June 5, 2017

Ms. Brenda Halpin, Director
State of Connecticut
Office of the State Comptroller
Retirement Services Division
55 Elm Street
Hartford, CT 06106

Dear Ms. Halpin:

Enclosed is the revised "Connecticut State Employees Retirement System Report of the Actuary on the Valuation Prepared as of June 30, 2016".

Please let us know if there are any questions concerning the report.

Sincerely yours,

John J. Garrett, ASA, FCA, MAAA
Edward J. Koebel, FCA, MAAA, EA
Principal and Consulting Actuary
Principal and Consulting Actuary

JJG/EAK:kc

Enc.

S:\2016\Connecticut SERS\Pension\Valuation\CT SERS 6-30-2016 Valuation Report.doc
June 5, 2017

State of Connecticut
State Employees Retirement Commission
55 Elm Street
Hartford, CT 06106

Members of the Commission:

Connecticut General Statutes Section 5-155a governs the operation of the Connecticut State Employees Retirement System (SERS). The actuary makes periodic valuations of the contingent assets and liabilities of the Retirement System at the direction of the Commission. We are pleased to submit the revised report giving the results of the actuarial valuation of the Retirement System prepared as of June 30, 2016. This revision is necessary to incorporate the recent Framework Document between the State and SEBAC and reflect the resulting changes to the required funding for the upcoming biennium.

The purpose of the report is to provide a measure of the funded status of SERS as of June 30, 2016 and to recommend rates of actuarially determined contribution amounts for the fiscal year ending June 30, 2018 and June 30, 2019. The report indicates that annual actuarially determined employer contribution amount of $1,443,110,000 for the fiscal year ending June 30, 2018 and $1,574,537,000 for the fiscal year ending June 30, 2019 is necessary to meet the funding objectives of the System.

Since the previous valuation, the actuarial assumptions and methods have been changed to reflect the latest experience investigation for the five-year period ending June 30, 2015 and the December 8, 2016 Memorandum of Understanding (MOU) agreement between the State and the State Employees Bargaining Agent Coalition (SEBAC). In addition, this revised report reflects the May 22, 2017 Framework Document between the State and SEBAC in regards to the plan provision and assumption changes for current members of SERS. In order for the changes to be in effect, the parties must sign a Tentative Agreement, which the Union membership must ratify, and which is also conditioned on Legislative approval. The Commission would then consider this valuation for adoption.

In preparing the valuation, the actuary relied on data provided by the Comptroller’s Office. While not verifying data at the source, the actuary performed tests for consistency and reasonableness.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Commission are reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The funding objective of the System is that contribution amounts will be sufficient to fully fund the liabilities of System over a reasonable funding period. The funding method determines the unfunded actuarial accrued liability (UAAL) as the excess of actuarial accrued liability over the actuarial value of assets.
In accordance with the MOU agreement dated December 8, 2016, the UAAL as of June 30, 2016 was allocated into two bases. This first base is the portion of the current UAAL attributable to the plan as of 1984 (called the Statutory UAAL base) and the second base is the remainder of the UAAL (called the Transitional UAAL base). The Statutory UAAL base is amortized over the closed 40-year period beginning 1992 while the Transitional UAAL base is amortized over a closed 30-year period beginning in 2016. Amortization payments determined in this valuation are expected to be contributed in the biennium beginning July 1, 2018. To appropriately determine the required funding with the scheduled timing of payments, we have rolled the UAAL bases forward to June 30, 2017 and June 30, 2018 to calculate amortization payments to be made for the respective 2018 and 2019 fiscal years.

This is to certify 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 retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

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

The actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

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

Sincerely yours,

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

Edward J. Koebel, FCA, MAAA, EA
Principal and Consulting Actuary

JJG/EJK:kc
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CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM
REPORT OF THE ACTUARY
ON THE REVISED VALUATION
PREPARED AS OF JUNE 30, 2016

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below:

<table>
<thead>
<tr>
<th>Valuation Date</th>
<th>June 30, 2016</th>
<th>June 30, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of active members</td>
<td>50,019</td>
<td>49,976</td>
</tr>
<tr>
<td>Annual compensation as of Valuation Date</td>
<td>$3,720,751,429</td>
<td>$3,487,576,617</td>
</tr>
<tr>
<td>Retired members and beneficiaries:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>48,191</td>
<td>45,803</td>
</tr>
<tr>
<td>Annual allowances</td>
<td>$1,745,785,103</td>
<td>$1,576,606,022</td>
</tr>
<tr>
<td>Deferred Vested Members:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>1,412</td>
<td>1,457</td>
</tr>
<tr>
<td>Annual allowances</td>
<td>$20,316,080</td>
<td>$20,956,362</td>
</tr>
<tr>
<td>Assets:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Value</td>
<td>$10,636,702,645</td>
<td>$10,472,567,077</td>
</tr>
<tr>
<td>Actuarial Value</td>
<td>$11,922,965,860</td>
<td>$10,584,795,257</td>
</tr>
<tr>
<td>Unfunded actuarial accrued liability</td>
<td>$20,387,369,150</td>
<td>$14,920,814,520</td>
</tr>
<tr>
<td>Single Equivalent Amortization period (years)</td>
<td>25.2</td>
<td>17.0</td>
</tr>
<tr>
<td>Funded Ratio based on Actuarial Assets</td>
<td>36.9%</td>
<td>41.5%</td>
</tr>
<tr>
<td>Funded Ratio based on Market Assets</td>
<td>32.9%</td>
<td>41.1%</td>
</tr>
</tbody>
</table>

Actuarially Determined Employer Contribution (ADEC):

| For Fiscal Year Ending June 30, 2016 | $1,514,467,000 |
| For Fiscal Year Ending June 30, 2017 | $1,569,142,000 |
| For Fiscal Year Ending June 30, 2018 | $1,443,110,000 |
| For Fiscal Year Ending June 30, 2019 | $1,574,537,000 |

2. All amounts shown that are prior to June 30, 2010 were developed and/or reported by the prior actuarial firm. The results of the valuation are given in Schedule A.
3. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are given in Section VII and the rates of contribution payable by employers are given in Section V.

4. Schedule B of this report presents the development of the actuarial value of assets.

5. Schedule D details the actuarial assumptions and methods employed. Since the last valuation, changes to the demographic assumptions include changes to the rates of withdraws, disability retirement, service retirement and mortality. The analysis and basis for these changes are included in the latest Experience Investigation for the five-year period ending June 30, 2015. Further, economic assumptions (assumed rates of inflation and investment return), the actuarial cost method, and the UAAL amortization methodology were changed in accordance with the Memorandum of Agreement (MOU) between the State and SEBAC effective December 8, 2016. In addition, several assumptions were revised after the State and SEBAC came to an agreement effective May 22, 2017 for new plan structure. The following changes were made to assumptions:
   a. Three-Year Wage Freeze: We have assumed the rate of across-the-board (wage inflation) is 0% for years beginning July 1, 2016, 2017 and 2018 for each active member. We also reduced promotions and merit salary increases by one-half the rate of increase for the three-year period.

   b. COLA: We have assumed the rate of increase due to the COLA provisions for those retiring on and after July 1, 2022 is 1.95% annually. We assumed the moratorium COLA provision to provide a partial COLA in higher CPI increase environment during the moratorium will result in the first COLA being 0.15% larger (2.10%).

   c. We have assumed that the assumed rates of retirements will increase by 20% of current assumed rates in the year before July 1, 2022 to reflect the potential behavior of future eligible members to avoid the July 1, 2022 COLA change and moratorium.

6. Schedule F gives a summary of the benefit and contribution provisions of the plan. The following changes were made to the plan provisions since the last valuation:
   a. A 3-year freeze on all salary increases for fiscal years ending 2017, 2018 and 2019.
b. The annual COLA for those retiring on or after July 1, 2022 is based on the annual rate of increase in CPI-W from 0.0% to 2.0%, plus 60% of the annual rate of increase in CPI-W from 3.33% to 6.0%, plus 75% of the annual rate of increase in CPI-W above 6.0% and with a cap on the COLA rate of 7.5%.

c. A COLA moratorium for those retiring on or after July 1, 2022 for the first 30 months of retirement benefits. If rate of increase in CPI-W exceeds an annualized rate of 5.5% during the initial 18 month period of receiving retirement benefits, the COLA provided beginning with the 31st monthly benefit includes an additional adjustment based on the annual COLA rate as determined above using the annualized rate over the 18 month period. The COLA rate applied is reduced by 2.5% and then multiplied by 1.5 to reflect the 18 month period.

d. Increase to all non-Tier IV members’ contribution rates by 1.5% of compensation effective July 1, 2017 and an additional 0.5% of compensation effective July 1, 2019.

e. In years where employer contribution increase due to poor asset returns, half the increase is applied to Tier IV member contribution rate of up to 2% in total.

f. Tier IV Hybrid Plan Structure for All New Hires (Non-Hazardous and Hazardous) after July 1, 2017:
   i. Non-Hazardous has same retirement eligibility as Tier III
   ii. Non-hazardous benefit multiplier is 1.30% with no breakpoint
   iii. Hazardous duty requires 25 years of service to retire
   iv. Employees contribute 3% more than Tier III employees into the DB Plan.
   v. Employers contribute 1% and employees must contribute at least 1% to DC portion of Hybrid Plan.

7. The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67) in June 2012 and is effective for plan years beginning after June 15, 2013. GASB 67 replaced GASB 25 for plans and a separate GASB 67 report will be prepared for the Commission. We have provided some supplemental disclosure information and tables in Section VI.

8. As shown in the Summary of Principal Results, the funding ratio is the ratio of the actuarial value of assets to the accrued liability. The funded ratio is an indication of progress in funding the
promised benefits using a long-term, stable funding approach. Since the ratio is less than 100%, there is a need for contributions in addition to the plan’s normal cost. The funded ratio based on the market value of assets is also provided for informational purposes.
## Connecticut State Employees Retirement System

### Comparative Schedule*

<table>
<thead>
<tr>
<th>Valuation Date June 30</th>
<th>Active Members</th>
<th>Retired Lives</th>
<th>Valuation Results ($ thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Payroll ($ thousands)</td>
<td>Average Salary</td>
</tr>
<tr>
<td>2008</td>
<td>53,196</td>
<td>$3,497,445</td>
<td>$65,746</td>
</tr>
<tr>
<td>2010</td>
<td>50,064</td>
<td>$3,295,666</td>
<td>$65,829</td>
</tr>
<tr>
<td>2011</td>
<td>47,778</td>
<td>$3,210,666</td>
<td>$67,200</td>
</tr>
<tr>
<td>2012</td>
<td>47,868</td>
<td>$3,354,682</td>
<td>$70,082</td>
</tr>
<tr>
<td>2014</td>
<td>49,976</td>
<td>$3,487,577</td>
<td>$69,785</td>
</tr>
<tr>
<td>2016</td>
<td>50,019</td>
<td>$3,720,751</td>
<td>$74,387</td>
</tr>
</tbody>
</table>

*All amounts prior to 2010 reported by prior actuarial firm.
SECTION II - MEMBERSHIP

Data regarding the membership of the System for use as a basis for the valuation were furnished by the Comptroller's office. The following tables summarize the membership of the Retirement System as of June 30, 2016 upon which the valuation was based. Detailed tabulations of the data are given in Schedule G.

