,424	2,358,977	1,506,553	36.14	16,542,753	9.11

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

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued 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>						
6/30/2016	\$ 70,798	\$ 987,641	\$ 916,843	7.17%	\$6,319,509	14.51%
6/30/2015	67,164	976,526	909,362	6.88	6,055,429	15.02
6/30/2014	60,645	962,142	901,497	6.30	5,930,862	15.20
6/30/2013	54,773	944,582	889,809	5.80	5,724,611	15.54
6/30/2012	55,510	917,168	861,658	6.05	5,641,862	15.27
6/30/2011	110,791	896,560	785,769	12.36	5,622,425	13.98
<b>TEACHERS</b>						
6/30/2016	\$ 86,701	\$1,351,203	\$1,264,502	6.42%	\$7,666,824	16.49%
6/30/2015	85,379	1,325,415	1,240,036	6.44	7,488,507	16.56
6/30/2014	79,177	1,297,721	1,218,544	6.10	7,362,793	16.55
6/30/2013	67,012	1,257,792	1,190,780	5.33	7,188,884	16.56
6/30/2012	58,286	1,269,070	1,210,784	4.59	7,004,577	17.29
6/30/2011	85,933	1,230,205	1,144,272	6.99	6,922,130	16.53

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

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

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) Entry Age (b)</b>	<b>Unfunded AAL (UAAL) (b - a)</b>	<b>Funded Ratio (a / b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll ((b - a) / c)</b>
<b><u>PARTICIPATING POLITICAL SUBDIVISIONS</u></b>						
6/30/2016	\$19,337	\$38,242	\$18,905	50.56%	\$943,186	2.00%
6/30/2015	19,348	36,912	17,564	52.42	900,390	1.95
<b><u>CONSTITUTIONAL OFFICERS</u></b>						
6/30/2016	\$ 1,479	\$27,778	\$26,299	5.33%	\$606,902	4.33%
6/30/2015	1,120	26,700	25,580	4.19	584,797	4.37
<b><u>SOCIAL SERVICE EMPLOYEES</u></b>						
6/30/2016	\$ 861	\$13,715	\$12,854	6.28%	\$239,648	5.36%
6/30/2015	915	13,407	12,492	6.82	228,472	5.47
<b><u>REGISTRARS</u></b>						
6/30/2016	\$ 11	\$ 510	\$ 499	2.16%	\$ 10,274	4.86%
6/30/2015	7	504	497	1.39	9,884	5.03

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

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

Actuarial Valuation Date	Actuarial Value of 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)
6/30/2016**	\$416,248	\$240,886	\$(175,362)	172.80%	\$3,815,678	(4.60)%
6/30/2015**	398,609	235,247	(163,362)	169.44	3,627,297	(4.50)
6/30/2014	325,354	188,538	(136,816)	172.57	3,585,486	(3.82)
6/30/2013	313,480	182,946	(130,534)	171.35	3,472,669	(3.76)
6/30/2012	305,170	261,729	(43,441)	116.60	3,433,322	(1.27)
6/30/2011	330,079	262,844	(67,235)	125.58	3,371,773	(1.99)

\* Actuarial cost method of Projected Unit Credit prior to 6/30/2013 and Entry Age Normal on 6/30/2013 and later for Long-Term Disability, actuarial cost method of Projected Unit Credit prior to 6/30/2016 and Entry Age Normal on 6/30/2016 and later for Long-Term Care.

\*\* Includes Long-Term Care. Values prior to 6/30/2015 reflect Long-Term Disability only.

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

Actuarial Valuation Date	Actuarial Value of 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><u>TEACHERS</u></b>						
6/30/2016**	\$57	\$439	\$382	12.98%	\$193,042	0.20%
6/30/2015**	48	177	129	27.12	104,087	0.12
6/30/2014	0	11	11	0.00	9,247	0.12
<b><u>POLITICAL SUBDIVISIONS</u></b>						
6/30/2016**	\$52	\$378	\$326	13.76%	\$147,729	0.22%
6/30/2015**	30	136	106	22.06	88,350	0.12
6/30/2014	0	48	48	0.00	24,688	0.19

\* Actuarial cost method of Entry Age Normal for Long-Term Disability, actuarial cost method of Projected Unit Credit prior to 6/30/2016 and Entry Age Normal on 6/30/2016 and later for Long-Term Care.

\*\* Includes Long-Term Care. Values prior to 6/30/2015 reflect Long-Term Disability only.

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

3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2016. Additional information as of the latest actuarial valuation follows:

All OPEB Plans	
Valuation Date	6/30/2016
Amortization Method	Level Percentage of Pay, Closed
Actuarial Cost Method	Entry Age Normal
Payroll Growth Rate	3.00%
Actuarial Assumptions:	
Investment Rate of Return*	7.00%
*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	Effective Amortization Period (Years)
GLI	27.5
HIC – State Employees	27.0
HIC – Teachers	26.7
HIC – Participating Political Subdivisions	26.3
HIC - Constitutional Officers	26.4
HIC – Social Service Employees	26.7
HIC – Registrars	26.1
VSDP	24.5
VLDP – Teachers	18.7
VLDP – Political Subdivisions	19.8



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

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	\$8,000 Minimum Benefit 2.25%
VSDP	LTD Post-Disablement Benefit Increases
VLDP - Teachers	Plan 1: 2.50%
VLDP – Political Subdivisions	Plan 2: 2.25%

4. On June 2, 2015, GASB Statement No. 74 and GASB Statement No. 75 (GASB 74 and 75) were unanimously adopted by the GASB Board. The disclosure requirements of GASB 74 and 75 will be similar to the disclosure requirements for pension benefits under GASB Statement No. 67 and GASB Statement No. 68. GASB 74 relates to accounting disclosures for plan sponsors and, as such, replaces GASB 43 beginning with fiscal years ending June 30, 2017. GASB 75 relates to accounting disclosures for contributing employers and, as such, replaces GASB 45 beginning with fiscal years ending June 30, 2018. GASB 74 and 75 will require applicable OPEB plan sponsors and contributing employers to disclose the net OPEB liability on the statement of financial position and book an accounting expense based upon the entry age normal actuarial cost method. Beyond the use of a specified actuarial cost method, GASB’s new disclosure standards will also require the discount rate used to calculate liabilities to be based upon the yield of 20-year, tax-exempt municipal bonds and the expected rate of return on plan assets, to the extent plan assets are projected to be available for the payment of future benefits. Additionally, GASB 74 and 75 will bring about many other changes in the liability valuation and accounting disclosure processes

## ***Section VI – Accounting Information (continued)***

---

currently in place which are expected to significantly impact data collection, timing, and effort. As details for the new GASB OPEB disclosure standards emerge, planning and coordination between plan sponsors, contributing employers, actuaries, and auditors is recommended.

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

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR ENDING 2016  
GROUP LIFE INSURANCE PROGRAM  
(\$ IN MILLIONS)**

Fiscal Year 2016		
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$	2,829.1
(b) Normal Cost	\$	73.9
(c) Benefit Payments	\$	173.9
<b>2. End of Year:</b>		
(a) Expected AAL $[(1a) + (1b)] \times 1.07 - [(1c) \times (1 + [0.07 \times 0.50])]$	\$	2,926.2
(b) Actual AAL	\$	2,974.5
<b>3. Total AAL Gain (or Loss) (2a) – (2b)</b>	\$	(48.3)
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$	1,128.9
<b>5. Net external cash flow during the year</b>	\$	38.9
<b>6. End of Year:</b>		
(a) Expected AVA $[(4) \times 1.07] + [(5) \times (1 + [0.07 \times 0.50])]$	\$	1,248.2
(b) Actual AVA	\$	1,247.6
<b>7. AVA Gain (or Loss) (6b) – (6a)</b>	\$	(0.6)
<b>8. Expected UAAL at End of Year (2a) – (6a)</b>	\$	1,678.0
<b>9. Actual UAAL at End of Year (2b) – (6b)</b>	\$	1,726.9
<b>10. UAAL Gain (or Loss) (8) – (9)</b>	\$	(48.9)

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

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2016  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN MILLIONS)**

Fiscal Year 2016	State Employees*	Teachers
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$ 976.5	\$ 1,325.4
(b) Normal Cost	\$ 18.2	\$ 18.9
(c) Benefit Payments	\$ 66.2	\$ 83.5
<b>2. End of Year:</b>		
(a) Expected AAL $[(1a) + (1b)] \times 1.07 - [(1c) \times (1 + [0.07 \times 0.50])]$	\$ 995.8	\$ 1,352.0
(b) Actual AAL	\$ 987.6	\$ 1,351.2
<b>3. Total AAL Gain (or Loss) (2a) – (2b)</b>	\$ 8.2	\$ 0.8
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$ 67.2	\$ 85.4
<b>5. Net external cash flow during the year</b>	\$ 0.3	\$ (2.7)
<b>6. End of Year:</b>		
(a) Expected AVA $[(4) \times 1.07] + [(5) \times (1 + [0.07 \times 0.50])]$	\$ 72.2	\$ 88.6
(b) Actual AVA	\$ 70.8	\$ 86.7
<b>7. AVA Gain (or Loss) (6b) – (6a)</b>	\$ (1.4)	\$ (1.9)
<b>8. Expected UAAL at End of Year (2a) – (6a)</b>	\$ 923.6	\$ 1,263.4
<b>9. Actual UAAL at End of Year (2b) – (6b)</b>	\$ 916.8	\$ 1,264.5
<b>10. UAAL Gain (or Loss) (8) – (9)</b>	\$ 6.8	\$ (1.1)

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

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

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2016  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN MILLIONS)**

Fiscal Year 2016	Participating Political Subdivisions	Constitutional Officers
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$ 36.9	\$ 26.7
(b) Normal Cost	\$ 1.0	\$ 0.6
(c) Benefit Payments	\$ 2.3	\$ 1.5
<b>2. End of Year:</b>		
(a) Expected AAL $[(1a) + (1b)] \times 1.07 - [(1c) \times (1 + [0.07 \times 0.50])]$	\$ 38.1	\$ 27.7
(b) Actual AAL	\$ 38.2	\$ 27.8
<b>3. Total AAL Gain (or Loss) (2a) – (2b)</b>	\$ (0.1)	\$ (0.1)
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$ 19.3	\$ 1.1
<b>5. Net external cash flow during the year</b>	\$ (0.2)	\$ 0.4
<b>6. End of Year:</b>		
(a) Expected AVA $[(4) \times 1.07] + [(5) \times (1 + [0.07 \times 0.50])]$	\$ 20.5	\$ 1.6
(b) Actual AVA	\$ 19.3	\$ 1.5
<b>7. AVA Gain (or Loss) (6b) – (6a)</b>	\$ (1.2)	\$ (0.1)
<b>8. Expected UAAL at End of Year (2a) – (6a)</b>	\$ 17.6	\$ 26.1
<b>9. Actual UAAL at End of Year (2b) – (6b)</b>	\$ 18.9	\$ 26.3
<b>10. UAAL Gain (or Loss) (8) – (9)</b>	\$ (1.3)	\$ (0.2)

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

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2016  
HEALTH INSURANCE CREDIT PROGRAM  
(\$ IN MILLIONS)**

Fiscal Year 2016	Social Service Employees	Registrars
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$ 13.4	\$ 0.5
(b) Normal Cost	\$ 0.2	\$ 0.0
(c) Benefit Payments	\$ 0.9	\$ 0.0
<b>2. End of Year:</b>		
(a) Expected AAL $[(1a) + (1b)] \times 1.07 - [(1c) \times (1 + [0.07 \times 0.50])]$	\$ 13.7	\$ 0.6
(b) Actual AAL	\$ 13.7	\$ 0.5
<b>3. Total AAL Gain (or Loss) (2a) – (2b)</b>	\$ 0.0	\$ 0.1
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$ 0.9	\$ 0.0
<b>5. Net external cash flow during the year</b>	\$ (0.1)	\$ 0.0
<b>6. End of Year:</b>		
(a) Expected AVA $[(4) \times 1.07] + [(5) \times (1 + [0.07 \times 0.50])]$	\$ 0.9	\$ 0.0
(b) Actual AVA	\$ 0.9	\$ 0.0
<b>7. AVA Gain (or Loss) (6b) – (6a)</b>	\$ 0.0	\$ 0.0
<b>8. Expected UAAL at End of Year (2a) – (6a)</b>	\$ 12.8	\$ 0.6
<b>9. Actual UAAL at End of Year (2b) – (6b)</b>	\$ 12.8	\$ 0.5
<b>10. UAAL Gain (or Loss) (8) – (9)</b>	\$ 0.0	\$ 0.1

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

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2016  
VIRGINIA SICKNESS AND DISABILITY PROGRAM  
(\$ IN MILLIONS)**

Fiscal Year 2016		
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$	235.2
(b) Normal Cost	\$	33.3
(c) Benefit Payments	\$	38.8
<b>2. End of Year:</b>		
(a) Expected AAL $[(1a) + (1b)] \times 1.07 - [(1c) \times (1 + [0.07 \times 0.50])]$	\$	247.1
(b) Actual AAL	\$	240.9
<b>3. Total AAL Gain (or Loss) (2a) – (2b)</b>	\$	6.2
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$	398.6
<b>5. Net external cash flow during the year</b>	\$	(13.6)
<b>6. End of Year:</b>		
(a) Expected AVA $[(4) \times 1.07] + [(5) \times (1 + [0.07 \times 0.50])]$	\$	412.4
(b) Actual AVA	\$	416.2
<b>7. Total AVA Gain (or Loss) (6a) – (6b)</b>	\$	3.8
<b>8. Expected UAAL at End of Year (2a) – (6a)</b>	\$	(165.3)
<b>9. Actual UAAL at End of Year (2b) – (6b)</b>	\$	(175.3)
<b>10. UAAL Gain (or Loss) (8) – (9)</b>	\$	10.0

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

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES (UAAL)  
DURING FISCAL YEAR 2016  
VIRGINIA LOCAL DISABILITY PROGRAM  
(\$ IN THOUSANDS)**

Fiscal Year 2016	Teachers	Political Subdivisions
<b>1. Beginning of Year:</b>		
(a) Actuarial Accrued Liability (AAL)	\$ 177.0	\$ 136.0
(b) Normal Cost	\$ 303.0	\$ 515.0
(c) Benefit Payments (including third party expenses)	\$ 567.0	\$ 784.0
<b>2. End of Year:</b>		
(a) Expected AAL $[(1a) + (1b)] \times 1.07 - [(1c) \times (1 + [0.07 \times 0.50])]$	\$ (73.2)	\$ (114.9)
(b) Actual AAL	\$ 439.0	\$ 378.0
<b>3. Total AAL Gain (or Loss) (2a) – (2b)</b>	\$ (512.2)	\$ (492.9)
<b>4. Actuarial Value of Assets (AVA) Beginning of Year</b>	\$ 48.0	\$ 30.0
<b>5. Net external cash flow during the year</b>	\$ 0.0	\$ 0.0
<b>6. End of Year:</b>		
(a) Expected AVA $[(4) \times 1.07] + [(5) \times (1 + [0.07 \times 0.50])]$	\$ 51.4	\$ 32.1
(b) Actual AVA	\$ 57.0	\$ 52.0
<b>7. AVA Gain (or Loss) (6b) – (6a)</b>	\$ 5.6	\$ 19.9
<b>8. Expected UAAL at End of Year (2a) – (6a)</b>	\$ (124.6)	\$ (147.0)
<b>9. Actual UAAL at End of Year (2b) – (6b)</b>	\$ 382.0	\$ 326.0
<b>10. UAAL Gain (or Loss) (8) – (9)</b>	\$ (506.6)	\$ (473.0)



**Schedule A – Results of the Valuation**

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL</b>	\$ 18,321,880	\$ 17,813,570
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 1,741,995	\$ 1,695,520
(b) Present retired and disabled members	<u>1,749,825</u>	<u>1,633,937</u>
(c) Total present value of prospective benefits	\$ 3,491,820	\$ 3,329,457
(d) Present value of future normal contributions	<u>517,352</u>	<u>500,353</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 2,974,468	\$ 2,829,104
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 1,247,564	\$ 1,128,876
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 1,726,904	\$ 1,700,228
<b>5. NORMAL CONTRIBUTION*</b>	\$ 76,230	\$ 73,865
<b>6. ACCRUED LIABILITY CONTRIBUTION</b>	<u>99,438</u>	<u>95,846</u>
<b>7. TOTAL CONTRIBUTION (6) + (5)</b>	\$ 175,668	\$ 169,711
<b>8. EFFECTIVE AMORTIZATION PERIOD</b>	27.5	28.6
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (5) ÷ (1)</b>	0.42%	0.42%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	<u>0.55%</u>	<u>0.55%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.97%	0.97%
<b>12. ADJUSTMENT FOR ACTIVE GROUP LIFE INSURANCE</b>	<u>0.34%</u>	<u>0.34%</u>
<b>13. TOTAL ANNUAL REQUIRED CONTRIBUTION FOR PLAN (11) + (12)</b>	1.31%	1.31%
<b>14. DISCOUNT RATE</b>	7.00%	7.00%

\*Includes total administrative expenses of \$183,000 for 2015 and \$81,000 for 2016.

