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December 14, 2021

[Via Email CRupe@leg.state.vt.us](mailto:CRupe@leg.state.vt.us)

Mr. Chris Rupe
Fiscal Analyst
Joint Fiscal Office

Re: Request 6 – Actuarial Modeling of Follow-Up Scenarios for VSERS Group F, VSERS Group C, and VSTRS

Dear Chris:

As requested by the Pension Task Force, we have calculated the impact of potential changes to financing mechanisms and plan provisions affecting certain members of the Vermont State Employees' Retirement System (VSERS) and the Vermont State Teachers' Retirement System (VSTRS). The revenue scenarios include various combinations of one-time revenue sources, recurring revenue sources, and changes to member contribution rates. The plan changes include various changes to the post-retirement benefit increase/COLA provisions and the maximum benefits payable. The results of the June 30, 2020, actuarial valuation, projected forward on an open group basis, are used as a baseline.

For the revenue scenarios, we show the additional State revenue and expected member contributions for each year from FY22-FY38, the impact on the estimated actuarially determined contribution (ADC) for FY23¹ and FY28², the present value³ of the additional member contributions from FY23-FY38, the present value of the decrease in the employer contributions from FY23-FY38, and the impact on the projected amortization payments from FY22-FY38.

We have calculated the impact of the plan change scenarios on the actuarial accrued liability, unfunded actuarial accrued liability, funded percentage, normal cost, and the estimated FY23 ADC. We have also included the impact on the projected amortization payments from FY22-FY38.

For the plan change scenarios, including the COLA scenarios, we have calculated the impact that these changes would have on current active members only as of the June 30, 2020, valuation date, as indicated in the request.

The results of this analysis are shown in the pages following this letter.

¹ Since the actual FY23 contribution was determined with the recently-completed June 30, 2021, actuarial valuation, comparisons of the estimated FY23 ADCs in this analysis are provided for illustrative purposes only.

² As some member contribution increase scenarios involve a series of increases over time, we are showing the impact on a projected ADC value as well to illustrate the full magnitude of the changes.

³ Present values are calculated as of June 30, 2020, to be consistent with the date of the actuarial valuation this analysis is based on.

VSERS Group F Follow-Up Scenarios

Revenue Scenarios – Assume member contribution rate changes under the following scenarios:

Revenue Scenario	Description of Member Contribution Changes
Rev-5	0-24 th salary percentile: No change. 25 th -49 th salary percentile: Increase member contribution rate by 0.5% per year for 3 years beginning in FY23. 50 th -74 th salary percentile: Increase member contribution rate by 0.5% per year for 4 years beginning in FY23. 75 th -100 th salary percentile: Increase member contribution rate by 0.5% per year for 5 years beginning in FY23.
	Same member contribution rate structure as Rev-5 above.
Rev-6	After 5 years (when increases are fully phased in), any future growth in the total normal cost is paid equally between employees and employer; however, the employee contribution increase is capped at a maximum of 0.25% in any given year.

Revenue Scenario Assumptions:

- The salary percentiles used for this analysis are as follows:
 - 25th Percentile: \$50,000; 50th Percentile: \$62,000; 75th Percentile: \$75,000
- Contribution rates are applied to a member's entire salary

Plan Change Scenarios – In addition to the revenue scenarios above, the following plan change scenarios were prepared:

Description of Plan Changes	PC-7 ⁴	Combo-S	Combo-T	Combo-U	Combo-V*	Combo-W*	Combo-X	Combo-Y	Combo-Z
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum. (PC-3 ⁵)		✓	✓	✓	✓	✓	✓	✓	✓
Cost-of-Living-Adjustment (COLA) Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income. (PC-1)		✓	✓	✓	✓	✓			
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. (PC-2)							✓	✓	✓
Increase the Max Benefit Cap by 1% of Average Final Compensation (AFC) for each year worked beyond 30 years (Old Group F) and 36 years (New Group F), applied prospectively to service actually worked after July 1, 2022. (PC-6) <i>Additionally, assume that 85% of the workforce will not change their behavior; 10% retire by the 3rd additional year worked; and 5% retire by the 5th additional year worked.</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Members will not receive a COLA until they have been retired for at least 24 months. (PC-4)			✓		✓			✓	
Members will not receive a COLA until they have been retired for at least 36 months. (PC-5)				✓		✓			✓

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

⁴ PC-7 is consistent with PC-6 from the November 16th and November 30th letters while also including retirement rate adjustments that reflect the anticipated member behavior as indicated in the request.