Active Members

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Payroll</th>
<th>Salary</th>
<th>Age*</th>
<th>Service*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I – Hazardous</td>
<td>35</td>
<td>$3,867,315</td>
<td>$110,495</td>
<td>58.7</td>
<td>31.9</td>
</tr>
<tr>
<td>Tier I – Plan B</td>
<td>1,428</td>
<td>140,292,521</td>
<td>98,244</td>
<td>59.5</td>
<td>34.6</td>
</tr>
<tr>
<td>Tier I – Plan C</td>
<td>45</td>
<td>4,067,185</td>
<td>90,382</td>
<td>61.1</td>
<td>34.4</td>
</tr>
<tr>
<td>Tier II – Hazardous</td>
<td>1,512</td>
<td>153,262,541</td>
<td>101,364</td>
<td>51.0</td>
<td>22.5</td>
</tr>
<tr>
<td>Tier II – Others</td>
<td>11,204</td>
<td>995,351,864</td>
<td>88,839</td>
<td>54.9</td>
<td>24.9</td>
</tr>
<tr>
<td>Tier IIA – Hazardous</td>
<td>5,957</td>
<td>489,700,682</td>
<td>82,206</td>
<td>44.0</td>
<td>12.5</td>
</tr>
<tr>
<td>Tier IIA – Others</td>
<td>16,063</td>
<td>1,141,771,811</td>
<td>71,081</td>
<td>48.4</td>
<td>11.3</td>
</tr>
<tr>
<td>Tier III – Hazardous</td>
<td>2,551</td>
<td>156,526,887</td>
<td>61,359</td>
<td>34.4</td>
<td>2.5</td>
</tr>
<tr>
<td>Tier III – Hybrid Plan</td>
<td>2,087</td>
<td>187,238,827</td>
<td>89,717</td>
<td>50.4</td>
<td>12.7</td>
</tr>
<tr>
<td>Tier III – Others</td>
<td>9,137</td>
<td>448,671,796</td>
<td>49,105</td>
<td>38.7</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50,019</td>
<td>$3,720,751,429</td>
<td>$74,387</td>
<td>47.3</td>
<td>13.5</td>
</tr>
</tbody>
</table>

*Years

Of the 50,019 active members, 36,320 are vested and 13,699 are non-vested.
## Retired Lives

<table>
<thead>
<tr>
<th>Type of Benefit Payment</th>
<th>No.</th>
<th>Annual Benefits</th>
<th>Benefit</th>
<th>Age*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retired – Pre 1980</td>
<td>966</td>
<td>$17,718,533</td>
<td>$18,342</td>
<td>89.8</td>
</tr>
<tr>
<td>Retired – 1980 - 1997</td>
<td>12,048</td>
<td>393,601,362</td>
<td>32,669</td>
<td>81.1</td>
</tr>
<tr>
<td>Retired – 1997 - 2011</td>
<td>24,358</td>
<td>944,154,694</td>
<td>38,762</td>
<td>68.1</td>
</tr>
<tr>
<td>Retired – 2011+</td>
<td>10,819</td>
<td>390,310,514</td>
<td>36,076</td>
<td>61.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>48,191</td>
<td><strong>$1,745,785,103</strong></td>
<td><strong>$36,226</strong></td>
<td><strong>70.2</strong></td>
</tr>
</tbody>
</table>

*Years

This valuation also includes 1,412 deferred vested members with estimated annual benefits of $20,316,080.
SECTION III - ASSETS

1. As of June 30, 2016, the total market value of assets amounted to $10,636,702,645 as reported by the Comptroller's Office. This amount includes $15,989,968 of receivables as of the valuation date. The estimated investment return for the two plan years since the last valuation were 3.43% and (0.16%), respectively. Schedule C shows receipts and disbursements of the System for the two years preceding the valuation date and a reconciliation of the fund balances at market value.

2. The actuarial value of assets used for the current valuation was $11,922,965,860. The estimated investment return for the two plan years on an actuarial value of assets basis was 8.46% and 5.30%, respectively, which can be compared to the investment return assumed over the two-year period of 8.00% (the change in assumed investment rate of return applies to year following June 30, 2016). Schedule B shows the development of the actuarial value of assets as of June 30, 2016.

3. Schedule C shows receipts and disbursements of the System for the two years preceding the valuation date and a reconciliation of the fund balances at market value.

SECTION IV – COMMENTS ON VALUATION

1. Schedule A of this report outlines the results of the valuation of the Retirement System as of June 30, 2016. The valuation was prepared in accordance with the actuarial assumptions and methods set forth in Schedule D and the actuarial cost method which is described in Schedule E.

2. The valuation shows that the System has a total actuarial accrued liability of $32,310,335,010, of which $22,931,601,402 is for the benefits payable on account of present retired members, beneficiaries of deceased members, and inactive members entitled to deferred vested benefits, and $9,378,733,608 is for the benefits expected to be payable on account of present active members, based on service to the valuation date. Against these liabilities, the System has total present assets for valuation purposes of $11,922,965,860 as of June 30, 2016. When this amount is deducted from
the actuarial accrued liability of $32,310,335,010, there remains $20,387,369,150 as the unfunded actuarial accrued liability (UAAL).

3. The December 8, 2016 Memorandum of Agreement (MOU) between the State and SEBAC contains several changes to the funding methods and assumptions used in developing valuation results. First, the actuarial cost method utilized in the valuation is the Entry Age Normal cost method. This cost method is used to determine the annual normal cost contribution for active members as well as the determination of the unfunded actuarial accrued liability. Second, the amortization of the UAAL is reset to separately amortize the portion attributable to the unfunded liability as of 1984 (Statutory UAAL base) over the period ending June 30, 2032 and the remaining UAAL (Transitional UAAL base) which is funded over a 30-year period ending June 30, 2047. Future actuarial gains and losses will be amortized over closed 25-year periods beginning the year each separate base is established. The December 8, 2016 MOU also changed the amortization method from a level percentage of payroll amortization method to a level dollar method to be phased in over a 5 year period. Finally, on May 22, 2017, the State and SEBAC produced a Framework Document that made changes to the plan structure for current and future members of SERS. The plan and assumption changes were summarized on page 2 and 3. All of these changes, in addition to the change in the assumed rate of inflation (from 2.75% to 2.50%) and the change in the assumed rate of investment return (from 8.00% to 6.90%) are expected to markedly enhance the stability of valuation results in future years.

4. The employer’s contributions to the System consist of normal cost contributions and accrued liability contributions. The normal cost, now determined using the Entry Age Normal cost method, represents the ultimate cost of the benefits and the accrued liability contribution is an addition (reduction in case of a surplus) due to the amortization of the unfunded accrued liability. The projection of valuation results indicates that annual employer normal cost contributions at the amount of $262,733,000 for the 2018 fiscal year are required to provide the currently accruing benefits of the System.
5. The following table provides the roll forward of the UAAL bases to June 30, 2017 and June 30, 2018 and the derivation of the amortization amounts required in accordance with the MOU and Framework Agreement ($ in thousands).

<table>
<thead>
<tr>
<th>UAAL Bases</th>
<th>Statutory Base</th>
<th>Transitional Base</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. UAAL as of June 30, 2016</td>
<td>$4,138,969</td>
<td>$16,248,400</td>
<td>$20,387,369</td>
</tr>
<tr>
<td>2. Actual Payment for FYE 2017</td>
<td>(375,871)</td>
<td>(913,174)</td>
<td>(1,289,045)</td>
</tr>
<tr>
<td>3. Interest on Amounts [(1) x .069 + (2) x .0345]</td>
<td>272,621</td>
<td>1,089,635</td>
<td>1,362,256</td>
</tr>
<tr>
<td>4. Expected Asset (Gain)/Loss Recognition for 2017</td>
<td>0</td>
<td>108,194</td>
<td>108,194</td>
</tr>
<tr>
<td>5. Expected UAAL as of June 30, 2017 (1+2+3+4)</td>
<td>4,035,719</td>
<td>16,533,055</td>
<td>20,568,774</td>
</tr>
<tr>
<td>6. Amortization Payment for FYE 2018</td>
<td>(333,558)</td>
<td>(846,819)</td>
<td>(1,180,377)</td>
</tr>
<tr>
<td>7. Interest on Amounts [(5) x .069 + (6) x .0345]</td>
<td>266,957</td>
<td>1,111,566</td>
<td>1,378,523</td>
</tr>
<tr>
<td>8. Expected Asset (Gain)/Loss Recognition for 2018</td>
<td>0</td>
<td>149,139</td>
<td>149,139</td>
</tr>
<tr>
<td>9. Expected UAAL as of June 30, 2018 (5+6+7+8)</td>
<td>3,969,118</td>
<td>16,646,941</td>
<td>20,916,059</td>
</tr>
<tr>
<td>10. Amortization Payment for FYE 2019</td>
<td>(362,941)</td>
<td>(965,891)</td>
<td>(1,328,832)</td>
</tr>
</tbody>
</table>

1 Includes $6,686,000 for the amortization of the 2017 expected asset loss.
2 Includes $7,398,000 for the amortization of the 2017 expected asset loss and $9,925,000 for the amortization of the 2018 expected asset loss.

6. As shown in the table above, we have determined that an amortization payment of $1,180,377,000 is required in the fiscal year ending June 30, 2018 and an amortization payment of $1,328,832,000 is required in the fiscal year ending June 30, 2019 to amortize the unfunded accrued liability for the respective fiscal years in accordance with the MOU and the Framework Document.

7. Schedule J of this report shows the amortization schedule for the total UAAL.
The following table shows the actuarially determined contribution payable by the employer as determined from the present valuation for the 2017/2018 fiscal year and the 2018/2019 fiscal year.

<table>
<thead>
<tr>
<th>Contribution for</th>
<th>Fiscal Year Ending June 30, 2018</th>
<th>Fiscal Year Ending June 30, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Normal Cost:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service retirement benefits</td>
<td>$378,975,000</td>
<td>$363,035,000</td>
</tr>
<tr>
<td>Disability benefits</td>
<td>2,025,000</td>
<td>1,963,000</td>
</tr>
<tr>
<td>Survivor benefits</td>
<td>20,610,000</td>
<td>19,252,000</td>
</tr>
<tr>
<td>Total Normal Cost</td>
<td>$401,610,000</td>
<td>$384,250,000</td>
</tr>
<tr>
<td>B. Less Member Contributions</td>
<td>(138,877,000)</td>
<td>(138,545,000)</td>
</tr>
<tr>
<td>C. Employer Normal Cost</td>
<td>$262,733,000</td>
<td>$245,705,000</td>
</tr>
<tr>
<td>D. Unfunded Actuarial Accrued Liabilities</td>
<td>1,180,377,000</td>
<td>1,328,832,000</td>
</tr>
<tr>
<td>E. Total (C. + D.)</td>
<td>$1,443,110,000</td>
<td>$1,574,537,000</td>
</tr>
</tbody>
</table>
The following table shows a breakdown by group of the employer normal cost amount with interest to the middle of the 2017/2018 fiscal year and rate as determined in the valuation as of June 30, 2016.