**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, 2016	June 30, 2015
<b>1. COVERED PAYROLL</b>	\$ 6,319,509	\$ 6,055,429
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 502,343	\$ 507,694
(b) Present retired, disabled, and deferred members	<u>610,570</u>	<u>594,098</u>
(c) Total present value of prospective benefits	\$ 1,112,913	\$ 1,101,792
(d) Present value of future normal contributions	<u>125,272</u>	<u>125,266</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 987,641	\$ 976,526
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 70,798	\$ 67,164
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 916,843	\$ 909,362
<b>5. EFFECTIVE AMORTIZATION PERIOD</b>	27.0	28.0
<b>6. NORMAL CONTRIBUTION*</b>	\$ 18,144	\$ 18,202
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>53,344</u>	<u>51,839</u>
<b>8. TOTAL CONTRIBUTION BASED ON COVERED PAYROLL (6) + (7)</b>	\$ 71,488	\$ 70,041
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.29%	0.31%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>0.86%</u>	<u>0.87%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	1.15%	1.18%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

\*Includes total administrative expenses of \$195,000 for 2015 and \$171,000 for 2016.

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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL</b>	\$ 7,666,824	\$ 7,488,507
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 694,752	\$ 691,836
(b) Present retired, disabled, and deferred members	<u>811,164</u>	<u>786,781</u>
(c) Total present value of prospective benefits	\$ 1,505,916	\$ 1,478,617
(d) Present value of future normal contributions	<u>154,713</u>	<u>153,202</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 1,351,203	\$ 1,325,415
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 86,701	\$ 85,379
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 1,264,502	\$ 1,240,036
<b>5. EFFECTIVE AMORTIZATION PERIOD</b>	26.7	27.8
<b>6. NORMAL CONTRIBUTION*</b>	\$ 19,198	\$ 18,948
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>74,109</u>	<u>71,021</u>
<b>8. TOTAL CONTRIBUTION BASED ON ACTIVE PAYROLL (6) + (7)</b>	\$ 93,307	\$ 89,969
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.26%	0.26%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>0.99%</u>	<u>0.97%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	1.25%	1.23%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

\*Includes total administrative expenses of \$211,000 for 2015 and \$178,000 for 2016.

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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL</b>	\$ 943,186	\$ 900,390
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 24,679	\$ 24,151
(b) Present retired, disabled, and deferred members	<u>20,216</u>	<u>19,286</u>
(c) Total present value of prospective benefits	\$ 44,895	\$ 43,437
(d) Present value of future normal contributions	<u>6,653</u>	<u>6,525</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 38,242	\$ 36,912
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 19,337	\$ 19,348
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 18,905	\$ 17,564
<b>5. EFFECTIVE AMORTIZATION PERIOD</b>	26.3	27.8
<b>6. NORMAL CONTRIBUTION*</b>	\$ 967	\$ 947
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>1,117</u>	<u>1,005</u>
<b>8. TOTAL CONTRIBUTION BASED ON ACTIVE PAYROLL (6) + (7)</b>	\$ 2,084	\$ 1,952
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL**</b>	0.14%	0.14%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL**</b>	<u>0.18%</u>	<u>0.17%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.32%	0.31%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

\*Includes total administrative expenses of \$59,000 for 2015 and \$52,000 for 2016.

\*\*Average rate as a percent of covered payroll.

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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL</b>	\$ 606,902	\$ 584,797
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 17,186	\$ 17,212
(b) Present retired, disabled, and deferred members	<u>15,106</u>	<u>13,802</u>
(c) Total present value of prospective benefits	\$ 32,292	\$ 31,014
(d) Present value of future normal contributions	<u>4,514</u>	<u>4,314</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 27,778	\$ 26,700
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 1,479	\$ 1,120
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 26,299	\$ 25,580
<b>5. EFFECTIVE AMORTIZATION PERIOD</b>	26.4	27.6
<b>6. NORMAL CONTRIBUTION*</b>	\$ 627	\$ 600
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>1,550</u>	<u>1,471</u>
<b>8. TOTAL CONTRIBUTION BASED ON ACTIVE PAYROLL (6) + (7)</b>	\$ 2,177	\$ 2,071
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.11%	0.10%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>0.26%</u>	<u>0.26%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.37%	0.36%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

\*Includes total administrative expenses of \$0 for 2015 and 2016.

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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL</b>	\$ 239,648	\$ 228,472
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 6,703	\$ 6,724
(b) Present retired, disabled, and deferred members	<u>8,770</u>	<u>8,357</u>
(c) Total present value of prospective benefits	\$ 15,473	\$ 15,081
(d) Present value of future normal contributions	<u>1,758</u>	<u>1,674</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 13,715	\$ 13,407
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 861	\$ 915
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 12,854	\$ 12,492
<b>5. EFFECTIVE AMORTIZATION PERIOD</b>	26.7	27.8
<b>6. NORMAL CONTRIBUTION*</b>	\$ 246	\$ 235
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>753</u>	<u>714</u>
<b>8. TOTAL CONTRIBUTION BASED ON ACTIVE PAYROLL (6) + (7)</b>	\$ 999	\$ 949
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.10%	0.10%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>0.32%</u>	<u>0.32%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.42%	0.42%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

\*Includes total administrative expenses of \$0 for 2015 and 2016.

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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL</b>	\$ 10,274	\$ 9,884
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 290	\$ 291
(b) Present retired, disabled, and deferred members	<u>291</u>	<u>281</u>
(c) Total present value of prospective benefits	\$ 581	\$ 572
(d) Present value of future normal contributions	<u>71</u>	<u>68</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 510	\$ 504
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 11	\$ 7
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 499	\$ 497
<b>5. EFFECTIVE AMORTIZATION PERIOD</b>	26.1	27.1
<b>6. NORMAL CONTRIBUTION*</b>	\$ 11	\$ 11
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>30</u>	<u>29</u>
<b>8. TOTAL CONTRIBUTION BASED ON ACTIVE PAYROLL (6) + (7)</b>	\$ 41	\$ 40
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.11%	0.11%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>0.29%</u>	<u>0.30%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.40%	0.41%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

\*Includes total administrative expenses of \$0 for 2015 and 2016.

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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL*</b>	\$ 3,815,678	\$ 3,627,297
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members	\$ 278,567	\$ 264,385
(b) Present disabled and ported members	<u>156,449</u>	<u>156,796</u>
(c) Total present value of prospective benefits	\$ 435,016	\$ 421,181
(d) Present value of future normal contributions	<u>194,130</u>	<u>185,934</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 240,886	\$ 235,247
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 416,248	\$ 398,609
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ (175,362)	\$ (163,362)
<b>5. EFFECTIVE AMORTIZATION PERIOD</b>	24.5	25.9
<b>6. NORMAL CONTRIBUTION**</b>	\$ 34,257	\$ 33,306
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>(10,792)</u>	<u>(9,730)</u>
<b>8. TOTAL CONTRIBUTION BASED ON ACTIVE PAYROLL (6) + (7)</b>	\$ 23,465	\$ 23,576
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.92%	0.93%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>(0.29)%</u>	<u>(0.27)%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.63%	0.66%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

\*Covered payroll consist of only those State, VaLORS, and SPORS employees participating in VSDP and exclude 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 third party administrator expenses of \$8,536,000 for 2015 and administrative expenses of \$8,197,000 for 2016.



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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL*</b>	\$ 193,042	\$ 104,087
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members:	\$ 3,781	\$ 1,921
(b) Present disabled and ported members:	<u>132</u>	<u>15</u>
(c) Total present value of prospective benefits	\$ 3,913	\$ 1,936
(d) Present value of future normal contributions	<u>3,474</u>	<u>1,759</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 439	\$ 177
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 57	\$ 48
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 382	\$ 129
<b>5. AMORTIZATION PERIOD</b>	18.7	20.1
<b>6. NORMAL CONTRIBUTION**</b>	\$ 593	\$ 303
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>28</u>	<u>9</u>
<b>8. TOTAL CONTRIBUTION BASED ON COVERED PAYROLL (6) + (7)</b>	\$ 621	\$ 312
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.31%	0.30%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>0.01%</u>	<u>0.01%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.32%	0.31%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

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

\*\*Includes estimated third party administrator expenses of \$123,000 for 2015 and total administrative expenses of \$227,000 for 2016.

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

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

Valuation Date	June 30, 2016	June 30, 2015
<b>1. COVERED PAYROLL*</b>	\$ 147,729	\$ 88,350
<b>2. ACTUARIAL ACCRUED LIABILITY</b>		
Present value of prospective benefits payable in respect of:		
(a) Present active members:	\$ 4,827	\$ 2,783
(b) Present disabled and ported members:	<u>135</u>	<u>30</u>
(c) Total present value of prospective benefits	\$ 4,962	\$ 2,813
(d) Present value of future normal contributions	<u>4,584</u>	<u>2,677</u>
(e) Total actuarial accrued liability (2c) – (2d)	\$ 378	\$ 136
<b>3. PRESENT ASSETS FOR VALUATION PURPOSES</b>	\$ 52	\$ 30
<b>4. UNFUNDED ACTUARIAL ACCRUED LIABILITY (2e) – (3)</b>	\$ 326	\$ 106
<b>5. AMORTIZATION PERIOD</b>	19.8	17.9
<b>6. NORMAL CONTRIBUTION**</b>	\$ 883	\$ 515
<b>7. ACCRUED LIABILITY CONTRIBUTION</b>	<u>23</u>	<u>8</u>
<b>8. TOTAL CONTRIBUTION BASED ON COVERED PAYROLL (6) + (7)</b>	\$ 906	\$ 523
<b>9. NORMAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (6) ÷ (1)</b>	0.61%	0.59%
<b>10. ACCRUED LIABILITY CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (7) ÷ (1)</b>	<u>0.01%</u>	<u>0.01%</u>
<b>11. TOTAL CONTRIBUTION AS A PERCENT OF COVERED PAYROLL (9) + (10)</b>	0.62%	0.60%
<b>12. DISCOUNT RATE</b>	7.00%	7.00%

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

\*\*Includes estimated third party administrator expenses of \$156,000 for 2015 and total administrative expenses of \$261,000 for 2016.

**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)
6/30/2016	n/a	\$1,749,825	\$1,224,643	\$2,974,468	\$1,247,564	n/a	71.30%	0.00%
6/30/2015	n/a	1,633,937	1,195,167	2,829,104	1,128,876	n/a	69.09	0.00
6/30/2014	n/a	1,522,758	1,178,751	2,701,509	992,221	n/a	65.16	0.00
6/30/2013	n/a	1,422,423	1,149,268	2,571,691	836,547	n/a	58.81	0.00
6/30/2012	n/a	1,308,096	1,150,214	2,458,310	755,889	n/a	57.79	0.00
6/30/2011	n/a	1,228,335	1,130,642	2,358,977	852,424	n/a	69.40	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>								
6/30/2016	n/a	\$610,570	\$377,071	\$987,641	\$ 70,798	n/a	11.60%	0.00%
6/30/2015	n/a	594,098	382,428	976,526	67,164	n/a	11.31	0.00
6/30/2014	n/a	577,291	384,851	962,142	60,645	n/a	10.51	0.00
6/30/2013	n/a	562,448	382,134	944,582	54,773	n/a	9.74	0.00
6/30/2012	n/a	542,874	374,294	917,168	55,510	n/a	10.23	0.00
6/30/2011	n/a	530,461	366,099	896,560	110,791	n/a	20.89	0.00
<b>TEACHERS</b>								
6/30/2016	n/a	\$811,164	\$540,039	\$1,351,203	\$ 86,701	n/a	10.69%	0.00%
6/30/2015	n/a	786,781	538,634	1,325,415	85,379	n/a	10.85	0.00
6/30/2014	n/a	761,301	536,420	1,297,721	79,177	n/a	10.40	0.00
6/30/2013	n/a	728,612	529,180	1,257,792	67,012	n/a	9.20	0.00
6/30/2012	n/a	732,146	536,924	1,269,070	58,286	n/a	7.96	0.00
6/30/2011	n/a	707,436	522,769	1,230,205	85,933	n/a	12.15	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>								
6/30/2016	n/a	\$20,216	\$18,026	\$38,242	\$19,337	n/a	95.65%	0.00%
6/30/2015	n/a	19,286	17,626	36,912	19,348	n/a	100.00	0.35
6/30/2014	n/a	17,371	17,826	35,197	18,605	n/a	100.00	6.92
6/30/2013	n/a	16,268	17,036	33,304	16,137	n/a	99.19	0.00
6/30/2012	n/a	15,054	16,369	31,423	14,275	n/a	94.83	0.00
6/30/2011	n/a	14,503	15,688	30,191	13,918	n/a	95.97	0.00
<b><u>CONSTITUTIONAL OFFICERS</u></b>								
6/30/2016	n/a	\$15,106	\$12,672	\$27,778	\$ 1,479	n/a	9.79%	0.00%
6/30/2015	n/a	13,802	12,898	26,700	1,120	n/a	8.11	0.00
6/30/2014	n/a	13,140	12,730	25,870	2,378	n/a	18.10	0.00
6/30/2013	n/a	12,413	12,357	24,770	831	n/a	6.69	0.00
6/30/2012	n/a	12,420	12,693	25,113	1,338	n/a	10.77	0.00
6/30/2011	n/a	11,402	12,612	24,014	1,652	n/a	14.49	0.00
<b><u>SOCIAL SERVICE EMPLOYEES</u></b>								
6/30/2016	n/a	\$ 8,770	\$ 4,945	\$13,715	\$ 861	n/a	9.82%	0.00%
6/30/2015	n/a	8,357	5,051	13,408	915	n/a	10.95	0.00
6/30/2014	n/a	7,767	5,180	12,947	1,736	n/a	22.35	0.00
6/30/2013	n/a	7,349	5,232	12,581	681	n/a	9.27	0.00
6/30/2012	n/a	7,161	5,538	12,699	532	n/a	7.43	0.00
6/30/2011	n/a	6,714	5,548	12,262	731	n/a	10.89	0.00
<b><u>REGISTRARS</u></b>								
6/30/2016	n/a	\$ 291	\$ 219	\$ 510	\$ 11	n/a	3.78%	0.00%
6/30/2015	n/a	281	223	504	7	n/a	2.49	0.00
6/30/2014	n/a	272	210	482	31	n/a	11.40	0.00
6/30/2013	n/a	239	205	444	(2)	n/a	(0.84)	0.00
6/30/2012	n/a	237	225	462	(63)	n/a	(26.58)	0.00
6/30/2011	n/a	155	246	401	(45)	n/a	(29.03)	0.00

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

**VIRGINIA SICKNESS AND DISABILITY 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)
6/30/2016*	n/a	\$156,449	\$ 84,437	\$240,886	\$416,248	n/a	100.00%	307.68%
6/30/2015*	n/a	156,796	78,451	235,247	398,609	n/a	100.00	308.23
6/30/2014	n/a	138,511	50,027	188,538	325,354	n/a	100.00	373.48
6/30/2013	n/a	132,842	50,104	182,946	313,480	n/a	100.00	360.53
6/30/2012	n/a	125,578	136,151	261,729	305,170	n/a	100.00	131.91
6/30/2011	n/a	123,339	139,505	262,844	330,079	n/a	100.00	148.20

\* Includes Long-Term Care. Values prior to 6/30/2015 reflect Long-Term Disability only.