<table>
<thead>
<tr>
<th>Group</th>
<th>Normal Cost</th>
<th>Normal Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I – Hazardous</td>
<td>$675,195</td>
<td>22.52%</td>
</tr>
<tr>
<td>Tier I – Plan B</td>
<td>10,388,234</td>
<td>8.36%</td>
</tr>
<tr>
<td>Tier I – Plan C</td>
<td>59,181</td>
<td>1.82%</td>
</tr>
<tr>
<td>Tier II – Hazardous</td>
<td>23,602,751</td>
<td>18.48%</td>
</tr>
<tr>
<td>Tier II – Others</td>
<td>58,339,773</td>
<td>6.14%</td>
</tr>
<tr>
<td>Tier IIA – Hazardous</td>
<td>69,904,811</td>
<td>14.14%</td>
</tr>
<tr>
<td>Tier IIA – Others</td>
<td>55,973,359</td>
<td>5.00%</td>
</tr>
<tr>
<td>Tier III – Hazardous</td>
<td>15,479,691</td>
<td>9.57%</td>
</tr>
<tr>
<td>Tier III – Hybrid Plan</td>
<td>9,179,224</td>
<td>4.92%</td>
</tr>
<tr>
<td>Tier III – Others</td>
<td>19,130,429</td>
<td>4.04%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>262,732,648</strong></td>
<td><strong>7.28%</strong></td>
</tr>
</tbody>
</table>
SECTION VI – ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board (GASB) issued Statements No. 67 and 68 which replaced Statements No. 25 and 27 for plan years beginning after June 15, 2013. The information required under the new GASB Statements will be issued in separate reports. The following is a distribution of the number of employees by type of membership:

<table>
<thead>
<tr>
<th>GROUP</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirees and beneficiaries currently receiving benefits</td>
<td>48,191</td>
</tr>
<tr>
<td>Terminated employees entitled to benefits but not yet receiving benefits</td>
<td>1,412</td>
</tr>
<tr>
<td>Active plan members</td>
<td>50,019</td>
</tr>
<tr>
<td>Total</td>
<td>99,622</td>
</tr>
</tbody>
</table>

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS
(Dollar amounts in thousands)

<table>
<thead>
<tr>
<th>Actuarial Valuation Date</th>
<th>Actuarial Value of Assets ( a )</th>
<th>Actuarial Accrued Liability (AAL) - PUC ( b )</th>
<th>Unfunded AAL (UAAL) ( b – a )</th>
<th>Funded Ratio ( a / b )</th>
<th>Covered Payroll ( c )</th>
<th>UAAL as a Percentage of Covered Payroll ( ( b – a ) / c )</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/30/2008</td>
<td>$9,990,247</td>
<td>$19,243,373</td>
<td>$9,253,126</td>
<td>51.9%</td>
<td>$3,497,445</td>
<td>264.6%</td>
</tr>
<tr>
<td>6/30/2010</td>
<td>9,349,605</td>
<td>21,054,197</td>
<td>11,704,592</td>
<td>44.4%</td>
<td>3,295,666</td>
<td>355.2</td>
</tr>
<tr>
<td>6/30/2011</td>
<td>10,122,765</td>
<td>21,126,725</td>
<td>11,003,960</td>
<td>47.9%</td>
<td>3,210,666</td>
<td>342.7</td>
</tr>
<tr>
<td>6/30/2012</td>
<td>9,744,986</td>
<td>23,018,752</td>
<td>13,273,766</td>
<td>42.3%</td>
<td>3,354,682</td>
<td>395.7</td>
</tr>
<tr>
<td>6/30/2014</td>
<td>10,584,795</td>
<td>25,505,610</td>
<td>14,920,815</td>
<td>41.5%</td>
<td>3,487,577</td>
<td>427.8</td>
</tr>
<tr>
<td>6/30/2016</td>
<td>11,922,966</td>
<td>32,310,335</td>
<td>20,387,369</td>
<td>36.9%</td>
<td>3,720,751</td>
<td>547.9</td>
</tr>
</tbody>
</table>

All figures prior to 6/30/2010 were reported by the prior actuarial firm.
3. The following shows the schedule of employer contributions (all dollar amounts are in thousands).

<table>
<thead>
<tr>
<th>Fiscal Year Ending June 30</th>
<th>Valuation Date Ending June 30</th>
<th>Annual Required Contribution</th>
<th>Actual Contribution</th>
<th>Percentage Contributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014 2012</td>
<td>$1,268,935</td>
<td>$1,268,890</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>2015 2012</td>
<td>1,379,189</td>
<td>1,371,651</td>
<td>99.5%</td>
<td></td>
</tr>
<tr>
<td>2016 2014</td>
<td>1,514,467</td>
<td>1,501,805</td>
<td>99.2%</td>
<td></td>
</tr>
<tr>
<td>2017 2014</td>
<td>1,569,142</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>2018 2016</td>
<td>1,443,110</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>2019 2016</td>
<td>1,574,537</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

4. 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.

- **Valuation date**: 6/30/2016
- **Actuarial cost method**: Entry Age Normal
- **Amortization method**: Level percent of payroll, closed 5 year phase into level dollar
- **Remaining amortization period**: 25.1 years
- **Asset valuation method**: 5-year smoothed actuarial value

**Actuarial assumptions:**
- **Investment rate of return**: 6.90%
- **Projected salary increases**: 3.50% - 19.50%
- **Cost-of-living adjustments**: 1.95% - 3.25%
- **Social Security Wage Base**: 3.50%
- **Includes inflation at**: 2.50%
SECTION VII – EXPERIENCE

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the two year period ended June 30, 2016 is shown below. Schedule H provides detailed gain/(loss) by source.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>UAAL* as of June 30, 2014</td>
<td>$14,920.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td>Total Normal cost from 2014 valuation</td>
<td>355.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td>Actual Employer and Employee contributions</td>
<td>1,565.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4)</td>
<td>Interest accrual: [((1) + (2)) \times 0.08] - [(3) \times 0.0392]</td>
<td>1,160.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5)</td>
<td>Expected UAAL as of June 30, 2015: (1) + (2) – (3) + (4)</td>
<td>$14,872.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6)</td>
<td>Total Normal cost for 2015 fiscal year</td>
<td>371.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7)</td>
<td>Actual Employer and Employee contributions</td>
<td>1,652.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8)</td>
<td>Interest accrual: [([(5) + (6)] \times 0.08) - [(7) \times 0.0392]]</td>
<td>1,154.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9)</td>
<td>Expected UAAL as of June 30, 2016: (5) + (6) - (7) + (8)</td>
<td>$14,745.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10)</td>
<td>MOU/Assumption Changes</td>
<td>5,918.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(11)</td>
<td>Framework Changes</td>
<td>(1,306.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12)</td>
<td>Expected UAAL as of June 30, 2016: (9) + (10) + (11)</td>
<td>$19,358.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(13)</td>
<td>Actual UAAL as of June 30, 2016</td>
<td>$20,387.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(14)</td>
<td>Gain/(loss): (12) – (13) (See Schedule H)</td>
<td>$1,029.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(15)</td>
<td>Gain/(loss) as percent of actuarial accrued liabilities at June 30, 2014 ($25,505.6)</td>
<td>(4.0)%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Unfunded actuarial accrued liability.

<table>
<thead>
<tr>
<th>Valuation Date June 30</th>
<th>Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>(4.2)%</td>
</tr>
<tr>
<td>2014</td>
<td>(5.8)%</td>
</tr>
<tr>
<td>2016</td>
<td>(4.0)%</td>
</tr>
</tbody>
</table>
## SCHEDULE A

**RESULTS OF VALUATION**

**PREPARED AS OF JUNE 30, 2016**

<table>
<thead>
<tr>
<th>1. ACTUARIAL ACCRUED LIABILITY</th>
<th>JUNE 30, 2016</th>
<th>JUNE 30, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present value of prospective benefits payable in respect of:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Present active members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Tier I – Hazardous Duty</td>
<td>$ 34,072,996</td>
<td>$ 49,210,224</td>
</tr>
<tr>
<td>- Tier I – Plan B</td>
<td>1,014,122,784</td>
<td>1,173,883,113</td>
</tr>
<tr>
<td>- Tier I – Plan C</td>
<td>27,450,256</td>
<td>37,753,401</td>
</tr>
<tr>
<td>- Tier II – Hazardous Duty</td>
<td>1,090,001,648</td>
<td>1,188,010,935</td>
</tr>
<tr>
<td>- Tier II – All Others</td>
<td>3,393,530,559</td>
<td>2,715,215,560</td>
</tr>
<tr>
<td>- Tier IIA – Hazardous Duty</td>
<td>1,681,131,552</td>
<td>912,871,620</td>
</tr>
<tr>
<td>- Tier IIA – All Others</td>
<td>1,605,639,996</td>
<td>1,057,034,112</td>
</tr>
<tr>
<td>- Tier III – Hazardous Duty</td>
<td>65,732,535</td>
<td>9,671,840</td>
</tr>
<tr>
<td>- Tier III – Hybrid Plan</td>
<td>358,214,031</td>
<td>204,950,079</td>
</tr>
<tr>
<td>- Tier III – All Others</td>
<td>108,837,251</td>
<td>27,212,681</td>
</tr>
<tr>
<td>- Total actives</td>
<td>$ 9,378,733,608</td>
<td>$ 7,375,813,565</td>
</tr>
<tr>
<td>(b) Present inactive members and members entitled to deferred vested benefits:</td>
<td>266,708,800</td>
<td>225,853,075</td>
</tr>
<tr>
<td>(c) Present annuitants and beneficiaries</td>
<td>22,664,892,602</td>
<td>17,903,943,137</td>
</tr>
<tr>
<td>(d) Total actuarial accrued liability [1(a) + 1(b) + 1(c)]</td>
<td>$32,310,335,010</td>
<td>$25,505,609,777</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. ACTUARIAL VALUE OF ASSETS</th>
<th>JUNE 30, 2016</th>
<th>JUNE 30, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 11,922,965,860</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$ 20,387,369,150</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: the June 30, 2016 valuation results reflect all changes to the plan provisions, methods and assumptions, including the decrease in the investment rate of return assumption from 8.00% to 6.90%.
### SCHEDULE B

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Actuarial Value Beginning of Year*</td>
<td>$11,389,603,128</td>
<td>$10,584,795,257</td>
<td>$9,784,500,362</td>
</tr>
<tr>
<td>(2) Market Value End of Year**</td>
<td>10,636,702,645</td>
<td>10,737,492,074</td>
<td>10,472,567,077</td>
</tr>
<tr>
<td>(3) Market Value Beginning of Year</td>
<td>10,737,492,074</td>
<td>10,472,567,077</td>
<td>9,182,442,986</td>
</tr>
<tr>
<td>(4) Cash Flow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Contributions**</td>
<td>1,652,823,497</td>
<td>1,565,148,396</td>
<td>1,419,894,684</td>
</tr>
<tr>
<td>(b) Disbursements</td>
<td>(1,736,278,654)</td>
<td>(1,657,588,460)</td>
<td>(1,570,558,006)</td>
</tr>
<tr>
<td>(c) Net: (4)(a) + (4)(b)</td>
<td>(83,455,157)</td>
<td>(92,440,064)</td>
<td>(150,663,322)</td>
</tr>
<tr>
<td>(5) Investment Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Market Total: (2) – (3) – (4)(c)</td>
<td>(17,334,272)</td>
<td>357,365,061</td>
<td>1,440,787,413</td>
</tr>
<tr>
<td>(b) Assumed Rate</td>
<td>8.00%</td>
<td>8.00%</td>
<td>8.00%</td>
</tr>
<tr>
<td>(c) Amount for Immediate Recognition: (1) x (5)(b) + [(4)(c) less Receivable**] x (5)(b) x 0.5</td>
<td>907,190,445</td>
<td>842,839,661</td>
<td>776,485,566</td>
</tr>
<tr>
<td>(d) Amount for Phased-In Recognition: (5)(a) – (5)(c)</td>
<td>(924,524,717)</td>
<td>(485,474,600)</td>
<td>664,301,847</td>
</tr>
<tr>
<td>(6) Phased-In Recognition of Investment Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Current Year: (5)(d) x 0.20</td>
<td>(184,904,943)</td>
<td>(97,094,920)</td>
<td>132,860,369</td>
</tr>
<tr>
<td>(b) First Prior Year</td>
<td>(97,094,920)</td>
<td>132,860,369</td>
<td>40,945,727</td>
</tr>
<tr>
<td>(c) Second Prior Year</td>
<td>132,860,369</td>
<td>40,945,727</td>
<td>(182,178,789)</td>
</tr>
<tr>
<td>(d) Third Prior Year</td>
<td>40,945,727</td>
<td>(182,178,789)</td>
<td>159,875,887</td>
</tr>
<tr>
<td>(e) Fourth Prior Year</td>
<td>(182,178,789)</td>
<td>159,875,887</td>
<td>22,969,457</td>
</tr>
<tr>
<td>(f) Total Recognized Investment Gain</td>
<td>(290,372,556)</td>
<td>54,408,274</td>
<td>174,472,651</td>
</tr>
<tr>
<td>(7) Preliminary Actuarial Value End of Year: (1) + (4)(c) + (5)(c) + (6)(f)</td>
<td>11,922,965,860</td>
<td>11,389,603,128</td>
<td>10,584,795,257</td>
</tr>
<tr>
<td>(8) Final Actuarial Value End of Year Using 20% Corridor: Greater of [(7) and .8 x (2)], but no more than 1.2 x (2)</td>
<td>11,922,965,860</td>
<td>11,389,603,128</td>
<td>10,584,795,257</td>
</tr>
<tr>
<td>(9) Difference Between Market &amp; Actuarial Values: (2) – (8)</td>
<td>$(1,286,263,215)</td>
<td>$(652,111,054)</td>
<td>$(112,228,180)</td>
</tr>
<tr>
<td>(10) Rate of Return on Preliminary Actuarial Value</td>
<td>5.30%</td>
<td>8.46%</td>
<td>9.73%</td>
</tr>
</tbody>
</table>

* Before corridor constraints, if applicable.

** Includes receivables of: $15,989,968 at 6/30/2016, $6,158,929 at 6/30/2015 and $6,198,255 at 6/30/2014.
### SCHEDULE C
SUMMARY OF RECEIPTS AND DISBURSEMENTS
(Market Value)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Receipts for the Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Members</td>
<td>$ 135,028,539</td>
<td>$ 187,338,535</td>
<td>$ 144,806,616</td>
</tr>
<tr>
<td>State</td>
<td>1,218,966,824</td>
<td>1,101,007,100</td>
<td>1,024,371,178</td>
</tr>
<tr>
<td>Federal (Net of Transfers)</td>
<td>282,838,166</td>
<td>270,643,832</td>
<td>244,518,635</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$ 1,636,833,529</td>
<td>$ 1,558,989,467</td>
<td>$ 1,413,696,429</td>
</tr>
<tr>
<td>Amount Receivable</td>
<td>15,989,968</td>
<td>6,158,929</td>
<td>6,198,255</td>
</tr>
<tr>
<td>Investment Earnings (net of expenses)</td>
<td>(17,334,272)</td>
<td>357,365,061</td>
<td>1,440,787,413</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$ 1,635,489,225</td>
<td>$ 1,922,513,457</td>
<td>$ 2,860,682,097</td>
</tr>
<tr>
<td><strong>Disbursements for the Year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefit Payments</td>
<td>$ 1,729,181,426</td>
<td>$ 1,650,464,672</td>
<td>$ 1,563,029,412</td>
</tr>
<tr>
<td>Refunds to Members</td>
<td>7,097,228</td>
<td>7,123,788</td>
<td>7,528,594</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$ 1,736,278,654</td>
<td>$ 1,657,588,460</td>
<td>$ 1,570,558,006</td>
</tr>
<tr>
<td>Excess of Receipts over Disbursements</td>
<td>(100,789,429)</td>
<td>$ 264,924,997</td>
<td>$ 1,290,124,091</td>
</tr>
<tr>
<td><strong>Reconciliation of Asset Balances</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Balance as of the Beginning of Year</td>
<td>$ 10,737,492,074</td>
<td>$ 10,472,567,077</td>
<td>$ 9,182,442,986</td>
</tr>
<tr>
<td>Excess of Receipts over Disbursements</td>
<td>(100,789,429)</td>
<td>264,924,997</td>
<td>1,290,124,091</td>
</tr>
<tr>
<td>Asset Balance as of the End of Year</td>
<td>$ 10,636,702,645</td>
<td>$ 10,737,492,074</td>
<td>$ 10,472,567,077</td>
</tr>
<tr>
<td>Rate of Return</td>
<td>(0.16)%</td>
<td>3.43%</td>
<td>15.82%</td>
</tr>
</tbody>
</table>
SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

Adopted or reaffirmed by the Commission for the June 30, 2016 and later valuations.

VALUATION INTEREST RATE: 6.90% per annum, compounded annually, net of expenses.

SALARY INCREASES: From the Framework Document between the State and SEBAC, we have assumed the rate of wage inflation is 0.00% for fiscal years ending June 30, 2017, 2018 and 2019 for each active member. In addition, we have reduced the rate of increase by one half due to promotion and merit over this same three-year period. Once this three-year period is complete, the assumptions for salary increases are as follows:

<table>
<thead>
<tr>
<th>Years of Service</th>
<th>Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.50%</td>
</tr>
<tr>
<td>1</td>
<td>19.50%</td>
</tr>
<tr>
<td>2</td>
<td>9.50%</td>
</tr>
<tr>
<td>3</td>
<td>5.75%</td>
</tr>
<tr>
<td>4</td>
<td>5.50%</td>
</tr>
<tr>
<td>5</td>
<td>5.25%</td>
</tr>
<tr>
<td>6</td>
<td>5.00%</td>
</tr>
<tr>
<td>7</td>
<td>5.00%</td>
</tr>
<tr>
<td>8</td>
<td>5.00%</td>
</tr>
<tr>
<td>9</td>
<td>5.00%</td>
</tr>
<tr>
<td>10</td>
<td>4.50%</td>
</tr>
<tr>
<td>11</td>
<td>4.50%</td>
</tr>
<tr>
<td>12</td>
<td>4.50%</td>
</tr>
<tr>
<td>13</td>
<td>4.50%</td>
</tr>
<tr>
<td>14</td>
<td>4.50%</td>
</tr>
<tr>
<td>15+</td>
<td>3.50%</td>
</tr>
</tbody>
</table>

*includes Wage Inflation of 3.50%

COST OF LIVING ADJUSTMENTS (COLA):

<table>
<thead>
<tr>
<th>Group</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre July 1, 1980 Retirees</td>
<td>3.25%</td>
</tr>
<tr>
<td>July 1, 1980 – June 30, 1997 Retirees</td>
<td>3.00%</td>
</tr>
<tr>
<td>July 1, 1997 – October 1, 2011 Retirees</td>
<td>2.60%</td>
</tr>
<tr>
<td>Post October 1, 2011 Retirees</td>
<td>2.25%</td>
</tr>
<tr>
<td>Post July 1, 2022 Retirees</td>
<td>1.95%</td>
</tr>
</tbody>
</table>

We have also assumed a COLA moratorium for those retiring on or after July 1, 2022 for the first 30 months of retirement. We assume the first COLA received is increased by 0.15% to reflect the possible additional COLA in the event the annualized rate of increase in the CPI-W is greater than 5.5% during the first 18 months of retirement.
SOCIAL SECURITY WAGE BASE INCREASES: 3.50% per annum.

PAYROLL GROWTH ASSUMPTION: 3.50% per annum.

SEPARATIONS BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of separation before service retirement are as follows:

<table>
<thead>
<tr>
<th>WITHDRAWAL</th>
<th>Annual Rates of Withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Years of Service</td>
</tr>
<tr>
<td>Age</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Males</th>
<th>20</th>
<th>6.00%</th>
<th>3.00%</th>
<th>6.00%</th>
<th>3.00%</th>
<th>2.75%</th>
<th>2.00%</th>
<th>1.25%</th>
<th>1.25%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>6.00</td>
<td>3.00</td>
<td>6.00</td>
<td>3.00</td>
<td>2.75</td>
<td>2.00</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>6.00</td>
<td>3.00</td>
<td>4.00</td>
<td>3.00</td>
<td>2.75</td>
<td>2.00</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>6.00</td>
<td>3.00</td>
<td>4.00</td>
<td>3.00</td>
<td>2.00</td>
<td>2.00</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>8.75</td>
<td>3.00</td>
<td>4.00</td>
<td>3.50</td>
<td>2.00</td>
<td>2.50</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>8.75</td>
<td>4.00</td>
<td>4.00</td>
<td>3.50</td>
<td>2.00</td>
<td>2.50</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>8.75</td>
<td>5.50</td>
<td>4.00</td>
<td>3.50</td>
<td>2.00</td>
<td>2.50</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>55+</td>
<td>8.75</td>
<td>6.00</td>
<td>4.00</td>
<td>3.50</td>
<td>2.00</td>
<td>2.50</td>
<td>1.25</td>
<td>1.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Females</th>
<th>20</th>
<th>10.00%</th>
<th>10.00%</th>
<th>5.00%</th>
<th>2.50%</th>
<th>3.00%</th>
<th>3.50%</th>
<th>4.00%</th>
<th>2.50%</th>
<th>1.25%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>10.00</td>
<td>10.00</td>
<td>5.00</td>
<td>2.50</td>
<td>3.00</td>
<td>3.50</td>
<td>4.00</td>
<td>2.50</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>12.00</td>
<td>6.00</td>
<td>5.00</td>
<td>2.50</td>
<td>3.00</td>
<td>3.50</td>
<td>4.00</td>
<td>2.50</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>12.00</td>
<td>5.00</td>
<td>6.00</td>
<td>2.50</td>
<td>4.00</td>
<td>3.50</td>
<td>4.00</td>
<td>2.50</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>12.00</td>
<td>5.00</td>
<td>6.00</td>
<td>2.00</td>
<td>4.00</td>
<td>3.50</td>
<td>4.00</td>
<td>2.50</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>12.00</td>
<td>5.00</td>
<td>5.00</td>
<td>2.00</td>
<td>4.00</td>
<td>3.50</td>
<td>4.00</td>
<td>2.50</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>12.00</td>
<td>8.00</td>
<td>5.00</td>
<td>2.00</td>
<td>4.00</td>
<td>3.50</td>
<td>4.00</td>
<td>2.50</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>55+</td>
<td>12.00</td>
<td>8.00</td>
<td>5.00</td>
<td>2.00</td>
<td>4.00</td>
<td>3.50</td>
<td>4.00</td>
<td>2.50</td>
<td>1.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nonhazardous Males</th>
<th>20</th>
<th>45.0%</th>
<th>40.0%</th>
<th>40.0%</th>
<th>20.0%</th>
<th>20.0%</th>
<th>10.0%</th>
<th>6.0%</th>
<th>5.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>30.0</td>
<td>28.0</td>
<td>19.0</td>
<td>10.0</td>
<td>7.0</td>
<td>10.0</td>
<td>6.0</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>22.0</td>
<td>20.0</td>
<td>14.0</td>
<td>9.0</td>
<td>6.0</td>
<td>7.0</td>
<td>4.5</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>20.0</td>
<td>15.0</td>
<td>14.0</td>
<td>8.0</td>
<td>6.0</td>
<td>4.0</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>20.0</td>
<td>15.0</td>
<td>10.0</td>
<td>8.0</td>
<td>6.0</td>
<td>4.0</td>
<td>4.0</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>22.0</td>
<td>12.0</td>
<td>10.0</td>
<td>8.0</td>
<td>6.0</td>
<td>4.0</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>22.0</td>
<td>12.0</td>
<td>10.0</td>
<td>8.0</td>
<td>5.0</td>
<td>4.0</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>55+</td>
<td>25.0</td>
<td>19.0</td>
<td>10.0</td>
<td>8.0</td>
<td>4.0</td>
<td>4.0</td>
<td>3.5</td>
<td>2.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nonhazardous Females</th>
<th>20</th>
<th>45.0%</th>
<th>45.0%</th>
<th>45.0%</th>
<th>20.0%</th>
<th>8.0%</th>
<th>10.0%</th>
<th>6.0%</th>
<th>4.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>25</td>
<td>25.0</td>
<td>23.0</td>
<td>15.0</td>
<td>12.0</td>
<td>8.0</td>
<td>10.0</td>
<td>6.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>20.0</td>
<td>19.0</td>
<td>12.0</td>
<td>9.0</td>
<td>7.0</td>
<td>6.0</td>
<td>5.0</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>18.0</td>
<td>13.0</td>
<td>11.0</td>
<td>8.0</td>
<td>6.0</td>
<td>5.0</td>
<td>4.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>18.0</td>
<td>13.0</td>
<td>10.0</td>
<td>8.0</td>
<td>5.5</td>
<td>4.0</td>
<td>3.5</td>
<td>2.5</td>
</tr>
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<td>18.0</td>
<td>13.0</td>
<td>10.0</td>
<td>6.0</td>
<td>5.5</td>
<td>4.0</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
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<td>18.0</td>
<td>13.0</td>
<td>10.0</td>
<td>6.0</td>
<td>5.5</td>
<td>4.0</td>
<td>3.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>55+</td>
<td>18.0</td>
<td>13.0</td>
<td>10.0</td>
<td>6.0</td>
<td>5.5</td>
<td>4.0</td>
<td>3.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>
## Disability