**VIRGINIA LOCAL DISABILITY 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>TEACHERS</b>								
6/30/2016*	n/a	\$132	\$307	\$439	\$57	n/a	43.18%	0.00%
6/30/2015*	n/a	15	162	177	48	n/a	100.00	20.37
6/30/2014	n/a	n/a	n/a	11	0	n/a	0.00	0.00
<b>POLITICAL SUBDIVISIONS</b>								
6/30/2016*	n/a	\$135	\$243	\$378	\$52	n/a	38.52%	0.00%
6/30/2015*	n/a	30	106	136	30	n/a	100.00	0.00
6/30/2014	n/a	n/a	n/a	48	0	n/a	0.00	0.00

\* Includes Long-Term Care. Values prior to 6/30/2015 reflect Long-Term Disability only.

## ***Schedule B – Plan Assets***

---

GASB 43 and 45 define plan assets as resources, usually in the form of stocks, bonds, and other classes of investments, that have been segregated and restricted in a trust, or equivalent arrangement, in which (a) employer contributions to the plan are irrevocable, (b) assets are dedicated to providing benefits to retirees and their beneficiaries, and (c) assets are legally protected from creditors of the employers or plan administrator, for the payment of benefits in accordance with the terms of the plan.

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 7.00% 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 actuarial value of assets used 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, 2016	June 30, 2015
1. Market value of assets at beginning of year	\$ 1,162,617	\$ 1,079,315
Revenue for the year		
Contributions		
Member	\$ 127,846	\$ 124,374
Employer	<u>86,411</u>	<u>84,089</u>
Total contributions	\$ 214,257	\$ 208,463
Net investment income	\$ 23,445	\$ 52,175
Miscellaneous revenue	<u>0</u>	<u>0</u>
2. Total revenue	\$ 237,702	\$ 260,638
Expenditures for the year		
Benefit payments	\$ 173,843	\$ 175,760
Administrative expenses	81	183
Other expenses	<u>1,469</u>	<u>1,393</u>
3. Total expenditures	\$ 175,393	\$ 177,336
4. Change in net assets (2) – (3)	\$ 62,309	\$ 83,302
5. Market value of assets at end of year (1) + (4)	\$ 1,224,926	\$ 1,162,617

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
1. Market value of assets at beginning of year	\$ 67,433	\$ 65,201
Revenue for the year		
Contributions	\$ 66,410	\$ 63,907
Net investment income	<u>996</u>	<u>2,874</u>
2. Total revenue	\$ 67,406	\$ 66,781
Expenditures for the year		
Benefit payments	\$ 65,983	\$ 64,354
Administrative expenses	<u>171</u>	<u>195</u>
3. Total expenditures	\$ 66,154	\$ 64,549
4. Change in net assets (2) – (3)	\$ 1,252	\$ 2,232
5. Market value of assets at end of year (1) + (4)	\$ 68,685	\$ 67,433



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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
1. Market value of assets at beginning of year	\$ 84,384	\$ 82,108
Revenue for the year		
Contributions	\$ 80,831	\$ 78,874
Net investment income	<u>1,146</u>	<u>3,070</u>
2. Total revenue	\$ 81,977	\$ 81,944
Expenditures for the year		
Benefit payments	\$ 83,329	\$ 79,457
Administrative expenses	<u>178</u>	<u>211</u>
3. Total expenditures	\$ 83,507	\$ 79,668
4. Change in net assets (2) – (3)	\$ (1,530)	\$ 2,276
5. Market value of assets at end of year (1) + (4)	\$ 82,854	\$ 84,384

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
1. Market value of assets at beginning of year	\$ 19,348	\$ 18,605
Revenue for the year		
Contributions	\$ 1,990	\$ 1,933
Net investment income	<u>276</u>	<u>823</u>
2. Total revenue	\$ 2,266	\$ 2,756
Expenditures for the year		
Benefit payments	\$ 2,224	\$ 1,954
Administrative expenses	<u>53</u>	<u>59</u>
3. Total expenditures	\$ 2,277	\$ 2,013
4. Change in net assets (2) – (3)	\$ (11)	\$ 743
5. Market value of assets at end of year (1) + (4)	\$ 19,337	\$ 19,348

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
1. Market value of assets at end of prior year	\$ 1,120	\$ 2,378
2. Adjustment to market value of assets	\$ 0	\$ (2,028)
3. Market value of assets at beginning of year	\$ 1,120	\$ 350
Revenue for the year		
Contributions	\$ 1,830	\$ 2,140
Net investment income	<u>0</u>	<u>0</u>
4. Total revenue	\$ 1,830	\$ 2,140
Expenditures for the year		
Benefit payments	\$ 1,471	\$ 1,370
Administrative expenses	<u>0</u>	<u>0</u>
5. Total expenditures	\$ 1,471	\$ 1,370
6. Change in net assets (4) – (5)	\$ 359	\$ 770
7. Market value of assets at end of year (1) + (6)	\$ 1,479	\$ 1,120

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

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

<b>Valuation Date</b>	<b>June 30, 2016</b>	<b>June 30, 2015</b>
1. Market value of assets at beginning of year	\$ 915	\$ 1,736
2. Adjustment to market value of assets	\$ 0	\$ (956)
3. Market value of assets at beginning of year	\$ 915	\$ 780
Revenue for the year		
Contributions	\$ 824	\$ 963
Net investment income	<u>0</u>	<u>0</u>
4. Total revenue	\$ 824	\$ 963
Expenditures for the year		
Benefit payments	\$ 878	\$ 828
Administrative expenses	<u>0</u>	<u>0</u>
5. Total expenditures	\$ 878	\$ 828
6. Change in net assets (4) – (5)	\$ (54)	\$ 135
7. Market value of assets at end of year (1) + (6)	\$ 861	\$ 915

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

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

Valuation Date	June 30, 2016	June 30, 2015
1. Market value of assets at beginning of year	\$ 7	\$ 31
2. Adjustment to market value of assets	\$ 0	\$ (38)
3. Market value of assets at beginning of year	\$ 7	\$ (7)
Revenue for the year		
Contributions	\$ 30	\$ 38
Net investment income	<u>0</u>	<u>0</u>
4. Total revenue	\$ 30	\$ 38
Expenditures for the year		
Benefit payments	\$ 26	\$ 24
Administrative expenses	<u>0</u>	<u>0</u>
5. Total expenditures	\$ 26	\$ 24
6. Change in net assets (4) – (5)	\$ 4	\$ 14
7. Market value of assets at end of year (1) + (6)	\$ 11	\$ 7

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

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

<b>Valuation Date – June 30, 2016</b>	<b>LTD</b>	<b>LTC</b>	<b>TOTAL</b>
1. Market value of assets at beginning of year	\$ 353,373	\$ 61,145	\$ 414,518
Revenue for the Year			
Contributions and miscellaneous revenue	\$ 20,134	\$ 5,022	\$ 25,156
Net investment income	<u>5,911</u>	<u>1,023</u>	<u>6,934</u>
2. Total revenue	\$ 26,045	\$ 6,045	\$ 32,090
Expenditures for the year			
Benefit payments	\$ 30,358	\$ 536	\$ 30,894
Administrative expenses	<u>7,772</u>	<u>116</u>	<u>7,888</u>
3. Total expenditures	\$ 38,130	\$ 652	\$ 38,782
4. Change in net assets (2) – (3)	\$ (12,085)	\$ 5,393	\$ (6,692)
5. Market value of assets at end of year (1) + (4)	\$ 341,288	\$ 66,538	\$ 407,826

<b>Valuation Date – June 30, 2015</b>	<b>LTD</b>	<b>LTC</b>	<b>TOTAL</b>
1. Market value of assets at beginning of year	\$ 355,231	\$ 54,867	\$ 410,098
Revenue for the Year			
Contributions and miscellaneous revenue	\$ 19,458	\$ 4,568	\$ 24,026
Net investment income	<u>15,884</u>	<u>2,454</u>	<u>18,338</u>
2. Total revenue	\$ 35,342	\$ 7,022	\$ 42,364
Expenditures for the year			
Benefit payments	\$ 28,504	\$ 159	\$ 28,663
Administrative expenses	<u>8,696</u>	<u>585</u>	<u>9,281</u>
3. Total expenditures	\$ 37,200	\$ 744	\$ 37,944
4. Change in net assets (2) – (3)	\$ (1,858)	\$ 6,278	\$ 4,420
5. Market value of assets at end of year (1) + (4)	\$ 353,373	\$ 61,145	\$ 414,518

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

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

Valuation Date – June 30, 2016	LTD	LTC	TOTAL
1. Market value of assets at beginning of year	\$ (121)	\$ 121	\$ 0
Revenue for the Year			
Contributions and miscellaneous revenue	\$ 311	\$ 256	\$ 567
Net investment income	<u>0</u>	<u>0</u>	<u>0</u>
2. Total revenue	\$ 311	\$ 256	\$ 567
Expenditures for the year			
Benefit payments	\$ 2	\$ 0	\$ 2
Administrative expenses	<u>553</u>	<u>12</u>	<u>565</u>
3. Total expenditures	\$ 555	\$ 12	\$ 567
4. Change in net assets (2) – (3)	\$ (244)	\$ 244	\$ 0
5. Market value of assets at end of year (1) + (4)	\$ (365)	\$ 365	\$ 0

Valuation Date – June 30, 2015	LTD	LTC	TOTAL
1. Market value of assets at beginning of year	\$ 0	\$ 0	\$ 0
Revenue for the Year			
Contributions and miscellaneous revenue	\$ 193	\$ 177	\$ 370
Net investment income	<u>0</u>	<u>0</u>	<u>0</u>
2. Total revenue	\$ 193	\$ 177	\$ 370
Expenditures for the year			
Benefit payments	\$ 0	\$ 0	\$ 0
Administrative expenses	<u>314</u>	<u>56</u>	<u>370</u>
3. Total expenditures	\$ 314	\$ 56	\$ 370
4. Change in net assets (2) – (3)	\$ (121)	\$ 121	\$ 0
5. Market value of assets at end of year (1) + (4)	\$ (121)	\$ 121	\$ 0

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

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

Valuation Date – June 30, 2016	LTD	LTC	TOTAL
1. Market value of assets at beginning of year	\$ (75)	\$ 75	\$ 0
Revenue for the Year			
Contributions and miscellaneous revenue	\$ 610	\$ 174	\$ 784
Net investment income	<u>0</u>	<u>0</u>	<u>0</u>
2. Total revenue	\$ 610	\$ 174	\$ 784
Expenditures for the year			
Benefit payments	\$ 3	\$ 0	\$ 3
Administrative expenses	<u>760</u>	<u>21</u>	<u>781</u>
3. Total expenditures	\$ 763	\$ 21	\$ 784
4. Change in net assets (2) – (3)	\$ (153)	\$ 153	\$ 0
5. Market value of assets at end of year (1) + (4)	\$ (228)	\$ 228	\$ 0

Valuation Date – June 30, 2015	LTD	LTC	TOTAL
1. Market value of assets at beginning of year	\$ 0	\$ 0	\$ 0
Revenue for the Year			
Contributions and miscellaneous revenue	\$ 324	\$ 181	\$ 505
Net investment income	<u>0</u>	<u>(1)</u>	<u>(1)</u>
2. Total revenue	\$ 324	\$ 180	\$ 504
Expenditures for the year			
Benefit payments	\$ 0	\$ 0	\$ 0
Administrative expenses	<u>399</u>	<u>105</u>	<u>504</u>
3. Total expenditures	\$ 399	\$ 105	\$ 504
4. Change in net assets (2) – (3)	\$ (75)	\$ 75	\$ 0
5. Market value of assets at end of year (1) + (4)	\$ (75)	\$ 75	\$ 0



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

**GROUP LIFE INSURANCE PROGRAM  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2016  
(\$ IN THOUSANDS)**

Valuation Date	June 30, 2016
1. Excess (Shortfall) of invested income for current and previous three years	
a. Current Year	\$ (59,298)
b. First Prior Year	(24,656)
c. Second Prior Year	81,552
d. Third Prior Year	<u>34,863</u>
e. Total for four years	\$ 32,461
2. Deferral of excess (shortfall) of investment income	
a. Current Year at 80%: (1a) x 0.80	\$ (47,438)
b. First Prior Year at 60%: (1b) x 0.60	(14,794)
c. Second Prior Year at 40%: (1c) x 0.40	32,621
d. Third Prior Year at 20%: (1d) x 0.20	<u>6,973</u>
e. Total for four years	\$ (22,638)
3. Market value of assets at end of year	\$ 1,224,926
4. Preliminary actuarial value of assets at end of year: (3) – (2e)	\$ 1,247,564
5. Actuarial value of assets corridor	
a. 80% of market value at end of year: (3) x 0.80	\$ 979,941
b. 120% of market value at end of year: (3) x 1.20	\$ 1,469,911
6. Actuarial value of assets at end of year	\$ 1,247,564

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

**HEALTH INSURANCE CREDIT PROGRAM  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2016  
(\$ IN THOUSANDS)**

Group	State Employees*	Teachers
1. Excess (Shortfall) of invested income for current and previous three years		
a. Current year	\$ (3,733)	\$ (4,666)
b. First Prior Year	(1,868)	(2,868)
c. Second Prior Year	4,143	3,843
d. Third Prior Year	<u>1,687</u>	<u>351</u>
e. Total for four years	\$ 229	\$ (3,340)
2. Deferral of excess (shortfall) of investment income		
a. Current Year at 80%: (1a) x 0.80	\$ (2,986)	\$ (3,733)
b. First Prior Year at 60%: (1b) x 0.60	(1,121)	(1,721)
c. Second Prior Year at 40%: (1c) x 0.40	1,657	1,537
d. Third Prior Year at 20%: (1d) x 0.20	<u>337</u>	<u>70</u>
e. Total for four years	\$ (2,113)	\$ (3,847)
3. Market value of assets at end of year	\$ 68,685	\$ 82,854
4. Preliminary actuarial value of assets at end of year: (3) – (2e)	\$ 70,798	\$ 86,701
5. Actuarial value of assets corridor		
a. 80% of market value at end of year: (3) x 0.80	\$ 54,948	\$ 66,283
b. 120% of market value at end of year: (3) x 1.20	82,422	99,425
6. Actuarial value of assets at end of year	\$ 70,798	\$ 86,701

\*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, 2016  
(\$ IN THOUSANDS)**

Benefit	LTD	LTC
1. Excess (Shortfall) of invested income for current and previous three years		
a. Current year	\$ (18,195)	\$ (3,410)
b. First Prior Year	(9,131)	(1,640)
c. Second Prior Year	27,006	3,611
d. Third Prior Year	<u>13,787</u>	<u>1,601</u>
e. Total for four years	\$ 13,467	\$ 162
2. Deferral of excess (shortfall) of investment income		
a. Current Year at 80%: (1a) x 0.80	\$ (14,556)	\$ (2,728)
b. First Prior Year at 60%: (1b) x 0.60	(5,477)	(984)
c. Second Prior Year at 40%: (1c) x 0.40	10,802	1,444
d. Third Prior Year at 20%: (1d) x 0.20	<u>2,757</u>	<u>320</u>
e. Total for four years	\$ (6,474)	\$ (1,948)
3. Market value of assets at end of year	\$ 341,288	\$ 66,538
4. Preliminary actuarial value of assets at end of year: (3) – (2e)	\$ 347,762	\$ 68,486
5. Actuarial value of assets corridor		
a. 80% of market value at end of year: (3) x 0.80	\$ 273,030	\$ 53,230
b. 120% of market value at end of year: (3) x 1.20	409,546	79,846
6. Actuarial value of assets at end of year	\$ 347,762	\$ 68,486