<table>
<thead>
<tr>
<th>Age</th>
<th>Hazardous</th>
<th>Non-Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>0.05%</td>
<td>0.04%</td>
</tr>
<tr>
<td>35</td>
<td>0.12</td>
<td>0.05</td>
</tr>
<tr>
<td>40</td>
<td>0.18</td>
<td>0.10</td>
</tr>
<tr>
<td>45</td>
<td>0.35</td>
<td>0.12</td>
</tr>
<tr>
<td>50</td>
<td>0.40</td>
<td>0.20</td>
</tr>
<tr>
<td>55</td>
<td>0.50</td>
<td>0.40</td>
</tr>
<tr>
<td>60</td>
<td>0.65</td>
<td>0.50</td>
</tr>
<tr>
<td>65</td>
<td>0.80</td>
<td>0.60</td>
</tr>
<tr>
<td>70</td>
<td>1.35</td>
<td>0.60</td>
</tr>
</tbody>
</table>

## Retirement

The assumed annual rates of retirement are shown below.

<table>
<thead>
<tr>
<th>Hazardous</th>
<th>Tier I, II &amp; IIA</th>
<th>Tier III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>First Year Eligible</td>
<td>All Years After</td>
</tr>
<tr>
<td>40</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>41</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>42</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>43</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>44</td>
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<tr>
<td>45</td>
<td>40</td>
<td>25</td>
</tr>
<tr>
<td>46</td>
<td>40</td>
<td>25</td>
</tr>
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<td>47</td>
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</tr>
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<td>48</td>
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</tr>
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<td>49</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td>50</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>51</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>52</td>
<td>40</td>
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<td>40</td>
<td>25</td>
</tr>
<tr>
<td>59</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>60-64</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>65-69</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>70-79</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>80</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
We have assumed that the assumed rate of retirement will increase by 20% of the current assumed rates in the year before July 1, 2022 to reflect the potential behavior of future eligible members to avoid the July 1, 2022 COLA change and moratorium.
DEATHS AFTER RETIREMENT: The RP-2014 White Collar Mortality Table projected to 2020 by Scale BB at 100% for males and 95% for females is used for the period after retirement and for dependent beneficiaries. Representative values of the assumed annual rates of mortality are as follows:

<table>
<thead>
<tr>
<th>Age</th>
<th>Males</th>
<th>Females</th>
<th>Age</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>0.043%</td>
<td>0.031%</td>
<td>65</td>
<td>0.705%</td>
<td>0.579%</td>
</tr>
<tr>
<td>45</td>
<td>0.067</td>
<td>0.052</td>
<td>70</td>
<td>1.133</td>
<td>0.933</td>
</tr>
<tr>
<td>50</td>
<td>0.272</td>
<td>0.194</td>
<td>75</td>
<td>1.943</td>
<td>1.553</td>
</tr>
<tr>
<td>55</td>
<td>0.384</td>
<td>0.250</td>
<td>80</td>
<td>3.407</td>
<td>2.688</td>
</tr>
<tr>
<td>60</td>
<td>0.501</td>
<td>0.348</td>
<td>85</td>
<td>6.247</td>
<td>4.826</td>
</tr>
</tbody>
</table>

In our opinion, the projection of the mortality rates with Scale BB provide a sufficient margin in the assumed rates of mortality to allow for additional improvement in mortality experience.

The RP-2014 Disabled Retiree Mortality Table at 65% for males and 85% for females is used for the period after disability.

ASSET METHOD: Actuarial Value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected value of assets, based on the assumed valuation rate of return. The amount recognized each year is 1/5 of the difference between market value and expected actuarial value. In addition, the actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets.

VALUATION METHOD: Entry Age Normal cost method. See Schedule E for a brief description of this method.

IMPACT OF LONGLEY DECISION: Benefits for members retiring from service on or after the Longley decision date are assumed to increase by 0.084% as a result of the revised treatment of longevity pay. Retroactive application of Longley has been reflected in this valuation to the extent impacted retiree benefits have been recalculated.

SPOUSES: For members who have elected spouse coverage, husbands are assumed to be three years older than their wives.

PERCENT MARRIED: 80% of active members are assumed to be married with an average of two children who are on average age 12.

OTHER ASSUMPTIONS:

- 20% of Pre-Retirement deaths are assumed to be service related,
- 50% of Tier I Hazardous Employees are assumed to be State Police,
- To take into account State Police Supplemental Benefits and the offset of Workers Compensation, Social Security, and Non-Rehabilitation Earnings, the following minimum and maximum benefits as a percent of salary are assumed for disability benefits:
  
<table>
<thead>
<tr>
<th>Tier I State Police</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60%</td>
<td>80%</td>
</tr>
<tr>
<td>All Other Members</td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>
SCHEDULE E
ACTUARIAL COST METHOD

The valuation is prepared on projected benefit basis, under which the present value of each member's expected benefits at retirement or death is determined, based on age, service and sex and using the interest rate assumed to be earned in the future (6.90% per annum). The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members, beneficiaries and members entitled to deferred vested benefits to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.

The employer contributions required to support the benefits of SERS are determined following a level funding approach, and consist of a normal cost contribution and an unfunded actuarial accrued liability contribution. The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made for pension 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 in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.

The unfunded actuarial accrued liability is determined by subtracting the actuarial value of assets from the actuarial accrued liability. The UAAL is amortized according to the MOU between the State and SEBAC which established separate UAAL bases. Each base is rolled forward to the beginning of the fiscal year for which the amortization payment is applicable. The amortization amounts are adjusted with interest to the middle of the applicable fiscal year. The employer required contribution amount is the sum of the normal cost contribution and the UAAL amortization payment.
The Connecticut State Employees Retirement System (CT SERS) is a defined benefit pension plan established by the Connecticut General Assembly for the purpose of providing retirement allowances and other benefits for State employees in Connecticut, and their survivors and other beneficiaries.

### Eligibility Requirements

**Tier I**
All State Employees, Elected Officials and their Appointees hired prior to July 1, 1984. Those employees hired between July 1, 1982 and January 1, 1984 could elect to move to Tier II.

**Tier II**
All State Employees, Elected Officials and their Appointees hired on or after July 1, 1984.

**Tier IIA**
All State Employees, Elected Officials and their Appointees hired on or after July 1, 1997.

**Tier III**
All State Employees, Elected Officials and their Appointees hired on or after July 1, 2011.

**Tier IV**
All State Employees, Elected Officials and their Appointees hired on or after July 1, 2017.

### Final Average Earnings (FAE)

**Tier I, II, and IIA**
Average Salary of the three highest paid years of service. Effective January 1, 1986, no one year’s earnings can be greater than 130% of the average of the two preceding years in calculating the Final Average Earnings.

**Tier III and IV**
Average Salary of the five highest paid years of service. No one year’s earnings can be greater than 130% of the average of the two preceding years in calculating the Final Average Earnings.

### Normal Retirement Benefit

**Eligibility**

*Tier I Hazardous* – 20 years of credited service.

*Tier I Plans B and C* – Earliest of age 55 with 25 years of service, age 60 with 10 years of service, or age 70 with 5 years of service.

*Tier II Hazardous* – 20 years of credited service.
Tier II and IIA – For those who will be eligible for retirement on or before July 1, 2022, the earliest of age 62 with 10 years of vesting service (effective July 1, 1992), age 60 with 25 years of vesting service, age 70 with 5 years of vesting service, or age 62 with 5 years of actual state service for terminations on or after July 1, 1997.

For those who will not be eligible for retirement on or before July 1, 2022, the earliest of age 65 with 10 years of vesting service, age 63 with 25 years of vesting service, age 70 with 5 years of vesting service.

Tier III Hazardous – Earlier of Age 50 and 20 years of benefit service or 25 years of benefit service.

Tier III and IV – Age 63 and 25 years of benefit service or Age 65 and 10 years of benefit service.

Tier IV Hazardous – 25 years of benefit service.

Benefit

Tier I Hazardous – 50% of FAE plus 2% for each year of service in excess of 20.

Tier I Plan B – 2% of FAE times years of service up to age 65. Thereafter, 1% of FAE up to $4,800, plus 2% of FAE in excess of $4,800 times years of service. At age 70, greater of 1.25% of FAE up to $4,800 plus 2.5% of FAE in excess of $4,800 times years of service (maximum 20 years) or 1.0% of FAE up to $4,800 plus 2% of FAE in excess of $4,800 times year of service. Minimum benefit with 25 years is $833.34 per month.

Tier I Plan C – 2% of FAE times years of service. At age 70, greater of 2.5% of FAE times years of service (maximum 20 years) or 2.0% of FAE times years of service. Minimum benefit with 25 years is $833.34 per month.

Tier II, IIA, III and IV Hazardous – 2.5% of FAE times years of service up to 20 years plus 2.0% of FAE times years of service in excess of 20 years, if any. Minimum benefit with 25 years is $360 per month.

Tier II, IIA and III All Others – 1.40% of FAE plus 0.433% of FAE in excess of year’s breakpoint*, times years of service from October 1, 1982 up to 35 years plus 1.625% of FAE times years of service in excess of 35 years, if any. Minimum benefit with 25 years is $360 per month.

* $10,700 increased by 6% each year after 1982, rounded to nearest $100 but not greater than Social Security Covered Compensation.
**Tier IV All Others** – 1.30% of FAE times years of service. Minimum benefit with 25 years if $360 per month.

**Early Retirement Benefit**

**Eligibility**

*Hazardous* – None.

*Tier I* – Age 55 with 10 years of service.

*Tier II and IIA* – Age 55 with 10 years of service.

*Tier III and IV* – Age 58 with 10 years of service.

**Benefit**

*Tier I* – Benefit is Normal Retirement Benefit reduced for retirement prior to age 60 with less than 25 years of service.

*Tier II, IIA, III and IV* – Benefit is Normal Retirement Benefit reduced 0.25% (effective July 1, 1991) for each month prior to age 60 if at least 25 years of service or age 62 if at least 10 but less than 25 years of service.

For those who retire on or after October 2, 2011 but prior to meeting the age and service requirements for a normal retirement, will be subject to a benefit reduced by 0.50% for each month prior to Normal Retirement.

**Disability Retirement Benefit**

**Tier I**

For non-service disabilities occurring prior to age 60 with at least 5 years of service, benefit is 3% of FAE times years of service; maximum benefit is 1.667% of FAE times year of service projected to age 65.

For service disabilities occurring prior to age 60, benefit is 1.667% of Salary times years of service projected to age 65 (maximum 30 years).

Exception: State Police benefit is equal to the normal retirement benefit if more than 20 years of service. State Police also receives an additional benefit of $360 per month plus $300 to spouse plus $300 to a surviving dependent child.

**Tier II, IIA, III and IV**

Prior to age 65 for service related disability or at any age with at least 10 years of service, benefit is 1.333% of FAE plus 0.50% of FAE in excess of the year’s breakpoint, times service projected to age 65 (maximum 30 years).
Deferred Vested Retirement Benefit

Eligibility

Tier I - 10 years of service.

Tier II and IIA – Effective July 1, 1997, 5 years of actual state service, 10 years of vesting service, or age 70 with 5 years of service.

Tier III and IV – 10 years of benefit service.

Benefit

Tier I – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 55.

Tier II and IIA – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 55.

Tier III and IV – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 58.

Pre-Retirement Spouse’s Benefit

Tier I

State Police – Survivor benefits to spouse of $670 per month plus $300 to a surviving dependent child.

If eligible for early or normal retirement, 50% of the average of the Life Benefit and the 50% Joint & Survivor Benefit the member would have received.

If not eligible for retirement but with 25 years of service, the same benefit calculated as though age 55 using service and earnings at death.

If not eligible for retirement, return of contributions (5% interest).

Tier II, IIA, III and IV

If eligible for early or normal retirement, 50% of the 50% Joint & Survivor Benefit the member would have received.

If not eligible for retirement but with 25 years of service, the same benefit calculated as though age 55 using service and earnings at death.

If not eligible for retirement, return of contributions (5% interest).

Tiers I, II, IIA, III and IV

If death is due to employment and there are dependent children under age 18, spouse will be paid $100,000 in 10 annual installments while living and not remarried. In addition, $50 per month will be paid to each child while under age 18.

If death is due to employment and there are no dependent children under age 18, spouse will be paid $50,000 in not less than 10 annual installments.
Payment Options
50% or 100% Joint and Survivor (Normal Form if married).
Straight life annuity (Normal Form if not married).
10 or 20 year certain and life annuity.

Cost of Living Adjustments (COLA)
Annual adjustments each July 1 of up to 5% for retirements prior to July 1, 1980; 3% for retirements after July 1, 1980. For members (and beneficiaries) not covered by Social Security and age 62 and over, the maximum increase is 6%.

For employees retiring after June 30, 1999, the annual adjustment will be 60% of the increase in CPI up to 6% and 75% of the increase in the CPI over 6%. This adjustment will be no less than 2.5% and no greater than 6%.

Employees retiring between July 1, 1997 and June 30, 1999 made an irrevocable choice between the above formula and a fixed 3% annual adjustment.

An employee from Tier IIA must have at least 10 years of actual state service or directly make the transition into retirement in order to be eligible for annual adjustments.

For employees retiring on or after October 2, 2011, the minimum COLA shall be 2.0% and the maximum COLA shall be 7.5%.

For employees retiring on or after July 1, 2022, the annual rate of increase will be the CPI-W from 0.00% to 2.00%, plus 60% of the annual rate of increase in CPI-W from 3.33% to 6.00%, plus 75% of the annual rate of increase in CPI-W above 6.00%, with a cap on the COLA rate of 7.50%. In addition, a COLA moratorium for those retiring on or after July 1, 2022 will be on the first 30 months of retirement. If rate of increase in CPI-W exceeds an annualized rate of 5.5% during the initial 18 month period of receiving retirement benefits, the COLA provided beginning with the 31st monthly benefit includes an additional adjustment based on the annual COLA rate as determined above using the annualized rate over the 18 month period. The COLA rate applied would but reduced by 2.5% and then multiplied by 1.5 to reflect the 18 month period.
Member Contributions*

<table>
<thead>
<tr>
<th>Tier I – Hazardous</th>
<th>4% of earnings up to Social Security Taxable Wage Base plus 5% of earnings above that level.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I – Plan B</td>
<td>2% of earnings up to Social Security Taxable Wage Base plus 5% of earnings above that level.</td>
</tr>
<tr>
<td>Tier I – Plan C</td>
<td>5% of earnings.</td>
</tr>
<tr>
<td>Tier II – Hazardous</td>
<td>4% of earnings.</td>
</tr>
<tr>
<td>Tier II – All Others</td>
<td>None.</td>
</tr>
<tr>
<td>Tier IIA &amp; III – Hazardous</td>
<td>5% of earnings.</td>
</tr>
<tr>
<td>Tier IIA &amp; III – All Others</td>
<td>2% of earnings.</td>
</tr>
<tr>
<td>Tier IV – Hazardous</td>
<td>8% of earnings.</td>
</tr>
<tr>
<td>Tier IV – All Others</td>
<td>5% of earnings.</td>
</tr>
</tbody>
</table>

* Increased for anyone electing to maintain retirement eligibility. In addition, there will be an increase to all non-Tier IV members contribution rates by 1.5% of earnings effective July 1, 2017 and an additional 0.5% of earnings effective July 1, 2019. In years where asset losses require further increases in contributions, Tier IV employees’ contributions may increase by half the necessary increase in rates (up to 2.0%). Finally, all Tier IV employees must contribute 1% to the Defined Contributions (DC) portion of the Hybrid Plan and may elect additional contribution of up to 3% of salary to the DC portion.
Hybrid Defined Benefit/Defined Contribution Plan for Employees of Higher Learning

Individuals hired on or after July 1, 2011 otherwise eligible for the Alternate Retirement Plan ("ARP") shall be eligible to be members of the new Hybrid Plan in addition to their existing choices. Individuals who are currently members of the ARP shall be eligible to join the Hybrid Plan on a one time option at the full actuarial cost. The Hybrid Plan shall have defined benefits identical to Tier II/IIA and Tier III for individuals hired on or after July 1, 2011, but shall require employee contributions 3% higher than the contribution required from the Applicable Tier II/IIA/III Plan. An employee shall have the option, upon leaving state service, of accepting the defined benefit amount, or electing to receive a return of his/her contributions to the Hybrid Plan, plus a 5% employer match, plus 4% interest ("cash out option"). In the event the employee elects the cash out option, he/she shall permanently waive any entitlement they may have to health insurance as a retired state employee unless they convert the cash out option to a periodic payment as would be required under the current ARP Plan.
SCHEDULE G
TABLES OF MEMBERSHIP DATA

STATUS RECONCILIATION OF ACTIVE MEMBERS

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of June 30, 2014</td>
<td>49,976</td>
</tr>
<tr>
<td>Retirements</td>
<td>(3,665)</td>
</tr>
<tr>
<td>Disability</td>
<td>(291)</td>
</tr>
<tr>
<td>Terminated Vested</td>
<td>(95)</td>
</tr>
<tr>
<td>Terminated Non-Vested</td>
<td>(33)</td>
</tr>
<tr>
<td>Deaths</td>
<td>(74)</td>
</tr>
<tr>
<td>Rehires</td>
<td>645</td>
</tr>
<tr>
<td>New Participants</td>
<td>6,864</td>
</tr>
<tr>
<td>Refunds</td>
<td>(3,308)</td>
</tr>
<tr>
<td>As of June 30, 2016</td>
<td>50,019</td>
</tr>
</tbody>
</table>

STATUS RECONCILIATION OF INACTIVE MEMBERS

<table>
<thead>
<tr>
<th></th>
<th>Retirees</th>
<th>Disability</th>
<th>Survivor</th>
<th>Deferred Vested</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of June 30, 2014</td>
<td>37,158</td>
<td>4,092</td>
<td>4,553</td>
<td>1,457</td>
<td>47,260</td>
</tr>
<tr>
<td>Retirements</td>
<td>185</td>
<td>(9)</td>
<td></td>
<td>(176)</td>
<td>0</td>
</tr>
<tr>
<td>Disability</td>
<td>(3)</td>
<td>3</td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Survivors</td>
<td>(403)</td>
<td>(41)</td>
<td>444</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Deaths with no Survivors</td>
<td>(75)</td>
<td>(7)</td>
<td>(11)</td>
<td>(1)</td>
<td>(94)</td>
</tr>
<tr>
<td>Rehires</td>
<td>(3)</td>
<td>(2)</td>
<td></td>
<td>(15)</td>
<td>(20)</td>
</tr>
<tr>
<td>Refunds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Certain Period Ended</td>
<td></td>
<td></td>
<td></td>
<td>(7)</td>
<td>(7)</td>
</tr>
<tr>
<td>Data Corrections</td>
<td>(1,337)</td>
<td>(95)</td>
<td>(258)</td>
<td>52</td>
<td>(1,638)</td>
</tr>
<tr>
<td>From Active</td>
<td>3,665</td>
<td>291</td>
<td>51</td>
<td>95</td>
<td>4,102</td>
</tr>
<tr>
<td>As of June 30, 2016</td>
<td>39,187</td>
<td>4,232</td>
<td>4,772</td>
<td>1,412</td>
<td>49,603</td>
</tr>
</tbody>
</table>
TIER I – HAZARDOUS DUTY

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
<td>15 to 19</td>
</tr>
<tr>
<td>Under 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 to 34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 39</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>40 to 44</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>45 to 49</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>50 to 54</td>
<td>1</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>55 to 59</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>60 to 64</td>
<td>13</td>
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<tr>
<td>65 to 69</td>
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<tr>
<td>70 &amp; Up</td>
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</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Average Age: 58.7
Average Service: 31.9
Average Salary: $110,495
### TIER I – PLAN B

**The Number and Average Annual Compensation of Active Employees**  
**By Age and Service as of June 30, 2016**

<table>
<thead>
<tr>
<th>Age</th>
<th>0 to 4</th>
<th>5 to 9</th>
<th>10 to 14</th>
<th>15 to 19</th>
<th>20 to 24</th>
<th>25 to 30</th>
<th>30 &amp; Up</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>25 to 29</td>
<td></td>
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<td>30 to 34</td>
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<tr>
<td>35 to 39</td>
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<tr>
<td>40 to 44</td>
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<tr>
<td>45 to 49</td>
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<tr>
<td>50 to 54</td>
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<td>8</td>
<td>5</td>
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<td>55 to 59</td>
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<tr>
<td>60 to 64</td>
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<td>13</td>
<td>13</td>
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<td>398</td>
<td>41,276,362</td>
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<td>5</td>
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<td>134</td>
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</tr>
<tr>
<td>70 &amp; Up</td>
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<td></td>
<td></td>
<td>70</td>
<td>73</td>
<td>9,589,761</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5</td>
<td>16</td>
<td>15</td>
<td>32</td>
<td>35</td>
<td>41</td>
<td>1,284</td>
<td>1,428</td>
<td>$</td>
</tr>
</tbody>
</table>

Average Age: 59.5  
Average Service: 34.6  
Average Salary: $98,244
TIER I – PLAN C

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4 5 to 9 10 to 14 15 to 19 20 to 24 25 to 30 30 &amp; Up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 25</td>
<td></td>
<td></td>
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<td>25 to 29</td>
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<tr>
<td>30 to 34</td>
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<td></td>
<td>$0</td>
</tr>
<tr>
<td>35 to 39</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>40 to 44</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td>45 to 49</td>
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<td>8</td>
<td></td>
<td>$741,694</td>
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<td>1 13</td>
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<td>60 to 64</td>
<td>1 9</td>
<td>11</td>
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<td>65 to 69</td>
<td>1 6</td>
<td>7</td>
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<td>$551,963</td>
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<tr>
<td>70 &amp; Up</td>
<td>1 4</td>
<td>5</td>
<td></td>
<td>$557,838</td>
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<tr>
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<td>1 1 1 1 1 40</td>
<td>45</td>
<td></td>
<td>$4,067,185</td>
</tr>
</tbody>
</table>

Average Age: 61.1
Average Service: 34.4
Average Salary: $90,382
SCHEDULE G
(Continued)