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

**VIRGINIA LOCAL DISABILITY PROGRAM  
TEACHERS  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2016  
(\$ IN THOUSANDS)**

Benefit	LTD	LTC
1. Excess (Shortfall) of invested income for current and previous three years		
a. Current year	\$ 17	\$ (17)
b. First Prior Year	(38)	(56)
c. Second Prior Year	0	0
d. Third Prior Year	0	0
e. Total for four years	\$ (21)	\$ (73)
2. Deferral of excess (shortfall) of investment income		
a. Current Year at 80%: (1a) x 0.80	\$ 14	\$ (14)
b. First Prior Year at 60%: (1b) x 0.60	(23)	(34)
c. Second Prior Year at 40%: (1c) x 0.40	0	0
d. Third Prior Year at 20%: (1d) x 0.20	0	0
e. Total for four years	\$ (9)	\$ (48)
3. Market value of assets at end of year	\$ (365)	\$ 365
4. Preliminary actuarial value of assets at end of year: (3) – (2e)	\$ (356)	\$ 413
5. Actuarial value of assets corridor		
a. 80% of market value at end of year: (3) x 0.80	\$ (292)	\$ 292
b. 120% of market value at end of year: (3) x 1.20	(438)	438
6. Actuarial value of assets at end of year	\$ (356)	\$ 413

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

**VIRGINIA LOCAL DISABILITY PROGRAM  
POLITICAL SUBDIVISIONS  
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS  
PREPARED AS OF JUNE 30, 2016  
(\$ IN THOUSANDS)**

Benefit	LTD	LTC
1. Excess (Shortfall) of invested income for current and previous three years		
a. Current year	\$ 10	\$ (11)
b. First Prior Year	(25)	(103)
c. Second Prior Year	0	0
d. Third Prior Year	0	0
e. Total for four years	\$ (15)	\$ (114)
2. Deferral of excess (shortfall) of investment income		
a. Current Year at 80%: (1a) x 0.80	\$ 8	\$ (8)
b. First Prior Year at 60%: (1b) x 0.60	(15)	(62)
c. Second Prior Year at 40%: (1c) x 0.40	0	0
d. Third Prior Year at 20%: (1d) x 0.20	0	0
e. Total for four years	\$ (7)	\$ (70)
3. Market value of assets at end of year	\$ (228)	\$ 228
4. Preliminary actuarial value of assets at end of year: (3) – (2e)	\$ (221)	\$ 298
5. Actuarial value of assets corridor		
a. 80% of market value at end of year: (3) x 0.80	\$ (182)	\$ 182
b. 120% of market value at end of year: (3) x 1.20	(273)	273
6. Actuarial value of assets at end of year	\$ (221)	\$ 273

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

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

Valuation Date	June 30, 2016	June 30, 2015
1. Market value of assets at beginning of year	\$ 1,162,617	\$ 1,079,315
2. Net external cash flow during the year	\$ 38,864	\$ 31,310
3. Market value of assets at end of year	\$ 1,224,926	\$ 1,162,617
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ 23,445	\$ 51,992
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 81,383	\$ 75,552
b. Net external cash flow: (2) x (5) x 0.50	<u>1,360</u>	<u>1,096</u>
c. Total: (6a) + (6b)	\$ 82,743	\$ 76,648
7. Excess investment income for the year: (4) – (6c)	\$ (59,298)	\$ (24,656)

**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, 2016	June 30, 2015
1. Market value of assets at beginning of year	\$ 67,433	\$ 65,201
2. Net external cash flow during the year	\$ 256	\$ (447)
3. Market value of assets at end of year	\$ 68,685	\$ 67,433
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ 996	\$ 2,680
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 4,720	\$ 4,564
b. Net external cash flow: (2) x (5) x 0.50	<u>9</u>	<u>(16)</u>
c. Total: (6a) + (6b)	\$ 4,729	\$ 4,548
7. Excess investment income for the year: (4) – (6c)	\$ (3,733)	\$ (1,868)

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

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

Valuation Date	June 30, 2016	June 30, 2015
1. Market value of assets at beginning of year	\$ 84,384	\$ 82,108
2. Net external cash flow during the year	\$ (2,676)	\$ (583)
3. Market value of assets at end of year	\$ 82,854	\$ 84,384
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ 1,146	\$ 2,859
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 5,907	\$ 5,747
b. Net external cash flow: (2) x (5) x 0.50	<u>(95)</u>	<u>(20)</u>
c. Total: (6a) + (6b)	\$ 5,812	\$ 5,727
7. Excess investment income for the year: (4) – (6c)	\$ (4,666)	\$ (2,868)



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

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

<b>June 30, 2016</b>	<b>LTD</b>	<b>LTC</b>
1. Market value of assets at beginning of year	\$ 353,373	\$ 61,145
2. Net external cash flow during the year	\$ (17,996)	\$ 4,370
3. Market value of assets at end of year	\$ 341,288	\$ 66,538
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ 5,911	\$ 1,023
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 24,736	\$ 4,280
b. Net external cash flow: (2) x (5) x 0.50	<u>(630)</u>	<u>153</u>
c. Total: (6a) + (6b)	\$ 24,106	\$ 4,433
7. Excess investment income for the year: (4) – (6c)	\$ (18,195)	\$ (3,410)

<b>June 30, 2015</b>	<b>LTD</b>	<b>LTC</b>
1. Market value of assets at beginning of year	\$ 355,231	\$ 54,867
2. Net external cash flow during the year	\$ (17,000)	\$ 3,939
3. Market value of assets at end of year	\$ 353,373	\$ 61,145
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ 15,142	\$ 2,339
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 24,867	\$ 3,841
b. Net external cash flow: (2) x (5) x 0.50	<u>(594)</u>	<u>138</u>
c. Total: (6a) + (6b)	\$ 24,273	\$ 3,979
7. Excess investment income for the year: (4) – (6c)	\$ (9,139)	\$ (1,640)

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

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

June 30, 2016	LTD	LTC
1. Market value of assets at beginning of year	\$ (121)	\$ 121
2. Net external cash flow during the year	\$ (244)	\$ 244
3. Market value of assets at end of year	\$ (365)	\$ 365
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ 0	\$ 0
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ (8)	\$ 8
b. Net external cash flow: (2) x (5) x 0.50	<u>(9)</u>	<u>9</u>
c. Total: (6a) + (6b)	\$ (17)	\$ 17
7. Excess investment income for the year: (4) – (6c)	\$ 17	\$ (17)

June 30, 2015	LTD	LTC
1. Market value of assets at beginning of year	\$ 0	\$ 0
2. Net external cash flow during the year	\$ (80)	\$ 171
3. Market value of assets at end of year	\$ (121)	\$ 121
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ (41)	\$ (50)
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 0	\$ 0
b. Net external cash flow: (2) x (5) x 0.50	<u>(3)</u>	<u>6</u>
c. Total: (6a) + (6b)	\$ (3)	\$ 6
7. Excess investment income for the year: (4) – (6c)	\$ (38)	\$ (56)

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

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

June 30, 2016	LTD	LTC
1. Market value of assets at beginning of year	\$ (75)	\$ 75
2. Net external cash flow during the year	\$ (153)	\$ 153
3. Market value of assets at end of year	\$ (228)	\$ 228
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ 0	\$ 0
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ (5)	\$ 5
b. Net external cash flow: (2) x (5) x 0.50	<u>(6)</u>	<u>6</u>
c. Total: (6a) + (6b)	\$ (11)	\$ 11
7. Excess investment income for the year: (4) – (6c)	\$ 11	\$ (11)

June 30, 2015	LTD	LTC
1. Market value of assets at beginning of year	\$ 0	\$ 0
2. Net external cash flow during the year	\$ (48)	\$ 172
3. Market value of assets at end of year	\$ (75)	\$ 75
4. Actual investment income during the year based on market value: (3) – (2) – (1)	\$ (27)	\$ (97)
5. Assumed earning rate	7.00%	7.00%
6. Expected earnings for the year		
a. Market value of assets at beginning of year: (1) x (5)	\$ 0	\$ 0
b. Net external cash flow: (2) x (5) x 0.50	<u>(2)</u>	<u>6</u>
c. Total: (6a) + (6b)	\$ (2)	\$ 6
7. Excess investment income for the year: (4) – (6c)	\$ (25)	\$ (103)

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

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

<b>Description</b>	<b>Original Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2013 Legacy UAAL	\$1,735,144	\$1,772,583	\$101,030	\$1,788,561	\$104,061	27 Years
June 30, 2014 Experience (Gain)/Loss	(45,419)	(45,192)	(3,280)	(44,846)	(3,378)	18 Years
June 30, 2015 Experience (Gain)/Loss	(27,163)	(27,163)	(1,904)	(27,027)	(1,961)	19 Years
June 30, 2016 Experience (Gain)/Loss	10,216	n/a	n/a	10,216	716	20 Years
<b>Total</b>		<b>\$1,700,228</b>	<b>\$95,846</b>	<b>\$1,726,904</b>	<b>\$99,438</b>	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$1,726,904
June 30, 2017	1,741,389
June 30, 2018	1,753,695
June 30, 2019	1,763,576
June 30, 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 Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2013 Legacy UAAL	\$889,809	\$909,008	\$51,810	\$917,202	\$53,364	27 Years
June 30, 2014 Experience (Gain)/Loss	1,656	1,648	120	1,635	123	18 Years
June 30, 2015 Experience (Gain)/Loss	(1,294)	(1,294)	(91)	(1,287)	(93)	19 Years
June 30, 2016 Experience (Gain)/Loss	(707)	n/a	n/a	(707)	(50)	20 Years
<b>Total</b>		<b>\$909,362</b>	<b>\$51,839</b>	<b>\$916,843</b>	<b>\$53,344</b>	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$916,843
June 30, 2017	923,944
June 30, 2018	929,830
June 30, 2019	934,364
June 30, 2043	0

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

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

<b>Description</b>	<b>Original Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2013 Legacy UAAL	\$1,190,780	\$1,216,474	\$69,334	\$1,227,439	\$71,414	27 Years
June 30, 2014 Experience (Gain)/Loss	14,338	14,266	1,035	14,157	1,066	18 Years
June 30, 2015 Experience (Gain)/Loss	9,296	9,296	652	9,250	671	19 Years
June 30, 2016 Experience (Gain)/Loss	13,656	n/a	n/a	13,656	958	20 Years
<b>Total</b>		<b>\$1,240,036</b>	<b>\$71,021</b>	<b>\$1,264,502</b>	<b>\$74,109</b>	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$1,264,502
June 30, 2017	1,273,721
June 30, 2018	1,281,206
June 30, 2019	1,286,764
June 30, 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 Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2013 Legacy UAAL	\$23,939	\$24,456	\$1,394	\$24,676	\$1,436	27 Years
June 30, 2014 Experience (Gain)/Loss	(716)	(713)	(52)	(707)	(53)	18 Years
June 30, 2015 Experience (Gain)/Loss	1,837	1,837	129	1,828	133	19 Years
June 30, 2016 Experience (Gain)/Loss	502	n/a	n/a	502	34	20 Years
<b>Total</b>		<b>\$25,580</b>	<b>\$1,471</b>	<b>\$26,299</b>	<b>\$1,550</b>	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$26,299
June 30, 2017	26,481
June 30, 2018	26,626
June 30, 2019	26,730
June 30, 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 Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2013 Legacy UAAL	\$11,900	\$12,157	\$693	\$12,267	\$714	27 Years
June 30, 2014 Experience (Gain)/Loss	(824)	(820)	(60)	(814)	(61)	18 Years
June 30, 2015 Experience (Gain)/Loss	1,155	1,155	81	1,149	83	19 Years
June 30, 2016 Experience (Gain)/Loss	252	n/a	n/a	252	17	20 Years
<b>Total</b>		<b>\$12,492</b>	<b>\$714</b>	<b>\$12,854</b>	<b>\$753</b>	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$12,854
June 30, 2017	12,915
June 30, 2018	12,954
June 30, 2019	12,971
June 30, 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 Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2013 Legacy UAAL	\$447	\$456	\$26	\$460	\$27	27 Years
June 30, 2014 Experience (Gain)/Loss	(1)	(1)	(0)	(1)	(0)	18 Years
June 30, 2015 Experience (Gain)/Loss	41	42	3	41	3	19 Years
June 30, 2016 Experience (Gain)/Loss	(2)	n/a	n/a	(1)	(0)	20 Years
<b>Total</b>		<b>\$497</b>	<b>\$29</b>	<b>\$499</b>	<b>\$30</b>	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$499
June 30, 2017	502
June 30, 2018	505
June 30, 2019	507
June 30, 2043	0

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

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

<b>Description</b>	<b>Original Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2013 Legacy UAAL	(\$130,534)	(\$132,519)	(\$7,554)	(\$133,714)	(\$7,779)	27 Years
June 30, 2014 Experience (Gain)/Loss	(4,810)	(6,004)	(435)	(5,958)	(449)	18 Years
June 30, 2015 Experience (Gain)/Loss	(24,839)	(24,839)	(1,741)	(24,715)	(1,794)	19 Years
June 30, 2016 Experience (Gain)/Loss	(10,975)	n/a	n/a	(10,975)	(770)	20 Years
<b>Total</b>		(\$163,362)	(\$9,730)	(\$175,362)	(\$10,792)	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	(\$175,362)
June 30, 2017	(176,155)
June 30, 2018	(176,659)
June 30, 2019	(176,843)
June 30, 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 Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2014 Experience (Gain)/Loss	11	11	1	11	1	18 Years
June 30, 2015 Experience (Gain)/Loss	118	118	8	117	9	19 Years
June 30, 2016 Experience (Gain)/Loss	254	n/a	n/a	254	18	20 Years
<b>Total</b>		\$129	\$9	\$382	\$28	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$382
June 30, 2017	380
June 30, 2018	377
June 30, 2019	372
June 30, 2043	0

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

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

<b>Description</b>	<b>Original Balance</b>	<b>Outstanding Balance as of June 30, 2015</b>	<b>July 1, 2015 Amortization Payment</b>	<b>Outstanding Balance as of June 30, 2016</b>	<b>July 1, 2016 Amortization Payment</b>	<b>Amortization Period as of June 30, 2016</b>
June 30, 2014 Experience (Gain)/Loss	48	48	4	48	4	18 Years
June 30, 2015 Experience (Gain)/Loss	58	58	4	57	4	19 Years
June 30, 2016 Experience (Gain)/Loss	221	n/a	n/a	221	15	20 Years
<b>Total</b>		\$106	\$8	\$326	\$23	

<b>Date</b>	<b>Projected UAAL (\$ in Thousands)</b>
June 30, 2016	\$326
June 30, 2017	324
June 30, 2018	320
June 30, 2019	316
June 30, 2043	0

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

---

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

<b>Investment Return Rate:</b>	7.00% per annum, compounded annually.
<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 amortization period of the legacy UAAL began at 30 years on June 30, 2013 and this amortization period is to decrease by one year on each subsequent valuation date until the legacy UAAL is fully amortized (amortization period of 0 years). With each subsequent valuation, a new amortization base will be used to amortize that portion of the UAAL not covered by the current balances of the previously established amortization bases. Here, each valuation's newly allocated share of the UAAL will be amortized over a closed 20-year period. In the event this funding policy produces an effective amortization period of greater than 30 years, a 30 year amortization period for the aggregate UAAL is used in accordance with GASB 43 and 45.
<b>Payroll Growth Rate:</b>	3.00% per annum.
<b>Administrative Expenses:</b>	The employer contribution rates include a rate for anticipated non-investment expenses.
<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 but before January 1, 2014, 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 SPORS, VaLORS, and Political Subdivisions with LEOs/Fire Pension Benefit Coverage are in Plan 2.
<b>Hybrid Plan:</b>	State, Teachers, JRS, and Political Subdivisions with General Employee Pension Benefit Coverage members hired (for JRS, appointed or elected to an original term) on or after January 1, 2014 or members in Plan 1 or Plan 2 who elected to opt into the plan during the election window held January 1, 2014 through April 30, 2014. Members of SPORS, VaLORS, and Political Subdivisions with LEOs/Fire Pension Benefit Coverage are not eligible to participate in the Hybrid Plan.