TIER II – HAZARDOUS DUTY

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
</tr>
<tr>
<td>Under 25</td>
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<td></td>
</tr>
<tr>
<td>25 to 29</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>35 to 39</td>
<td>2</td>
<td>6</td>
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</tr>
<tr>
<td>40 to 44</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>45 to 49</td>
<td>5</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>50 to 54</td>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>55 to 59</td>
<td>2</td>
<td>7</td>
<td>32</td>
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<td>60 to 64</td>
<td>1</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>65 to 69</td>
<td>12</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>70 &amp; Up</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>7</td>
<td>30</td>
</tr>
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</table>

Average Age: 51.0
Average Service: 22.5
Average Salary: $101,364
TIER II – ALL OTHERS

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
<td>15 to 19</td>
</tr>
<tr>
<td>Under 25</td>
<td>$</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 29</td>
<td>$</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 to 34</td>
<td>$</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 to 39</td>
<td>1 1 8 14 1</td>
<td>25</td>
<td></td>
<td>$1,734,561</td>
</tr>
<tr>
<td>40 to 44</td>
<td>7 8 18 115 149 3</td>
<td>300</td>
<td></td>
<td>$24,569,272</td>
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<tr>
<td>45 to 49</td>
<td>41 35 60 253 946 540 39</td>
<td>1,914</td>
<td></td>
<td>$165,537,180</td>
</tr>
<tr>
<td>50 to 54</td>
<td>44 56 80 253 872 1,547 634</td>
<td>3,486</td>
<td></td>
<td>$312,135,229</td>
</tr>
<tr>
<td>55 to 59</td>
<td>29 44 76 177 727 1,218 751</td>
<td>3,022</td>
<td></td>
<td>$272,530,964</td>
</tr>
<tr>
<td>60 to 64</td>
<td>22 27 51 138 465 652 348</td>
<td>1,703</td>
<td></td>
<td>$154,062,902</td>
</tr>
<tr>
<td>65 to 69</td>
<td>11 13 22 40 170 199 106</td>
<td>561</td>
<td></td>
<td>$49,933,159</td>
</tr>
<tr>
<td>70 &amp; Up</td>
<td>6 5 7 23 62 65 25</td>
<td>193</td>
<td></td>
<td>$14,848,597</td>
</tr>
<tr>
<td>Total</td>
<td>161 189 322 1,013 3,392 4,224 1,903</td>
<td>11,204</td>
<td></td>
<td>$995,351,864</td>
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Average Age: 54.9
Average Service: 24.9
Average Salary: $88,839
### TIER IIA – HAZARDOUS DUTY

**The Number and Average Annual Compensation of Active Employees**

**By Age and Service as of June 30, 2016**

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
<td>15 to 19</td>
</tr>
<tr>
<td>Under 25</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>25 to 29</td>
<td>10</td>
<td>56</td>
<td>2</td>
<td>68</td>
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<td>30 to 34</td>
<td>21</td>
<td>629</td>
<td>127</td>
<td>1</td>
</tr>
<tr>
<td>35 to 39</td>
<td>24</td>
<td>493</td>
<td>515</td>
<td>166</td>
</tr>
<tr>
<td>40 to 44</td>
<td>7</td>
<td>315</td>
<td>407</td>
<td>51</td>
</tr>
<tr>
<td>45 to 49</td>
<td>8</td>
<td>242</td>
<td>314</td>
<td>519</td>
</tr>
<tr>
<td>50 to 54</td>
<td>7</td>
<td>155</td>
<td>220</td>
<td>281</td>
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<td>55 to 59</td>
<td>1</td>
<td>99</td>
<td>142</td>
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<tr>
<td>60 to 64</td>
<td>1</td>
<td>34</td>
<td>58</td>
<td>106</td>
</tr>
<tr>
<td>65 to 69</td>
<td>5</td>
<td>30</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>70 &amp; Up</td>
<td>2</td>
<td>5</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>2,030</td>
<td>1,820</td>
<td>1,888</td>
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</table>

**Average Age:** 44.0  
**Average Service:** 12.5  
**Average Salary:** $82,206
SCHEDULE G  
(Continued)  

TIER IIA – ALL OTHERS  
The Number and Average Annual Compensation of Active Employees  
By Age and Service as of June 30, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
<td>15 to 19</td>
</tr>
<tr>
<td>Under 25</td>
<td>18</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 29</td>
<td>81</td>
<td>155</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>30 to 34</td>
<td>128</td>
<td>915</td>
<td>217</td>
<td>6</td>
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<td>35 to 39</td>
<td>124</td>
<td>966</td>
<td>775</td>
<td>196</td>
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<td>40 to 44</td>
<td>92</td>
<td>842</td>
<td>796</td>
<td>776</td>
</tr>
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<td>45 to 49</td>
<td>89</td>
<td>859</td>
<td>835</td>
<td>836</td>
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<tr>
<td>50 to 54</td>
<td>101</td>
<td>792</td>
<td>815</td>
<td>788</td>
</tr>
<tr>
<td>55 to 59</td>
<td>100</td>
<td>740</td>
<td>726</td>
<td>724</td>
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<td>60 to 64</td>
<td>70</td>
<td>501</td>
<td>547</td>
<td>463</td>
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<tr>
<td>65 to 69</td>
<td>48</td>
<td>189</td>
<td>242</td>
<td>187</td>
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<tr>
<td>70 &amp; Up</td>
<td>56</td>
<td>74</td>
<td>65</td>
<td>56</td>
</tr>
<tr>
<td>Total</td>
<td>907</td>
<td>6,035</td>
<td>5,025</td>
<td>4,032</td>
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</table>

Average Age: 48.4
Average Service: 11.3
Average Salary: $71,081
TIER III – HAZARDOUS DUTY

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
<td>15 to 19</td>
</tr>
<tr>
<td>Under 25</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 29</td>
<td>783</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 to 34</td>
<td>657</td>
<td>17</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>35 to 39</td>
<td>402</td>
<td>13</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>40 to 44</td>
<td>195</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 to 49</td>
<td>158</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>50 to 54</td>
<td>112</td>
<td></td>
<td>1</td>
<td>1</td>
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<tr>
<td>55 to 59</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 to 64</td>
<td>26</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>65 to 69</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70 &amp; Up</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,477</td>
<td>59</td>
<td>10</td>
<td>1</td>
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</table>

Average Age: 34.4
Average Service: 2.5
Average Salary: $61,359
## SCHEDULE G
(Continued)

### TIER III – HYBRID PLAN

The Number and Average Annual Compensation of Active Employees
By Age and Service as of June 30, 2016

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total</th>
<th>No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
<td>15 to 19</td>
</tr>
<tr>
<td>Under 25</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 29</td>
<td>86</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 to 34</td>
<td>124</td>
<td>9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>35 to 39</td>
<td>122</td>
<td>23</td>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>40 to 44</td>
<td>98</td>
<td>34</td>
<td>39</td>
<td>29</td>
</tr>
<tr>
<td>45 to 49</td>
<td>102</td>
<td>31</td>
<td>73</td>
<td>62</td>
</tr>
<tr>
<td>50 to 54</td>
<td>57</td>
<td>26</td>
<td>67</td>
<td>75</td>
</tr>
<tr>
<td>55 to 59</td>
<td>56</td>
<td>38</td>
<td>81</td>
<td>88</td>
</tr>
<tr>
<td>60 to 64</td>
<td>28</td>
<td>13</td>
<td>56</td>
<td>76</td>
</tr>
<tr>
<td>65 to 69</td>
<td>11</td>
<td>8</td>
<td>31</td>
<td>18</td>
</tr>
<tr>
<td>70 &amp; Up</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>705</strong></td>
<td><strong>183</strong></td>
<td><strong>370</strong></td>
<td><strong>357</strong></td>
</tr>
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</table>

Average Age: 50.4
Average Service: 12.7
Average Salary: $89,717
### SCHEDULE G
(Continued)

**TIER III – ALL OTHERS**

**The Number and Average Annual Compensation of Active Employees**
**By Age and Service as of June 30, 2016**

<table>
<thead>
<tr>
<th>Age</th>
<th>Years of Service</th>
<th>Total No.</th>
<th>Payroll</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 to 4</td>
<td>5 to 9</td>
<td>10 to 14</td>
</tr>
<tr>
<td>Under 25</td>
<td>921</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>25 to 29</td>
<td>1,552</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>30 to 34</td>
<td>1,578</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>35 to 39</td>
<td>1,184</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>40 to 44</td>
<td>930</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>45 to 49</td>
<td>938</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>50 to 54</td>
<td>826</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>55 to 59</td>
<td>565</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>60 to 64</td>
<td>340</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>65 to 69</td>
<td>141</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>70 &amp; Up</td>
<td>57</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9,032</td>
<td>64</td>
<td>26</td>
</tr>
</tbody>
</table>

Average Age: 38.7
Average Service: 2.3
Average Salary: $49,105
**SCHEDULE G**  
(Continued)

**NUMBER OF RETIRED MEMBERS AND THEIR BENEFITS BY AGE**

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Total Annual Benefits</th>
<th>Average Annual Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 50</td>
<td>1,239</td>
<td>$55,593,013</td>
<td>$44,869</td>
</tr>
<tr>
<td>50 – 54</td>
<td>1,862</td>
<td>$88,515,722</td>
<td>$47,538</td>
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<tr>
<td>55 – 59</td>
<td>3,812</td>
<td>$154,180,789</td>
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<tr>
<td>60 – 64</td>
<td>6,856</td>
<td>$284,115,686</td>
<td>$41,440</td>
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<tr>
<td>65 – 69</td>
<td>8,886</td>
<td>$344,587,896</td>
<td>$38,776</td>
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<tr>
<td>70 – 74</td>
<td>7,585</td>
<td>$282,108,260</td>
<td>$37,193</td>
</tr>
<tr>
<td>75 – 79</td>
<td>5,089</td>
<td>$179,244,473</td>
<td>$35,222</td>
</tr>
<tr>
<td>80 – 84</td>
<td>3,761</td>
<td>$125,471,368</td>
<td>$33,361</td>
</tr>
<tr>
<td>85 – 89</td>
<td>2,645</td>
<td>$82,549,702</td>
<td>$31,210</td>
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<tr>
<td>90 – 94</td>
<td>1,268</td>
<td>$33,216,343</td>
<td>$26,196</td>
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<tr>
<td>95 &amp; Over</td>
<td>416</td>
<td>$10,332,057</td>
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<td>Total</td>
<td>43,419</td>
<td>$1,639,895,309</td>
<td>$37,769</td>
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**NUMBER OF BENEFICIARIES AND THEIR BENEFITS BY AGE**

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Total Annual Benefits</th>
<th>Average Annual Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 50</td>
<td>301</td>
<td>$6,256,978</td>
<td>$20,787</td>
</tr>
<tr>
<td>50 – 54</td>
<td>114</td>
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</tr>
<tr>
<td>55 – 59</td>
<td>206</td>
<td>$5,336,544</td>
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</tr>
<tr>
<td>60 – 64</td>
<td>327</td>
<td>$8,761,878</td>
<td>$26,795</td>
</tr>
<tr>
<td>65 – 69</td>
<td>480</td>
<td>$12,464,556</td>
<td>$25,968</td>
</tr>
<tr>
<td>70 – 74</td>
<td>610</td>
<td>$14,633,490</td>
<td>$23,989</td>
</tr>
<tr>
<td>75 – 79</td>
<td>700</td>
<td>$15,499,467</td>
<td>$22,142</td>
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<tr>
<td>80 – 84</td>
<td>748</td>
<td>$15,620,978</td>
<td>$20,884</td>
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<td>85 – 89</td>
<td>700</td>
<td>$13,639,725</td>
<td>$19,485</td>
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<td>90 – 94</td>
<td>446</td>
<td>$8,831,009</td>
<td>$19,800</td>
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<td>$2,284,325</td>
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<td>4,772</td>
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SCHEDULE G
(Continued)