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

---

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

<b>Asset Valuation Method:</b>	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.
<b>Minimum Benefit:</b>	In no event will the death benefit be less than \$8,000 for members who retire with at least 30 years of creditable service. The \$8,000 minimum is assumed to apply to the fiscal year ending June 30, 2016 and is assumed to increase annually, effective July 1, by 2.25% (the same annual increase percentage for any annual post-retirement supplement for retirees, as calculated for employees hired on or after July 1, 2010).
<b>“Life Insurance Only” Retirees:</b>	Results include an estimate of retiree liability for those groups not providing retiree census data. 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:**

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 as follows:

<b>Duration Since Retirement</b>	<b>Participation Rate</b>
First Year	55.0%
Second Year	65.0%
Third Year	70.0%
Fourth Year	75.0%
Fifth Year	80.0%
Sixth Year	85.0%
Seventh Year	90.0%
Eighth Year and Beyond	95.0%

**Participation Rates (continued):**

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

<b>System</b>	<b>Participation</b>
State/JRS	95%
Teachers	90%
SPORS/VaLORS	75%

**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	10%
Teachers	20%
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	6.50%
2 – 3 Years	4.25%
4 or More Years	3.00%

**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
State/JRS	50%
Teachers	35%
SPORS/VaLORS	70%



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

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

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

<b>System</b>	<b>Age of Initial Benefit Receipt</b>
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 Retirees:** Results include an estimate of retiree liability for those groups not providing retiree census data. 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  
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. 45.00% of eligible future disability retirees will utilize the benefit.

Eligible future service retirees from deferred vested status are assumed to utilize the benefit plan as follows:

Duration Since Retirement	Participation Rate
First Year	55.0%
Second Year	65.0%
Third Year	70.0%
Fourth Year	75.0%
Fifth Year	80.0%
Sixth Year	85.0%
Seventh Year	90.0%
Eighth Year and Beyond	95.0%

**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:

Duration Since Retirement	Annual Increase in HIC benefit
1 Year	6.50%
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:** 45% of future eligible deferred vested members 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:

<b>Political Subdivisions and Special Coverage Groups</b>	<b>Age of Initial Benefit Receipt</b>
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. Group A 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. Group B is all other political subdivisions not included in Group A.

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

---

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

<b>Asset Valuation Method:</b>	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.
<b>Health Insurance Credit and Group Life Insurance Benefits</b>	Health Insurance Credit and Group Life Insurance benefits provided by VSDP are valued under the respective plans.
<b>Disability:</b>	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:**

61% of a member's pre-disability income.

**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:

<b>Year of Long-Term Disability</b>	<b>Percentage Receiving Offsets in the Next Year if Currently Not in Receipt</b>	<b>Average Percentage of Full Benefit Paid if in Receipt of Offsets</b>
1	38%	25%
2	32%	25%
3	24%	25%
4	14%	25%
5	14%	25%
6 and Longer	0%	30%

**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 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	0.745
2	0.557
3	0.493
4	0.439
5	0.414
6 and Longer	0.378

**Rates of Termination of Benefits Due to Death or Recovery:**

2012 Group Long Term Disability Valuation Table (2012 GLDT) 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	0.944	0.870
25 - 60	1.016	0.992
61 - 120	1.086	1.083
121 and over	1.066	1.095

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

### **Assumptions and Methods Applicable to the Virginia Sickness and 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.
- Morbidity:** CMC reviewed the rates developed by the prior actuary against rates developed using the Society of Actuaries (SOA) Long Term Care basic experience rate tables and made no modifications. While separate rates for assisted living facility claims are not used, our review indicates the nursing facility rates are reasonable based upon the benefit structure and a comparison to the combined experience produced by the SOA's tables. As experience develops the rates will need to be reviewed and adjusted accordingly.

<b>Unadjusted Claim Incidence Rates</b>				
<b>Attained Age</b>	<b>Nursing Facility</b>		<b>Home Health</b>	
	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>
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.

<b>Claim Incidence Selection Factors</b>			
<b>Actively Employed Members</b>			
<b>Years of VSDP Membership</b>	<b>VSDP Entry Age</b>		
	<b>&lt;50</b>	<b>50 - 64</b>	<b>65+</b>
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

**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. CMC reviewed the rates developed by the prior actuary and made no modifications. As the porting rates have a significant impact on results; experience, as it develops, will need to be reviewed and the rates adjusted accordingly. 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 coverage current for the group by paying a premium. CMC reviewed the rates developed by the prior actuary for adequacy and made no modifications. As experience develops the rates may need to be reviewed and adjusted accordingly.

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)***

---

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

<b>Asset Valuation Method:</b>	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.
<b>Health Insurance Credit and Group Life Insurance Benefits</b>	Health Insurance Credit (if applicable) and Group Life Insurance benefits provided under VLDP are valued under the respective plans.
<b>Disability:</b>	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.

**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:** 61% of a member's pre-disability income.
  
- 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	38%	25%
2	32%	25%
3	24%	25%
4	14%	25%
5	14%	25%
6 and Longer	0%	30%

**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 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	0.745
2	0.557
3	0.493
4	0.439
5	0.414
6 and Longer	0.378

**Rates of Termination of Benefits Due to Death or Recovery:**

2012 Group Long Term Disability Valuation Table (2012 GLDT) 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:

**Adjustment Factor**

Month of Disability	Male	Female
4 - 24	0.944	0.870
25 - 60	1.016	0.992
61 - 120	1.086	1.083
121 and over	1.066	1.095

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

### **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.
- Morbidity:** CMC reviewed the rates developed by the prior actuary against rates developed using the Society of Actuaries (SOA) Long Term Care basic experience rate tables and made no modifications. While separate rates for assisted living facility claims are not used, our review indicates the nursing facility rates are reasonable based upon the benefit structure and a comparison to the combined experience produced by the SOA's tables. As experience develops the rates will need to be reviewed and adjusted accordingly.

<b>Unadjusted Claim Incidence Rates</b>				
<b>Attained Age</b>	<b>Nursing Facility</b>		<b>Home Health</b>	
	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>
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.

<b>Claim Incidence Selection Factors</b>			
<b>Actively Employed Members</b>			
<b>Years of VLDP Membership</b>	<b>VLDP Entry Age</b>		
	<b>&lt;50</b>	<b>50 - 64</b>	<b>65+</b>
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

**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. CMC reviewed the rates developed by the prior actuary and made no modifications. As the porting rates have a significant impact on results; experience, as it develops, will need to be reviewed and the rates adjusted accordingly. 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 coverage current for the group by paying a premium. CMC reviewed the rates developed by the prior actuary for adequacy and made no modifications. As experience develops the rates may need to be reviewed and adjusted accordingly.

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)**

### **STATE\***

#### **NORMAL RETIREMENT ELIGIBILITY:**

Plan 1 Members: 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 Plan Members: 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 Members: 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 Plan Members: 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 – 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 – 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.

\*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 RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set forward 2 years and Females set back 3 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Females set back 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00026	0.00024	0.02257	0.00014	0.00014	0.00745
25	0.00035	0.00031	0.02257	0.00014	0.00015	0.00745
30	0.00051	0.00040	0.02257	0.00018	0.00020	0.00745
35	0.00082	0.00070	0.02257	0.00030	0.00036	0.00745
40	0.00099	0.00092	0.02257	0.00043	0.00048	0.00745
45	0.00128	0.00116	0.02257	0.00063	0.00076	0.00745
50	0.00163	0.00149	0.02512	0.00092	0.00108	0.01154
55	0.00258	0.00247	0.03156	0.00148	0.00198	0.01654
60	0.00437	0.00489	0.03803	0.00272	0.00402	0.02184
65	0.00662	0.00961	0.04498	0.00421	0.00780	0.02803
70	0.00953	0.01641	0.05445	0.00596	0.01344	0.03764
75		0.02854	0.06941		0.02212	0.05223
80		0.05265	0.09215		0.03607	0.07231
85		0.09624	0.12188		0.06041	0.10020
90		0.16928	0.15524		0.11221	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.

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

**STATE**

**RETIREMENT RATES:**

Plan 1 Members: The following rates of retirement are assumed for members eligible to retire.

State Retirement Rates, Plan 1				
Age	Males		Females	
	Years of Service			
	0-29	>=30	0-29	>=30
<=49	0.000	0.000	0.000	0.000
50	0.030	0.100	0.032	0.100
51	0.030	0.100	0.031	0.100
52	0.030	0.100	0.030	0.100
53	0.030	0.100	0.030	0.100
54	0.030	0.100	0.035	0.100
55	0.050	0.100	0.050	0.100
56	0.050	0.100	0.050	0.100
57	0.045	0.100	0.045	0.100
58	0.040	0.100	0.055	0.100
59	0.050	0.100	0.055	0.100
60	0.050	0.100	0.055	0.150
61	0.100	0.150	0.100	0.200
62	0.150	0.250	0.150	0.300
63	0.150	0.200	0.150	0.200
64	0.150	0.200	0.150	0.200
65	0.300	0.300	0.300	0.400
66	0.300	0.250	0.300	0.300
67	0.300	0.250	0.300	0.250
68	0.300	0.200	0.300	0.250
69	0.300	0.200	0.300	0.200
>=70	1.000	1.000	1.000	1.000



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

**STATE**

**RETIREMENT RATES:**

Plan 2 and Hybrid Plan Members: The following rates of retirement are assumed for members eligible to retire.

State Rates of Retirement, Plan 2 and Hybrid Plan														
Males														
Age	Years of Service													
	0-4	5-26*	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
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	0.350
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	0.350	0.100
52	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100
57	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100	0.100
58	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
59	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
60	0.000	0.050	0.050	0.050	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
61	0.000	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
62	0.000	0.150	0.150	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250
63	0.000	0.150	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
64	0.000	0.150	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
65	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
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	0.250
67	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	0.250
68	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	0.200
69	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	0.200
>=70	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

\*Rate is 35% when age plus service equals 90.

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

**STATE**

**RETIREMENT RATES:**

Plan 2 and Hybrid Plan Members: The following rates of retirement are assumed for members eligible to retire.

State Rates of Retirement, Plan 2 and Hybrid Plan															
Females															
Age	Years of Service														
	0-4	5-25*	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
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	0.350
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	0.350	0.100
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	0.350	0.100	0.100
53	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100
54	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100	0.100
58	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
59	0.000	0.000	0.000	0.000	0.000	0.350	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
60	0.000	0.055	0.055	0.055	0.350	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
61	0.000	0.100	0.100	0.100	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
62	0.000	0.150	0.150	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
63	0.000	0.150	0.150	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
64	0.000	0.150	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
65	0.000	0.300	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
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
67	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	0.250
68	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	0.250
69	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	0.200
>=70	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

\*Rate is 35% when age plus service equals 90.

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

---

**STATE**

**DISABILITY RATES:** As shown below for selected ages. 14% of disabilities are assumed to be service related.

<b>State Disability Rates</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
20	0.00090	0.00010
25	0.00090	0.00100
30	0.00180	0.00150
35	0.00180	0.00250
40	0.00180	0.00290
45	0.00360	0.00340
50	0.00450	0.00550
55	0.00540	0.00810
60	0.00720	0.01000
65	0.00630	0.00900
70	0.00000	0.00000

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

**STATE**

**TERMINATION RATES:**

The following withdrawal rates are used based on age and service. (For causes other than death, disability, or retirement)

State Rates of Termination, Plan 1								
Age	Male				Female			
	Years of Service							
	0-2	3-4	5-9	>=10	0-2	3-4	5-9	>=10
20	0.245	0.175	0.175	0.000	0.283	0.198	0.198	0.000
25	0.221	0.130	0.130	0.000	0.256	0.157	0.157	0.000
30	0.199	0.110	0.110	0.050	0.212	0.130	0.130	0.060
35	0.167	0.093	0.093	0.045	0.178	0.110	0.110	0.050
40	0.145	0.075	0.075	0.034	0.155	0.090	0.090	0.036
45	0.129	0.070	0.070	0.023	0.139	0.074	0.074	0.025
50	0.115	0.061	0.061	0.000	0.130	0.063	0.063	0.000
55	0.102	0.060	0.060	0.000	0.125	0.060	0.000	0.000
60	0.106	0.070	0.000	0.000	0.123	0.070	0.000	0.000
65	0.113	0.110	0.000	0.000	0.140	0.120	0.000	0.000
70	0.131	0.140	0.000	0.000	0.249	0.140	0.000	0.000

State Rates of Termination, Plan 2 and Hybrid Plan								
Age	Male				Female			
	Years of Service							
	0-2	3-4	5-9	>=10	0-2	3-4	5-9	>=10
20	0.245	0.175	0.175	0.000	0.283	0.198	0.198	0.000
25	0.221	0.130	0.130	0.000	0.256	0.157	0.157	0.000
30	0.199	0.110	0.110	0.050	0.212	0.130	0.130	0.060
35	0.167	0.093	0.093	0.045	0.178	0.110	0.110	0.050
40	0.145	0.075	0.075	0.034	0.155	0.090	0.090	0.036
45	0.129	0.070	0.070	0.023	0.139	0.074	0.074	0.025
50	0.115	0.061	0.061	0.020	0.130	0.063	0.063	0.020
55	0.102	0.060	0.060	0.004	0.125	0.060	0.060	0.004
60	0.106	0.070	0.000	0.000	0.123	0.070	0.000	0.000
65	0.113	0.110	0.000	0.000	0.140	0.120	0.000	0.000
70	0.131	0.140	0.000	0.000	0.249	0.140	0.000	0.000

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

---

**STATE**

**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 - 2	5.35%
3	4.75
4 - 6	4.45
7	4.35
8	4.25
9 - 10	4.00
11 - 19	3.65
20 or more	3.50

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

---

### **TEACHERS\***

#### **NORMAL RETIREMENT ELIGIBILITY:**

Plan 1 Members: 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 Plan Members: 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 Members: 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 Plan Members: 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 – NON-HYBRID:**

Plan 1 and Plan 2 members are eligible for disability retirement benefits from the first day of employment.

#### **DISABILITY – HYBRID:**

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.

\*The actuarial assumptions for Teachers are also applied to the applicable members of the Optional Retirement Plan (ORP).

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

**TEACHERS**

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set back 3 years and Females set back 5 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Males set back 2 years and Females set back 3 years.

Post-Disablement:

RP-2000 Disabled Life Mortality Table Projected to 2020 with Males set back 1 year and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00021	0.00022	0.01538	0.00012	0.00014	0.00540
25	0.00026	0.00028	0.01737	0.00014	0.00014	0.00562
30	0.00035	0.00036	0.02042	0.00016	0.00018	0.00609
35	0.00051	0.00057	0.02042	0.00022	0.00030	0.00597
40	0.00082	0.00086	0.01961	0.00038	0.00043	0.00551
45	0.00099	0.00104	0.01773	0.00052	0.00063	0.00540
50	0.00128	0.00135	0.01965	0.00081	0.00092	0.00819
55	0.00163	0.00195	0.02280	0.00119	0.00152	0.01409
60	0.00258	0.00382	0.02946	0.00215	0.00315	0.01976
65	0.00437	0.00755	0.03644	0.00356	0.00602	0.02535
70	0.00662	0.01348	0.04497	0.00527	0.01100	0.03405
75		0.02246	0.05729		0.01832	0.04448
80		0.04094	0.08287		0.02964	0.06283
85		0.07640	0.11724		0.04892	0.08884
90		0.13623	0.15309		0.08892	0.13188

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.

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

**TEACHERS**

**RETIREMENT RATES:**

Plan 1 Members: The following rates of retirement are assumed for members eligible to retire.

<b>Teachers Rates of Retirement, Plan 1</b>				
<b>Age</b>	<b>Male</b>		<b>Female</b>	
	<b>Years of Service</b>			
	<b>0-29</b>	<b>&gt;=30</b>	<b>0-29</b>	<b>&gt;=30</b>
<=49	0.000	0.000	0.000	0.000
50	0.020	0.175	0.020	0.150
51	0.020	0.175	0.024	0.150
52	0.020	0.175	0.027	0.150
53	0.023	0.175	0.024	0.150
54	0.040	0.175	0.037	0.150
55	0.057	0.225	0.061	0.225
56	0.046	0.225	0.054	0.225
57	0.045	0.225	0.057	0.225
58	0.066	0.225	0.062	0.225
59	0.070	0.225	0.075	0.225
60	0.075	0.225	0.085	0.225
61	0.110	0.300	0.120	0.300
62	0.170	0.350	0.170	0.350
63	0.140	0.350	0.160	0.350
64	0.180	0.300	0.165	0.350
65	0.300	0.400	0.300	0.350
66	0.300	0.400	0.300	0.350
67	0.300	0.400	0.300	0.350
68	0.300	0.400	0.300	0.350
69	0.300	0.400	0.300	0.350
>=70	1.000	1.000	1.000	1.000



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

**TEACHERS**

**RETIREMENT RATES:**

Plan 2 and Hybrid Plan Members: The following rates of retirement are assumed for members eligible to retire.

Teachers Rates of Retirement, Plan 2 and Hybrid Plan																	
Males																	
Age	Years of Service																
	0-4	5-21*	22-23*	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
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	0.400
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	0.400	0.175
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	0.400	0.175	0.175
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	0.400	0.175	0.175	0.175
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	0.400	0.175	0.175	0.175	0.175
55	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.225	0.225	0.225	0.225	0.225
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.225	0.225	0.225	0.225	0.225	0.225
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
60	0.000	0.075	0.075	0.075	0.075	0.075	0.400	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
61	0.000	0.110	0.110	0.110	0.110	0.110	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
62	0.000	0.170	0.170	0.170	0.170	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350
63	0.000	0.140	0.140	0.140	0.140	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350
64	0.000	0.180	0.180	0.180	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
65	0.000	0.300	0.300	0.300	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
66	0.000	0.300	0.300	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
67	0.000	0.300	0.300	0.400	0.400	0.400	0.300	0.300	0.300	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
68	0.000	0.300	0.400	0.400	0.400	0.400	0.300	0.300	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
69	0.000	0.300	0.400	0.400	0.400	0.400	0.300	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400	0.400
>=70	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

\*Rate is 40% when age plus service equals 90.

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

Teachers Rates of Retirement, Plan 2 and Hybrid Plan																		
Females																		
Age	Years of Service																	
	0-4	5-21*	22	23	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
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	0.350
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	0.350	0.150
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	0.350	0.150	0.150
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	0.350	0.150	0.150	0.150
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	0.350	0.150	0.150	0.150	0.150
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	0.350	0.225	0.225	0.225	0.225	0.225
56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.225	0.225	0.225	0.225	0.225	0.225
57	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.225	0.225	0.225	0.225	0.225	0.225	0.225
58	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
59	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
60	0.000	0.085	0.085	0.085	0.085	0.085	0.085	0.350	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
61	0.000	0.120	0.120	0.120	0.120	0.120	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300
62	0.000	0.170	0.170	0.170	0.170	0.170	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.350
63	0.000	0.160	0.160	0.160	0.160	0.160	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.350
64	0.000	0.165	0.165	0.165	0.165	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.350
65	0.000	0.300	0.300	0.300	0.400	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.350
66	0.000	0.300	0.300	0.400	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	0.350
67	0.000	0.300	0.400	0.350	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	0.350
68	0.000	0.300	0.350	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	0.350
69	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	0.350
>=70	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

\*Rate is 35% when age plus service equals 90.

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

---

**TEACHERS**

**DISABILITY RATES:** As shown below for selected ages.

<b>Teachers Disability Rates</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
20	0.00000	0.00000
25	0.00008	0.00004
30	0.00010	0.00010
35	0.00018	0.00030
40	0.00021	0.00036
45	0.00099	0.00042
50	0.00133	0.00090
55	0.00195	0.00204
60	0.00308	0.00240
65	0.00276	0.00330
70	0.00000	0.00000

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

**TEACHERS**

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

Teachers Rates of Termination, Plan 1								
Age	Male				Female			
	Years of Service							
	0-2	3-5	5-9	>=10	0-2	3-4	5-9	>=10
20	0.182	0.143	0.143	0.008	0.159	0.160	0.160	0.000
25	0.154	0.118	0.118	0.008	0.146	0.120	0.120	0.150
30	0.149	0.090	0.090	0.037	0.164	0.110	0.110	0.047
35	0.141	0.073	0.073	0.031	0.149	0.090	0.090	0.039
40	0.141	0.070	0.070	0.025	0.127	0.075	0.075	0.028
45	0.147	0.075	0.075	0.019	0.117	0.064	0.064	0.021
50	0.138	0.070	0.070	0.000	0.118	0.058	0.058	0.000
55	0.143	0.070	0.000	0.000	0.124	0.058	0.000	0.000
60	0.166	0.080	0.000	0.000	0.129	0.077	0.000	0.000
65	0.170	0.083	0.000	0.000	0.130	0.080	0.000	0.000
70	0.170	0.083	0.000	0.000	0.130	0.080	0.000	0.000

Teachers Rates of Termination, Plan 2 and Hybrid Plan								
Age	Male				Female			
	Years of Service							
	0-2	3-4	5-9	>=10	0-2	3-4	5-9	>=10
20	0.182	0.143	0.143	0.008	0.159	0.160	0.160	0.000
25	0.154	0.118	0.118	0.008	0.146	0.120	0.120	0.150
30	0.149	0.090	0.090	0.037	0.164	0.110	0.110	0.047
35	0.141	0.073	0.073	0.031	0.149	0.090	0.090	0.039
40	0.141	0.070	0.070	0.025	0.127	0.075	0.075	0.028
45	0.147	0.075	0.075	0.019	0.117	0.064	0.064	0.021
50	0.138	0.070	0.070	0.016	0.118	0.058	0.058	0.018
55	0.143	0.070	0.070	0.003	0.124	0.058	0.058	0.003
60	0.166	0.080	0.000	0.000	0.129	0.077	0.000	0.000
65	0.170	0.083	0.000	0.000	0.130	0.080	0.000	0.000
70	0.170	0.083	0.000	0.000	0.130	0.080	0.000	0.000

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

---

**TEACHERS**

**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	5.95%
2	5.85
3	5.85
4 - 6	5.45
7 - 9	5.35
10 - 12	4.85
13 - 14	4.75
15 - 16	4.65
17	4.55
18 - 19	4.45
20 or more	3.50

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

---

### **SPORS**

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

**SPORS**

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set forward 5 years and Females set back 3 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Females set back 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00031	0.00024	0.02257	0.00014	0.00014	0.00745
25	0.00040	0.00031	0.02257	0.00014	0.00015	0.00745
30	0.00070	0.00040	0.02257	0.00018	0.00020	0.00745
35	0.00092	0.00070	0.02257	0.00030	0.00036	0.00745
40	0.00116	0.00092	0.02257	0.00043	0.00048	0.00745
45	0.00149	0.00116	0.02257	0.00063	0.00076	0.00745
50	0.00206	0.00149	0.02512	0.00092	0.00108	0.01154
55	0.00353	0.00247	0.03156	0.00148	0.00198	0.01654
60	0.00571	0.00489	0.03803	0.00272	0.00402	0.02184
65	0.00733	0.00961	0.04498	0.00421	0.00780	0.02803
70	0.01869	0.01641	0.05445	0.00596	0.01344	0.03764
75		0.02854	0.06941		0.02212	0.05223
80		0.05265	0.09215		0.03607	0.07231
85		0.09624	0.12188		0.06041	0.10020
90		0.16928	0.15524		0.11221	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.

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

---

**SPORS**

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

<b>SPORS Rates of Retirement</b>		
<b>Age</b>	<b>Years of Service</b>	
	<b>Less Than 25</b>	<b>25 or More</b>
<=49	0.000	0.000
50	0.100	0.150
51	0.100	0.150
52	0.100	0.150
53	0.100	0.150
54	0.100	0.150
55	0.100	0.150
56	0.100	0.150
57	0.100	0.150
58	0.120	0.200
59	0.120	0.200
60	0.250	0.400
61	0.350	0.400
62	0.500	1.000
63	0.500	1.000
>=64	1.000	1.000



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

---

**SPORS**

**DISABILITY RATES:** As shown below for selected ages. 60% of disabilities are assumed to be service related.

<b>SPORS Rates of Disability</b>	
<b>Age</b>	<b>Unisex</b>
<=29	0.00000
30	0.00028
35	0.00134
40	0.00210
45	0.00411
50	0.00675
55	0.01001
>=60	0.00000

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

**SPORS**

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

SPORS Rates of Termination												
Age	Males											
	Years of Service											
	0	1	2	3	4	5	6	7	8	9	>=10	
20	0.075	0.075	0.075	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.210	0.030
25	0.075	0.075	0.075	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.030
30	0.075	0.075	0.075	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.030
35	0.075	0.075	0.075	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.024
40	0.075	0.075	0.075	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.018
45	0.100	0.100	0.100	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.014
50	0.100	0.100	0.100	0.045	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
55	0.100	0.100	0.100	0.067	0.067	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.100	0.100	0.100	0.075	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000
65	0.100	0.100	0.100	0.075	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000
70	0.100	0.100	0.100	0.075	0.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000

SPORS Rates of Termination											
Age	Females										
	Years of Service										
	0	1	2	3	4	5	6	7	8	9	>=10
20	0.184	0.125	0.101	0.108	0.116	0.122	0.123	0.096	0.070	0.053	0.036
25	0.183	0.133	0.108	0.105	0.104	0.105	0.102	0.083	0.066	0.054	0.044
30	0.181	0.144	0.119	0.102	0.091	0.084	0.078	0.069	0.062	0.057	0.055
35	0.170	0.144	0.121	0.100	0.085	0.074	0.067	0.063	0.062	0.060	0.061
40	0.152	0.135	0.117	0.098	0.084	0.074	0.067	0.065	0.064	0.062	0.062
45	0.127	0.117	0.108	0.098	0.090	0.082	0.077	0.075	0.068	0.064	0.059
50	0.094	0.091	0.093	0.100	0.101	0.100	0.098	0.092	0.075	0.066	0.052
55	0.052	0.057	0.074	0.102	0.119	0.126	0.129	0.118	0.084	0.067	0.041
60	0.010	0.013	0.049	0.106	0.142	0.162	0.171	0.151	0.096	0.068	0.026
65	0.000	0.000	0.015	0.111	0.171	0.205	0.222	0.191	0.110	0.069	0.006
70	0.000	0.000	0.000	0.119	0.210	0.264	0.291	0.246	0.128	0.071	0.000

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

---

**SPORS**

**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 - 4	4.75%
5	4.65
6 - 9	4.40
10 - 19	4.00
20 or more	3.50

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

---

### **JRS**

#### **WEIGHTED SERVICE CREDIT:**

Plan 1 Members: 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 Plan Members: 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 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 – NON-HYBRID:**

Plan 1 and Plan 2 members are eligible for disability retirement benefits from the first day of employment.

#### **DISABILITY – HYBRID:**

Hybrid Plan members are eligible from the first day of employment for work-related disability benefits, but must have a minimum of one year of service to be eligible for non-work related disability benefits.

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

JRS

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set forward 2 years and Females set back 3 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Females set back 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00026	0.00024	0.02257	0.00014	0.00014	0.00745
25	0.00035	0.00031	0.02257	0.00014	0.00015	0.00745
30	0.00051	0.00040	0.02257	0.00018	0.00020	0.00745
35	0.00082	0.00070	0.02257	0.00030	0.00036	0.00745
40	0.00099	0.00092	0.02257	0.00043	0.00048	0.00745
45	0.00128	0.00116	0.02257	0.00063	0.00076	0.00745
50	0.00163	0.00149	0.02512	0.00092	0.00108	0.01154
55	0.00258	0.00247	0.03156	0.00148	0.00198	0.01654
60	0.00437	0.00489	0.03803	0.00272	0.00402	0.02184
65	0.00662	0.00961	0.04498	0.00421	0.00780	0.02803
70	0.00953	0.01641	0.05445	0.00596	0.01344	0.03764
75		0.02854	0.06941		0.02212	0.05223
80		0.05265	0.09215		0.03607	0.07231
85		0.09624	0.12188		0.06041	0.10020
90		0.16928	0.15524		0.11221	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.

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

**JRS**

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

JRS Rates of Retirement								
Age	Service Multiplier = 1.5				Service Multiplier = 2.0			
	Years of Service				Years of Service			
	<=1	2 - 19	20	>=21	<=1	2 - 14	15	>=16
<=59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50
61	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
62	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
63	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
64	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
65	0.00	0.50	0.50	0.15	0.00	0.50	0.50	0.15
66	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
67	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
68	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
69	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
70	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
71	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
72	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
>=73	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00

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

**JRS**

<b>JRS Rates of Retirement</b>								
<b>Age</b>	<b>Service Multiplier = 2.5</b>				<b>Service Multiplier = 3.5</b>			
	<b>Years of Service</b>				<b>Years of Service</b>			
	<b>&lt;=1</b>	<b>2 - 11</b>	<b>12</b>	<b>&gt;=13</b>	<b>&lt;1</b>	<b>1 - 8</b>	<b>9</b>	<b>&gt;=10</b>
<=59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50
61	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
62	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
63	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
64	0.00	0.00	0.50	0.15	0.00	0.00	0.50	0.15
65	0.00	0.50	0.50	0.15	0.00	0.50	0.50	0.15
66	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
67	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
68	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
69	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
70	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
71	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
72	0.00	0.15	0.15	0.15	0.00	0.15	0.15	0.15
>=73	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00

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

---

**JRS**

**DISABILITY RATES:** As shown below for selected ages.

<b>JRS Rates of Disability</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
<=29	0.00000	0.00000
30	0.00007	0.00007
35	0.00037	0.00045
40	0.00142	0.00090
45	0.00292	0.00210
50	0.00480	0.00397
55	0.00712	0.00600
>=60	0.00000	0.00000

**TERMINATION RATES:** There are no assumed rates of withdrawal prior to service retirement (For causes other than death, disability, or retirement).

**SALARY INCREASE RATES:** Salary increase rates are 4.50%.



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

---

### **VaLORS**

#### **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 after reaching age 50 with at least five years of service credit.

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

**VaLORS**

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set forward 5 years and Females set back 3 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Females set back 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00031	0.00024	0.02257	0.00014	0.00014	0.00745
25	0.00040	0.00031	0.02257	0.00014	0.00015	0.00745
30	0.00070	0.00040	0.02257	0.00018	0.00020	0.00745
35	0.00092	0.00070	0.02257	0.00030	0.00036	0.00745
40	0.00116	0.00092	0.02257	0.00043	0.00048	0.00745
45	0.00149	0.00116	0.02257	0.00063	0.00076	0.00745
50	0.00206	0.00149	0.02512	0.00092	0.00108	0.01154
55	0.00353	0.00247	0.03156	0.00148	0.00198	0.01654
60	0.00571	0.00489	0.03803	0.00272	0.00402	0.02184
65	0.00733	0.00961	0.04498	0.00421	0.00780	0.02803
70	0.01869	0.01641	0.05445	0.00596	0.01344	0.03764
75		0.02854	0.06941		0.02212	0.05223
80		0.05265	0.09215		0.03607	0.07231
85		0.09624	0.12188		0.06041	0.10020
90		0.16928	0.15524		0.11221	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.