NUMBER OF DEFERRED VESTED MEMBERS
AND THEIR BENEFITS BY AGE

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Total Annual Benefits</th>
<th>Average Annual Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 50</td>
<td>493</td>
<td>$ 6,129,543</td>
<td>$ 12,4331</td>
</tr>
<tr>
<td>50 – 54</td>
<td>535</td>
<td>9,027,565</td>
<td>16,874</td>
</tr>
<tr>
<td>55 – 59</td>
<td>249</td>
<td>3,655,870</td>
<td>14,682</td>
</tr>
<tr>
<td>60 – 64</td>
<td>108</td>
<td>1,232,114</td>
<td>11,408</td>
</tr>
<tr>
<td>65 – 69</td>
<td>20</td>
<td>201,705</td>
<td>10,085</td>
</tr>
<tr>
<td>70 – 74</td>
<td>6</td>
<td>57,475</td>
<td>9,579</td>
</tr>
<tr>
<td>75 – 79</td>
<td>1</td>
<td>11,808</td>
<td>11,808</td>
</tr>
<tr>
<td>80 – 84</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>85 – 89</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>90 – 94</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>95 &amp; Over</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1,412</td>
<td>$ 20,316,080</td>
<td>$ 14,388</td>
</tr>
</tbody>
</table>
## SCHEDULE H

### ANALYSIS OF FINANCIAL EXPERIENCE

Gains & Losses in Accrued Liabilities Resulting from Difference Between Assumed Experience & Actual Experience

($ Millions)

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>$ Gain (or Loss) For Two Year Period Ending 6/30/2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age &amp; Service Retirements.</strong> If members retire at older ages, there is a gain. If younger ages, a loss.</td>
<td>(343.3)</td>
</tr>
<tr>
<td><strong>Disability Retirements.</strong> If disability claims are less than assumed, there is a gain. If more claims, a loss.</td>
<td>(55.8)</td>
</tr>
<tr>
<td><strong>Death-in Service Benefits.</strong> If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.</td>
<td>(24.9)</td>
</tr>
<tr>
<td><strong>Withdrawal From Employment.</strong> If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.</td>
<td>(1.8)</td>
</tr>
<tr>
<td><strong>Pay Increases.</strong> If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.</td>
<td>(203.3)</td>
</tr>
<tr>
<td><strong>New Members.</strong> Additional unfunded accrued liability will produce a loss.</td>
<td>(282.8)</td>
</tr>
<tr>
<td><strong>Investment Income.</strong> If there is a greater investment income than assumed, there is a gain. If less income, a loss.</td>
<td>(232.5)</td>
</tr>
<tr>
<td><strong>Death After Retirement.</strong> If retirants live longer than assumed, there is a loss. If not as long, a gain.</td>
<td>(65.9)</td>
</tr>
<tr>
<td><strong>Other.</strong> Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.</td>
<td>181.1</td>
</tr>
</tbody>
</table>

### Gain (or Loss) During Year From Financial Experience

$ (1,029.2)

### Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.

(4,612.3)

### Composite Gain (or Loss) During Year

$ (5,641.5)
SCHEDULE I

ACTUARIAL SURPLUS TEST

Section 5-162(h) of the General Statutes of Connecticut provides that the Retirement Commission may grant additional Cost-of-Living Adjustments (COLAs) for retired members if an actuarial surplus exists. An actuarial surplus is deemed to exist if three criteria are met.

I. **Investment Income:** The actual rate of return for the Fiscal Year ending on the valuation date must exceed the actuarial interest rate assumption.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Value of Assets on June 30, 2015: (A)</td>
<td>$10,737,492,074</td>
</tr>
<tr>
<td>Market Value of Assets on June 30, 2016: (B)</td>
<td>$10,636,702,645</td>
</tr>
<tr>
<td>Investment Income for FY 2015-2016: (I)</td>
<td>$(17,334,272)</td>
</tr>
<tr>
<td>Actual Rate of Return for FY 2015-2016: ( \frac{2I}{(A + B - I)} )</td>
<td>(0.16)%</td>
</tr>
<tr>
<td>Actuarial Interest Rate Assumption</td>
<td>8.00%</td>
</tr>
</tbody>
</table>

Actual return of (0.16)% is less than the assumed 8.00%, so the first criterion is not met.

II. **Assets vs. Liabilities:** Market value of assets must exceed 50% of specified liabilities.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Value of Assets on June 30, 2016:</td>
<td>$10,636,702,645</td>
</tr>
<tr>
<td>Specified Liabilities on June 30, 2016:</td>
<td></td>
</tr>
<tr>
<td>Liability for Retired Members</td>
<td>$22,664,892,602</td>
</tr>
<tr>
<td>Liability for Terminated Vested Members</td>
<td>$266,708,800</td>
</tr>
<tr>
<td>Liability for Member Contributions with Interest</td>
<td>$1,091,811,686</td>
</tr>
<tr>
<td>Total</td>
<td>$24,023,413,088</td>
</tr>
<tr>
<td>50% of Specified Liabilities</td>
<td>$12,011,706,544</td>
</tr>
</tbody>
</table>

Market Value does not exceed 50% of specified liabilities so the second criterion is not met.

III. **Unfunded Liability:** Actual unfunded liability must be less than the projected unfunded liability five years from the determination date.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Unfunded Liability on June 30, 2016:</td>
<td>$20,387,369,150</td>
</tr>
<tr>
<td>Projected Unfunded Liability on June 30, 2021 (see next page):</td>
<td>$8,804,428,000</td>
</tr>
</tbody>
</table>

Actual Unfunded Liability is not less than Projected Unfunded Liability so the third criterion is not met and therefore, no actuarial surplus exists.
Section 5-162-h(b)(2) of the General Statutes of Connecticut specifies the means of calculating the Projected Unfunded Liability used in the third criterion of the Actuarial Surplus Test. The projection reflects the actual unfunded liability as of December 31, 1983 adjusted for changes in actuarial assumptions and cost methods through the determination date. No provision is made in the Statute for reflecting the impact of plan changes. The projection below reflects the following changes: data correction (June 30, 1987); change in actuarial assumptions (June 30, 1987); change in actuarial cost method (June 30, 1988); change in actuarial assumptions - interest rate only (June 30, 1989); change in actuarial cost method – amortization period only (June 30, 1992); change in actuarial assumptions (June 30, 1993); change in actuarial cost method – level percent amortization (June 30, 1997); change in actuarial methods and assumptions (June 30, 2000); change in actuarial assumptions (June 30, 2004); change in actuarial assumptions (June 30, 2008); change in actuarial assumptions (June 30, 2012) change in actuarial assumptions (June 30, 2016).

<table>
<thead>
<tr>
<th>Year</th>
<th>Unfunded Liability</th>
<th>Year</th>
<th>Unfunded Liability</th>
<th>Year</th>
<th>Unfunded Liability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>$2,524,556</td>
<td>2002</td>
<td>$2,360,589</td>
<td>2017</td>
<td>$9,951,987</td>
</tr>
<tr>
<td>1988</td>
<td>1,954,257</td>
<td>2003</td>
<td>2,429,273</td>
<td>2018</td>
<td>9,659,917</td>
</tr>
<tr>
<td>1989</td>
<td>1,432,333</td>
<td>2004</td>
<td>2,502,591</td>
<td>2019</td>
<td>9,424,079</td>
</tr>
<tr>
<td>1990</td>
<td>1,939,758</td>
<td>2005</td>
<td>2,569,504</td>
<td>2020</td>
<td>9,140,386</td>
</tr>
<tr>
<td>1991</td>
<td>1,930,524</td>
<td>2006</td>
<td>2,634,814</td>
<td>2021</td>
<td>8,804,428</td>
</tr>
<tr>
<td>1992</td>
<td>1,920,505</td>
<td>2007</td>
<td>2,698,021</td>
<td>2022</td>
<td>8,411,458</td>
</tr>
<tr>
<td>1993</td>
<td>1,794,192</td>
<td>2008</td>
<td>2,823,251</td>
<td>2023</td>
<td>7,956,355</td>
</tr>
<tr>
<td>1994</td>
<td>1,787,586</td>
<td>2009</td>
<td>2,861,884</td>
<td>2024</td>
<td>7,433,609</td>
</tr>
<tr>
<td>1995</td>
<td>1,780,419</td>
<td>2010</td>
<td>2,895,933</td>
<td>2025</td>
<td>6,837,282</td>
</tr>
<tr>
<td>1996</td>
<td>1,772,643</td>
<td>2011</td>
<td>2,924,709</td>
<td>2026</td>
<td>6,160,985</td>
</tr>
<tr>
<td>1997</td>
<td>1,764,205</td>
<td>2012</td>
<td>4,160,465</td>
<td>2027</td>
<td>5,397,841</td>
</tr>
<tr>
<td>1998</td>
<td>1,835,087</td>
<td>2013</td>
<td>4,172,971</td>
<td>2028</td>
<td>4,540,451</td>
</tr>
<tr>
<td>1999</td>
<td>1,907,249</td>
<td>2014</td>
<td>4,174,465</td>
<td>2029</td>
<td>3,580,857</td>
</tr>
<tr>
<td>2000</td>
<td>2,222,296</td>
<td>2015</td>
<td>4,163,616</td>
<td>2030</td>
<td>2,510,500</td>
</tr>
<tr>
<td>2001</td>
<td>2,291,494</td>
<td>2016</td>
<td>10,057,733</td>
<td>2031</td>
<td>1,320,178</td>
</tr>
</tbody>
</table>

2032 0
### SCHEDULE J

**PROJECTION OF UNFUNDED ACCRUED LIABILITY**

<table>
<thead>
<tr>
<th>Valuation Year</th>
<th>Unfunded Accrued Liability ($ in thousands)</th>
<th>Amortization Payment ($ in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$20,387,369</td>
<td>$1,289,045</td>
</tr>
<tr>
<td>2017</td>
<td>20,568,774</td>
<td>1,180,377</td>
</tr>
<tr>
<td>2018</td>
<td>20,916,059</td>
<td>1,328,832</td>
</tr>
<tr>
<td>2019</td>
<td>21,266,590</td>
<td>1,488,666</td>
</tr>
<tr>
<td>2020</td>
<td>21,378,865</td>
<td>1,641,447</td>
</tr>
<tr>
<td>2021</td>
<td>21,155,930</td>
<td>1,774,968</td>
</tr>
<tr>
<td>2022</td>
<td>20,779,484</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2023</td>
<td>20,252,870</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2024</td>
<td>19,689,918</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2025</td>
<td>19,088,124</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2026</td>
<td>18,444,805</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2027</td>
<td>17,757,097</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2028</td>
<td>17,021,938</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2029</td>
<td>16,236,052</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2030</td>
<td>15,395,941</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2031</td>
<td>14,497,861</td>
<td>1,895,021</td>
</tr>
<tr>
<td>2032</td>
<td>13,537,814</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2033</td>
<td>12,985,897</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2034</td>
<td>12,395,901</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2035</td>
<td>11,765,195</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2036</td>
<td>11,090,971</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2037</td>
<td>10,370,225</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2038</td>
<td>9,599,747</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2039</td>
<td>8,776,107</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2040</td>
<td>7,895,635</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2041</td>
<td>6,954,411</td>
<td>1,436,465</td>
</tr>
<tr>
<td>2042</td>
<td>5,948,242</td>
<td>1,427,078</td>
</tr>
<tr>
<td>2043</td>
<td>4,882,351</td>
<td>1,414,407</td>
</tr>
<tr>
<td>2044</td>
<td>3,756,023</td>
<td>1,390,832</td>
</tr>
<tr>
<td>2045</td>
<td>2,576,392</td>
<td>1,375,545</td>
</tr>
<tr>
<td>2046</td>
<td>1,331,168</td>
<td>1,375,545</td>
</tr>
<tr>
<td>2047</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>