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

**VaLORS**

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

<b>VaLORS Rates of Retirement</b>		
<b>Age</b>	<b>Years of Service</b>	
	<b>Less Than 25</b>	<b>25 or More</b>
<=49	0.000	0.000
50	0.092	0.250
51	0.090	0.250
52	0.090	0.250
53	0.090	0.250
54	0.100	0.250
55	0.095	0.250
56	0.090	0.250
57	0.120	0.300
58	0.100	0.300
59	0.120	0.400
60	0.200	0.400
61	0.260	0.500
62	0.400	1.000
63	0.200	1.000
64	0.200	1.000
>=65	1.000	1.000

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

---

**VaLORS**

**DISABILITY RATES:** As shown below for selected ages. 50% of disabilities are assumed to be service related.

<b>VaLORS Rates of Disability</b>	
<b>Age</b>	<b>Unisex</b>
20	0.00150
25	0.00300
30	0.00600
35	0.00800
40	0.00800
45	0.01000
50	0.01200
55	0.01200
60	0.01000
65	0.00000
70	0.00000

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

**VaLORS**

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

VaLORS Rates of Termination						
Age	Males			Females		
	Years of Service					
	0-2	3-9	>=10	0-2	3-9	>=10
20	0.250	0.150	0.050	0.200	0.150	0.075
25	0.200	0.150	0.050	0.200	0.150	0.075
30	0.200	0.125	0.050	0.200	0.125	0.060
35	0.200	0.125	0.050	0.200	0.125	0.060
40	0.150	0.105	0.040	0.175	0.105	0.050
45	0.150	0.105	0.040	0.175	0.080	0.040
50	0.150	0.080	0.040	0.175	0.080	0.040
55	0.120	0.065	0.040	0.100	0.120	0.040
60	0.125	0.070	0.040	0.100	0.200	0.040
65	0.150	0.070	0.040	0.100	0.100	0.040
70	0.200	0.070	0.040	0.100	0.100	0.040

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

---

**VaLORS**

**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 - 4	4.75%
5	4.65
6 - 9	4.40
10 - 19	4.00
20 or more	3.50

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

---

### **POLITICAL SUBDIVISIONS GROUP A**

#### **Assumptions for Participants with General Employee Pension Benefit Coverage**

##### **NORMAL RETIREMENT ELIGIBILITY:**

Plan 1 Members: 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 Plan Members: 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 Members: 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 Plan Members: 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 – NON-HYBRID:**

Plan 1 and Plan 2 members are eligible for disability retirement benefits from the first day of employment.

##### **DISABILITY – HYBRID:**

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

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set forward 4 years and Females set back 2 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Males set forward 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00029	0.00025	0.02257	0.00014	0.00014	0.00745
25	0.00037	0.00034	0.02257	0.00014	0.00016	0.00745
30	0.00064	0.00045	0.02257	0.00019	0.00022	0.00745
35	0.00089	0.00076	0.02257	0.00033	0.00038	0.00745
40	0.00110	0.00095	0.02257	0.00045	0.00052	0.00745
45	0.00142	0.00122	0.02257	0.00069	0.00081	0.00745
50	0.00188	0.00167	0.02512	0.00100	0.00119	0.01154
55	0.00320	0.00292	0.03156	0.00168	0.00231	0.01654
60	0.00530	0.00567	0.03803	0.00298	0.00457	0.02184
65	0.00717	0.01109	0.04498	0.00456	0.00878	0.02803
70	0.01465	0.01816	0.05445	0.00628	0.01515	0.03764
75		0.03181	0.06941		0.02394	0.05223
80		0.06013	0.09215		0.03987	0.07231
85		0.10670	0.12188		0.06866	0.10020
90		0.18438	0.15524		0.12400	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.



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

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**RETIREMENT RATES:**

Plan 1 Members: The following rates of retirement are assumed for members eligible to retire.

<b>Group A General Employee Rates of Retirement, Plan 1</b>				
<b>Age</b>	<b>Male</b>		<b>Female</b>	
	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>
<=49	0.000	0.000	0.000	0.000
50	0.035	0.130	0.035	0.156
51	0.035	0.125	0.035	0.122
52	0.035	0.090	0.030	0.109
53	0.035	0.104	0.040	0.113
54	0.035	0.108	0.035	0.104
55	0.050	0.115	0.050	0.143
56	0.055	0.130	0.050	0.108
57	0.049	0.130	0.050	0.117
58	0.045	0.120	0.050	0.140
59	0.045	0.135	0.060	0.134
60	0.060	0.170	0.075	0.128
61	0.105	0.190	0.100	0.177
62	0.175	0.310	0.155	0.280
63	0.130	0.210	0.135	0.277
64	0.165	0.290	0.170	0.183
65	0.300	0.410	0.300	0.296
66	0.300	0.275	0.300	0.311
67	0.300	0.240	0.300	0.332
68	0.300	0.210	0.300	0.325
69	0.300	0.100	0.300	0.225
>=70	1.000	1.000	1.000	1.000

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

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**RETIREMENT RATES:**

Plan 2 and Hybrid Plan Members: The following rates of retirement are assumed for members eligible to retire.

<b>Group A General Employee Rates of Retirement, Plan 2 and Hybrid Plan</b>				
<b>Age</b>	<b>Male</b>		<b>Female</b>	
	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>
<=49	0.000	0.000	0.000	0.000
50	0.000	0.130	0.000	0.156
51	0.000	0.125	0.000	0.122
52	0.000	0.090	0.000	0.109
53	0.000	0.104	0.000	0.113
54	0.000	0.108	0.000	0.104
55	0.000	0.115	0.000	0.143
56	0.000	0.130	0.000	0.108
57	0.000	0.130	0.000	0.117
58	0.000	0.120	0.000	0.140
59	0.000	0.135	0.000	0.134
60	0.060	0.170	0.075	0.128
61	0.105	0.190	0.100	0.177
62	0.175	0.310	0.155	0.280
63	0.130	0.210	0.135	0.277
64	0.165	0.290	0.170	0.183
65	0.300	0.410	0.300	0.296
66	0.300	0.275	0.300	0.311
67	0.300	0.240	0.300	0.332
68	0.300	0.210	0.300	0.325
69	0.300	0.100	0.300	0.225
>=70	1.000	1.000	1.000	1.000

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

---

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**DISABILITY RATES:** As shown below for selected ages.

<b>Group A General Employees Rates of Disability</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
20	0.00000	0.00000
25	0.00060	0.00000
30	0.00060	0.00045
35	0.00060	0.00045
40	0.00180	0.00045
45	0.00180	0.00090
50	0.00240	0.00180
55	0.00480	0.00315
60	0.00720	0.00450
65	0.00540	0.00315
70	0.00000	0.00000

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

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**TERMINATION RATES:**

Plan 1 Members: The following withdrawal rates are used based on age and years of service.  
(For causes other than death, disability, or retirement)

<b>Male Rates of Termination</b>			
<b>Age</b>	<b>Years of Service</b>		
	<b>0 - 2</b>	<b>3 - 9</b>	<b>&gt;=10</b>
25	0.218	0.137	0.000
30	0.185	0.112	0.029
35	0.172	0.097	0.058
40	0.147	0.080	0.037
45	0.143	0.071	0.029
50	0.128	0.060	0.025
55	0.109	0.053	0.007
60	0.126	0.067	0.006
65	0.136	0.082	0.000

<b>Female Rates of Termination</b>			
<b>Age</b>	<b>Years of Service</b>		
	<b>0 - 2</b>	<b>3 - 9</b>	<b>&gt;=10</b>
25	0.233	0.167	0.000
30	0.213	0.141	0.074
35	0.186	0.106	0.051
40	0.160	0.093	0.039
45	0.148	0.077	0.028
50	0.130	0.064	0.026
55	0.119	0.063	0.000
60	0.135	0.062	0.000
65	0.126	0.082	0.000

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

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**TERMINATION RATES:**

Plan 2 and Hybrid Plan Members: The following withdrawal rates are used based on age and years of service. (For causes other than death, disability, or retirement)

<b>Male Rates of Termination</b>			
<b>Age</b>	<b>Years of Service</b>		
	<b>0 - 2</b>	<b>3 - 9</b>	<b>&gt;=10</b>
25	0.218	0.137	0.000
30	0.185	0.112	0.029
35	0.172	0.097	0.058
40	0.147	0.080	0.037
45	0.143	0.071	0.029
50	0.128	0.060	0.025
55	0.109	0.053	0.007
60	0.126	0.067	0.000
65	0.136	0.082	0.000

<b>Female Rates of Termination</b>			
<b>Age</b>	<b>Years of Service</b>		
	<b>0 - 2</b>	<b>3 - 9</b>	<b>&gt;=10</b>
25	0.233	0.167	0.000
30	0.213	0.141	0.074
35	0.186	0.106	0.051
40	0.160	0.093	0.039
45	0.148	0.077	0.028
50	0.130	0.064	0.026
55	0.119	0.063	0.000
60	0.135	0.062	0.000
65	0.126	0.082	0.000

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

---

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**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:

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

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

---

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**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:**

A member is eligible for disability retirement benefits from the first day of employment.

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

**POLITICAL SUBDIVISIONS  
GROUP A  
Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set back 2 years and Females set back 2 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Males set forward 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00022	0.00025	0.02257	0.00014	0.00014	0.00745
25	0.00028	0.00034	0.02257	0.00014	0.00016	0.00745
30	0.00036	0.00045	0.02257	0.00019	0.00022	0.00745
35	0.00057	0.00076	0.02257	0.00033	0.00038	0.00745
40	0.00086	0.00095	0.02257	0.00045	0.00052	0.00745
45	0.00104	0.00122	0.02257	0.00069	0.00081	0.00745
50	0.00135	0.00167	0.02512	0.00100	0.00119	0.01154
55	0.00175	0.00292	0.03156	0.00168	0.00231	0.01654
60	0.00290	0.00567	0.03803	0.00298	0.00457	0.02184
65	0.00488	0.01109	0.04498	0.00456	0.00878	0.02803
70	0.00684	0.01816	0.05445	0.00628	0.01515	0.03764
75		0.03181	0.06941		0.02394	0.05223
80		0.06013	0.09215		0.03987	0.07231
85		0.10670	0.12188		0.06866	0.10020
90		0.18438	0.15524		0.12400	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.



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

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

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

<b>Group A LEOs/Fire Rates of Retirement</b>		
<b>Age</b>	<b>Unisex</b>	
	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>
<=49	0.000	0.000
50	0.090	0.250
51	0.085	0.155
52	0.085	0.145
53	0.085	0.165
54	0.085	0.130
55	0.085	0.180
56	0.085	0.240
57	0.085	0.210
58	0.100	0.240
59	0.135	0.315
60	0.200	0.350
61	0.250	0.350
62	0.300	0.500
63	0.300	0.500
64	0.400	0.500
>=65	1.000	1.000

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

---

**POLITICAL SUBDIVISIONS  
GROUP A  
Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**DISABILITY RATES:** As shown below for selected ages.

<b>Group A LEOs/Fire Rates of Disability</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
20	0.00000	0.00000
25	0.00008	0.00000
30	0.00050	0.00050
35	0.00100	0.00110
40	0.00180	0.00240
45	0.00275	0.00350
50	0.00400	0.00530
55	0.00550	0.00740
60	0.00650	0.00810
65	0.00000	0.00000

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

---

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

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

<b>Group A LEOs/Fire Rates of Termination</b>			
<b>Age</b>	<b>Years of Service</b>		
	<b>0 - 2</b>	<b>3 - 9</b>	<b>&gt;=10</b>
25	0.078	0.068	0.000
30	0.082	0.056	0.021
35	0.080	0.044	0.024
40	0.074	0.043	0.017
45	0.092	0.046	0.015
50	0.093	0.045	0.028
55	0.083	0.063	0.000
60	0.087	0.065	0.000

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

---

**POLITICAL SUBDIVISIONS  
GROUP A**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**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:

<b>Pay Increase Assumption</b>	
<b>Years of Service</b>	<b>Total Increase (Next Year)</b>
1 – 4	4.75%
5	4.65
6 – 9	4.40
10 - 19	4.00
20 or more	3.50

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

---

### **POLITICAL SUBDIVISIONS GROUP B\***

#### **Assumptions for Participants with General Employee Pension Benefit Coverage**

#### **NORMAL RETIREMENT ELIGIBILITY:**

Plan 1 Members: 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 Plan Members: 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 Members: A member may retire early with unreduced pension benefits after reaching age 50 with at least 30 years 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 Plan Members: 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 – NON-VLDP:**

Plan 1 and Plan 2 members are eligible for disability retirement benefits from the first day of employment.

#### **DISABILITY – VLDP:**

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.

\*The actuarial assumptions for Political Subdivisions Group B are also applied to members of the political subdivisions not providing VRS pension benefits.

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

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set forward 4 years and Females set back 2 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Males set forward 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00029	0.00025	0.02257	0.00014	0.00014	0.00745
25	0.00037	0.00034	0.02257	0.00014	0.00016	0.00745
30	0.00064	0.00045	0.02257	0.00019	0.00022	0.00745
35	0.00089	0.00076	0.02257	0.00033	0.00038	0.00745
40	0.00110	0.00095	0.02257	0.00045	0.00052	0.00745
45	0.00142	0.00122	0.02257	0.00069	0.00081	0.00745
50	0.00188	0.00167	0.02512	0.00100	0.00119	0.01154
55	0.00320	0.00292	0.03156	0.00168	0.00231	0.01654
60	0.00530	0.00567	0.03803	0.00298	0.00457	0.02184
65	0.00717	0.01109	0.04498	0.00456	0.00878	0.02803
70	0.01465	0.01816	0.05445	0.00628	0.01515	0.03764
75		0.03181	0.06941		0.02394	0.05223
80		0.06013	0.09215		0.03987	0.07231
85		0.10670	0.12188		0.06866	0.10020
90		0.18438	0.15524		0.12400	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.

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

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**RETIREMENT RATES:**

Plan 1 Members: The following rates of retirement are assumed for members eligible to retire.

<b>Group B General Employees Rates of Retirement, Plan 1</b>				
<b>Age</b>	<b>Male</b>		<b>Female</b>	
	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>
<=49	0.000	0.000	0.000	0.000
50	0.050	0.090	0.040	0.080
51	0.050	0.090	0.045	0.080
52	0.050	0.070	0.045	0.080
53	0.050	0.070	0.045	0.080
54	0.050	0.100	0.045	0.100
55	0.050	0.140	0.055	0.115
56	0.060	0.140	0.050	0.115
57	0.060	0.100	0.050	0.125
58	0.060	0.110	0.050	0.130
59	0.060	0.110	0.050	0.115
60	0.060	0.110	0.075	0.130
61	0.100	0.250	0.075	0.175
62	0.170	0.350	0.170	0.250
63	0.150	0.250	0.130	0.250
64	0.150	0.270	0.130	0.175
65	0.300	0.330	0.300	0.400
66	0.300	0.330	0.300	0.400
67	0.300	0.200	0.300	0.250
68	0.300	0.200	0.300	0.250
69	0.300	0.200	0.300	0.250
>=70	1.000	1.000	1.000	1.000

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

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**RETIREMENT RATES:**

Plan 2 and Hybrid Plan Members: The following rates of retirement are assumed for members eligible to retire.

<b>Group B General Employees Rates of Retirement, Plan 2 and Hybrid Plan</b>				
<b>Age</b>	<b>Male</b>		<b>Female</b>	
	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>
<=49	0.000	0.000	0.000	0.000
50	0.000	0.090	0.000	0.080
51	0.000	0.090	0.000	0.080
52	0.000	0.070	0.000	0.080
53	0.000	0.070	0.000	0.080
54	0.000	0.100	0.000	0.100
55	0.000	0.140	0.000	0.115
56	0.000	0.140	0.000	0.115
57	0.000	0.100	0.000	0.125
58	0.000	0.110	0.000	0.130
59	0.000	0.110	0.000	0.115
60	0.060	0.110	0.075	0.130
61	0.100	0.250	0.075	0.175
62	0.170	0.350	0.170	0.250
63	0.150	0.250	0.130	0.250
64	0.150	0.250	0.130	0.250
65	0.300	0.250	0.300	0.250
66	0.300	0.270	0.300	0.175
67	0.300	0.330	0.300	0.400
68	0.300	0.330	0.300	0.400
69	0.300	0.200	0.300	0.250
>=70	1.000	1.000	1.000	1.000



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

---

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**DISABILITY RATES:** As shown for selected ages.

<b>Group B General Employees Rates of Disability</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
20	0.00018	0.00006
25	0.00012	0.00006
30	0.00060	0.00024
35	0.00114	0.00048
40	0.00144	0.00126
45	0.00186	0.00270
50	0.00312	0.00450
55	0.00510	0.00696
60	0.00816	0.00552
65	0.00558	0.00270
70	0.00000	0.00000

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

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

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

<b>Male Rates of Termination</b>			
<b>Age</b>	<b>Years of Service</b>		
	<b>0 - 2</b>	<b>3 - 9</b>	<b>&gt;=10</b>
25	0.235	0.140	0.000
30	0.210	0.125	0.060
35	0.185	0.105	0.055
40	0.165	0.090	0.040
45	0.155	0.080	0.030
50	0.130	0.065	0.025
55	0.120	0.065	0.010
60	0.120	0.070	0.010
65	0.120	0.080	0.000

<b>Female Rates of Termination</b>			
<b>Age</b>	<b>Years of Service</b>		
	<b>0 - 2</b>	<b>3 - 9</b>	<b>&gt;=10</b>
25	0.255	0.165	0.000
30	0.220	0.140	0.060
35	0.190	0.115	0.060
40	0.165	0.100	0.045
45	0.150	0.080	0.035
50	0.135	0.070	0.030
55	0.125	0.065	0.000
60	0.120	0.070	0.000
65	0.130	0.090	0.000

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

---

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with General Employee Pension Benefit Coverage**

**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:

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

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

---

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**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:**

A member is eligible for disability retirement benefits from the first day of employment.

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

**POLITICAL SUBDIVISIONS  
GROUP B  
Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**MORTALITY RATES:**

Pre-Retirement:

RP-2000 Employee Mortality Table Projected with Scale AA to 2020 with Males set back 2 years and Females set back 2 years.

Post-Retirement:

RP-2000 Combined Mortality Table Projected with Scale AA to 2020 with Males set forward 1 year.

Post-Disablement:

RP-2000 Disabled Life Mortality Table with Males set back 3 years and no provision for future mortality improvement.

Mortality Rates						
Age	Male			Female		
	Pre Retirement	Post Retirement	Post Disablement	Pre Retirement	Post Retirement	Post Disablement
20	0.00022	0.00025	0.02257	0.00014	0.00014	0.00745
25	0.00028	0.00034	0.02257	0.00014	0.00016	0.00745
30	0.00036	0.00045	0.02257	0.00019	0.00022	0.00745
35	0.00057	0.00076	0.02257	0.00033	0.00038	0.00745
40	0.00086	0.00095	0.02257	0.00045	0.00052	0.00745
45	0.00104	0.00122	0.02257	0.00069	0.00081	0.00745
50	0.00135	0.00167	0.02512	0.00100	0.00119	0.01154
55	0.00175	0.00292	0.03156	0.00168	0.00231	0.01654
60	0.00290	0.00567	0.03803	0.00298	0.00457	0.02184
65	0.00488	0.01109	0.04498	0.00456	0.00878	0.02803
70	0.00684	0.01816	0.05445	0.00628	0.01515	0.03764
75		0.03181	0.06941		0.02394	0.05223
80		0.06013	0.09215		0.03987	0.07231
85		0.10670	0.12188		0.06866	0.10020
90		0.18438	0.15524		0.12400	0.14005

Mortality improvement is anticipated under the post-retirement assumption as projected with Scale AA.

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

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

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

<b>Group B LEOs/Fire Rates of Retirement</b>		
<b>Age</b>	<b>Unisex</b>	
	<b>Reduced Retirement</b>	<b>Unreduced Retirement</b>
<=49	0.000	0.000
50	0.085	0.250
51	0.090	0.140
52	0.070	0.120
53	0.080	0.120
54	0.080	0.105
55	0.085	0.175
56	0.085	0.165
57	0.085	0.185
58	0.095	0.190
59	0.115	0.285
60	0.200	0.350
61	0.250	0.350
62	0.300	0.500
63	0.300	0.500
64	0.400	0.500
>=65	1.000	1.000

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

---

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**DISABILITY RATES:** As shown below for selected ages. 60% of disabled cases are assumed to be service related.

<b>Group B LEOs/Fire Rates of Disability</b>	
<b>Age</b>	<b>Unisex</b>
20	0.00000
25	0.00000
30	0.00030
35	0.00068
40	0.00113
45	0.00285
50	0.00383
55	0.00480
60	0.00638
65	0.00000

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

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

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

Male Rates of Termination			
Age	Years of Service		
	0 - 2	3 - 9	>=10
25	0.130	0.085	0.000
30	0.110	0.075	0.050
35	0.110	0.070	0.038
40	0.100	0.060	0.028
45	0.130	0.060	0.024
50	0.110	0.060	0.032
55	0.150	0.080	0.005
60	0.110	0.100	0.005
65	0.220	0.108	0.050

Female Rates of Termination			
Age	Years of Service		
	0 - 2	3 - 9	>=10
25	0.130	0.100	0.000
30	0.120	0.080	0.045
35	0.140	0.080	0.045
40	0.140	0.070	0.035
45	0.120	0.060	0.035
50	0.120	0.060	0.035
55	0.120	0.050	0.005
60	0.120	0.050	0.005
65	0.224	0.108	0.050



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

---

**POLITICAL SUBDIVISIONS  
GROUP B**

**Assumptions for Participants with LEOs/Fire Pension Benefit Coverage**

**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:

<b>Pay Increase Assumption</b>	
<b>Years of Service</b>	<b>Total Increase (Next Year)</b>
1 – 4	4.75%
5	4.65
6 – 9	4.40
10 - 19	4.00
20 or more	3.50

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

---

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 7.00%). 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**

### **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 Minnesota Life which in turn pays the life insurance proceeds to the beneficiaries. Payments for postemployment benefits are made by Minnesota Life 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 (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)**

**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.

**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.

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

**HEALTH INSURANCE CREDIT PROGRAM (CONTINUED)**

**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. 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, Pittsylvania County and the City of Roanoke have chosen to provide an additional health insurance credit of \$1.00 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 to constitutional officers, employees of constitutional officers, general registrars, employees of general registrars, and local social service employees.

**SPECIAL COVERGE 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.

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

**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.

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

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

**VIRGINIA SICKNESS AND DISABILITY PROGRAM (continued)**

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 coverage current 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)**

**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 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.

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.



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

**VIRGINIA LOCAL DISABILITY PROGRAM (continued)**

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 coverage current for the actively employed group by paying a premium based upon the member's age at entry into VLDP.

**Schedule G – Schedule of Active Member Data**

**GROUP LIFE INSURANCE PROGRAM  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	3,205	4,601	34							7,840
25 - 29	4,681	21,957	5,001	68						31,707
30 - 34	3,026	14,428	15,395	4,991	37					37,877
35 - 39	2,316	10,528	10,427	13,448	3,383	19				40,121
40 - 44	2,024	8,959	8,812	9,832	10,182	2,190	29			42,028
45 - 49	1,823	8,878	9,286	9,964	9,654	7,926	2,594	62		50,187
50 - 54	1,553	7,147	8,431	9,428	8,404	6,039	6,888	2,439	86	50,415
55 - 59	1,123	5,312	6,801	8,463	8,297	5,477	5,689	4,805	2,304	48,271
60 - 64	553	3,185	4,364	5,694	6,099	4,586	4,489	2,959	4,210	36,139
65 - 69	154	1,077	1,737	2,247	2,284	1,729	1,689	1,095	1,722	13,734
70 & Up	57	384	581	773	675	461	459	307	662	4,359
<b>Totals</b>	20,515	86,456	70,869	64,908	49,015	28,427	21,837	11,667	8,984	362,678

**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, 2016**

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	1,338	1,262	11							2,611
25 - 29	1,900	5,424	908	19						8,251
30 - 34	1,199	5,130	3,141	908	5					10,383
35 - 39	921	4,145	3,217	2,410	649	8				11,350
40 - 44	706	3,053	3,011	2,525	1,930	462	8			11,695
45 - 49	604	2,736	2,751	2,863	2,436	1,675	649	25		13,739
50 - 54	577	2,271	2,481	2,472	2,501	1,862	1,953	783	40	14,940
55 - 59	389	1,820	2,114	2,297	2,373	1,753	2,043	1,507	991	15,287
60 - 64	190	1,141	1,535	1,729	1,862	1,439	1,596	1,208	1,818	12,518
65 - 69	42	326	578	761	791	653	724	520	961	5,356
70 & Up	13	79	134	205	251	162	238	165	463	1,710
<b>Totals</b>	<b>7,879</b>	<b>27,387</b>	<b>19,881</b>	<b>16,189</b>	<b>12,798</b>	<b>8,014</b>	<b>7,211</b>	<b>4,208</b>	<b>4,273</b>	<b>107,840</b>

**Schedule G – Schedule of Active Member Data (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
TEACHERS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	428	2,082	5	0	0	0	0	0	0	2,515
25 - 29	823	11,257	2,543	3	0	0	0	0	0	14,626
30 - 34	532	5,617	8,311	2,539	5	0	0	0	0	17,004
35 - 39	473	3,697	4,345	7,669	1,642	2	0	0	0	17,828
40 - 44	458	3,374	3,436	4,545	5,393	984	2	0	0	18,192
45 - 49	434	3,578	3,877	4,392	4,328	4,066	961	5	0	21,641
50 - 54	296	2,482	3,344	4,243	3,451	2,378	2,919	835	11	19,959
55 - 59	191	1,487	2,361	3,678	3,627	2,268	2,079	2,076	691	18,458
60 - 64	91	745	1,229	2,237	2,626	2,033	1,813	1,040	1,556	13,370
65 - 69	24	221	424	733	894	664	615	375	546	4,496
70 & Up	14	49	79	163	161	120	114	75	154	929
<b>Totals</b>	3,764	34,589	29,954	30,202	22,127	12,515	8,503	4,406	2,958	149,018

**Schedule G – Schedule of Active Member Data (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
POLITICAL SUBDIVISIONS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	311	286	2							599
25 - 29	377	1,091	281	6						1,755
30 - 34	260	749	715	269	5					1,998
35 - 39	201	610	595	590	153	1				2,150
40 - 44	189	620	532	568	421	114	4			2,448
45 - 49	179	630	629	623	503	335	181	5		3,085
50 - 54	158	571	619	628	478	267	331	135	8	3,195
55 - 59	120	523	523	592	481	258	297	169	85	3,048
60 - 64	62	321	414	430	307	200	223	101	125	2,183
65 - 69	31	141	185	198	144	87	72	35	41	934
70 & Up	9	66	103	107	69	33	29	15	20	451
<b>Totals</b>	1,897	5,608	4,598	4,011	2,561	1,295	1,137	460	279	21,846

**Schedule G – Schedule of Active Member Data (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
CONSTITUTIONAL OFFICERS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	221	238	2							461
25 - 29	268	866	235	7						1,376
30 - 34	141	458	556	229	2					1,386
35 - 39	103	293	368	518	185					1,467
40 - 44	76	228	257	340	518	137	1			1,557
45 - 49	78	224	274	314	435	410	150	4		1,889
50 - 54	54	180	239	262	328	259	241	106	8	1,677
55 - 59	43	129	167	203	265	154	123	117	72	1,273
60 - 64	20	63	98	138	167	109	77	69	90	831
65 - 69	2	22	58	71	65	31	46	17	37	349
70 & Up	1	2	10	16	10	18	13	11	25	106
<b>Totals</b>	1,007	2,703	2,264	2,098	1,975	1,118	651	324	232	12,372

**Schedule G – Schedule of Active Member Data (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
SOCIAL SERVICE EMPLOYEES  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	55	45								100
25 - 29	147	273	31							451
30 - 34	115	282	163	31	1					592
35 - 39	66	224	164	142	32					628
40 - 44	70	162	144	145	127	13				661
45 - 49	56	169	135	143	133	92	24			752
50 - 54	36	104	129	126	122	101	79	21		718
55 - 59	27	77	103	111	112	78	93	82	33	716
60 - 64	10	43	71	71	83	77	72	46	79	552
65 - 69	1	17	27	27	29	28	30	20	29	208
70 & Up		1	4	9	4	5	8	1	8	40
<b>Totals</b>	583	1,397	971	805	643	394	306	170	149	5,418

**Schedule G – Schedule of Active Member Data (continued)**

**HEALTH INSURANCE CREDIT PROGRAM  
REGISTRARS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	2	3								5
25 - 29	2	2	1							5
30 - 34	1	3	5							9
35 - 39	2	4	3	5	1					15
40 - 44	1	5	4	4	2	1				17
45 - 49	4	3	3	8	2	2	1			23
50 - 54	3	6	5	8	5	5	1	2		35
55 - 59	2	12	7	9	7	3	3	1		44
60 - 64		6	5	4	4	4	4	1	2	30
65 - 69		2	4	4		5	6	2		23
70 & Up		1	1	2	1	4			1	10
<b>Totals</b>	17	47	38	44	22	24	15	6	3	216



**Schedule G – Schedule of Active Member Data (continued)**

**VIRGINIA SICKNESS AND DISABILITY PROGRAM  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	1,244	870	7							2,121
25 - 29	1,725	4,083	728	13						6,549
30 - 34	1,041	3,419	2,591	799	5					7,855
35 - 39	817	2,602	2,357	2,027	542	8				8,353
40 - 44	625	2,142	2,087	1,835	1,409	269	6			8,373
45 - 49	532	2,014	2,040	2,052	1,654	979	360	16		9,647
50 - 54	530	1,675	1,965	1,898	1,671	1,049	1,045	420	23	10,276
55 - 59	342	1,376	1,743	1,807	1,635	936	1,103	785	456	10,183
60 - 64	165	818	1,210	1,382	1,315	808	800	575	932	8,005
65 - 69	35	223	440	559	547	335	319	209	496	3,163
70 & Up	10	48	88	144	167	67	80	64	217	885
<b>Totals</b>	7,066	19,270	15,256	12,516	8,945	4,451	3,713	2,069	2,124	75,410

**Schedule G – Schedule of Active Member Data (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
TEACHERS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	111	391								502
25 - 29	216	1,277								1,493
30 - 34	155	511	1							667
35 - 39	122	448	2	1	1					574
40 - 44	112	440	2							554
45 - 49	122	420								542
50 - 54	82	251	2	1		1				337
55 - 59	52	169	1		1					223
60 - 64	20	53	3							76
65 - 69	9	15								24
70 & Up	4	5								9
<b>Totals</b>	1,005	3,980	11	2	2	1	0	0	0	5,001

**Schedule G – Schedule of Active Member Data (continued)**

**VIRGINIA LOCAL DISABILITY PROGRAM  
POLITICAL SUBDIVISIONS  
SCHEDULE OF ACTIVE MEMBER DATA  
AS OF JUNE 30, 2016**

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	226	148								374
25 - 29	379	472								851
30 - 34	282	313	1							596
35 - 39	242	283								525
40 - 44	233	273	1							507
45 - 49	215	286	7							508
50 - 54	200	309	2				1			512
55 - 59	183	257	5		1					446
60 - 64	95	138	1				1			235
65 - 69	28	59								87
70 & Up	11	23								34
<b>Totals</b>	2,094	2,561	17	0	1	0	2	0	0	4,675