⁵ Scenario labels from this analysis (PC-1 through PC-6) refer to like scenarios analyzed in the “Actuarial Modeling of Individual Scenarios” letter dated November 16, 2021.

Description of Plan Changes	Combo-AA*	Combo-AB*	Combo-AC*	Combo-AD*	Combo-AE*	Combo-AF*	Combo-AG*	Combo-AH*
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum. (PC-3)	✓	✓	✓	✓	✓	✓	✓	✓
Cost-of-Living-Adjustment (COLA) Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income. (PC-1)					✓	✓		
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. (PC-2)	✓	✓					✓	✓
Increase the Max Benefit Cap by 1% of Average Final Compensation (AFC) for each year worked beyond 30 years (Old Group F) and 36 years (New Group F), applied prospectively to service actually worked after July 1, 2022. (PC-6) <i>Additionally, assume that 85% of the workforce will not change their behavior; 10% retire by the 3rd additional year worked; and 5% retire by the 5th additional year worked.</i>	✓	✓						
Members will not receive a COLA until they have been retired for at least 24 months. (PC-4)	✓		✓		✓		✓	
Members will not receive a COLA until they have been retired for at least 36 months. (PC-5)		✓		✓		✓		✓

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

Plan Change Scenario Assumptions:

- PC-2
 - The \$24,000 threshold is assumed to increase annually by 2.30% (current assumption for inflation/CPI)
- PC-3
 - Decrease the annual COLA assumption from 2.40% to 2.25%⁶
- PC-6
 - Old Group F: Group F members who were hired before July 1, 2008
 - New Group F: Group F members who were hired on or after July 1, 2008
- Normal Retirement Eligibility is defined as follows:
 - Old Group F: Age 62 or 30 years of service
 - New Group F: Age 65 or a sum of age plus service greater than or equal to 87

⁶ The stochastic analysis of inflation combined with the current minimum and maximum thresholds used in connection with the 2020 Experience Study Review was rerun with the thresholds identified in PC-3. The outcome was a reduction of approximately 0.15% in the 50th percentile long-term average COLA.

VSERS Group C Follow-Up Scenarios

Plan Change Scenarios – The following plan change scenarios were prepared:

Description of Plan Changes	PC-3	PC-4	Combo-A	Combo-B	Combo-C	Combo-D
Increase the Max Benefit Cap by 1% of AFC for each year worked beyond reaching the later of age 50 or 20 years of benefit service, applied prospectively to service actually worked after July 1, 2022. Increase mandatory retirement age to 57. (PC-1 ⁷)			✓	✓		
Increase the Max Benefit Cap by 2% of AFC for each year worked beyond reaching the later of age 50 or 20 years of benefit service, applied prospectively to service actually worked after July 1, 2022. Increase mandatory retirement age to 57. (PC-2)					✓	✓
Members will not receive a COLA until they have been retired for at least 24 months.	✓		✓		✓	
Members will not receive a COLA until they have been retired for at least 36 months.		✓		✓		✓

Plan Change Scenario Assumptions:

- PC-1 and PC-2
 - After increasing the mandatory retirement age to 57, the retirement rate assumptions were updated as follows: 50% at age 50, 10% at each age from age 51 through age 53, 5% at each age from age 54 through age 56, and 100% at age 57

⁷ Scenario labels from this analysis (PC-1 and PC-2) refer to like scenarios analyzed in the “Actuarial Modeling of Individual Scenarios” letter dated November 16, 2021.

VSTRS Follow-Up Scenarios

Revenue Scenarios – Assume that additional one-time and recurring revenue sources are enacted and that the proceeds are applied toward the unfunded actuarial accrued liability, in combination with varying member contribution changes under the following scenarios:

Revenue Scenario	One-Time Revenue	Recurring Revenue	Description of Member Contribution Changes																																				
Rev-5	\$75M	\$15M																																					
Rev-6			<p>Replace current “flat” member contribution rates with “progressive” contribution rates beginning in FY23 as follows:</p> <ul style="list-style-type: none"> -5.50% on the first \$40,000 of income -6.25% on income between \$40,000 and \$60,000 -7.50% on income between \$60,000 and \$80,000 -8.25% on income between \$80,000 and \$100,000 -9.25% on income above \$100,000 																																				
Rev-7			<p>Replace current “flat” member contribution rates with phased in “progressive” contribution rates beginning in FY23 as follows:</p> <table border="1"> <thead> <tr> <th>Income</th> <th>FY23</th> <th>FY24</th> <th>FY25</th> <th>FY26</th> <th>FY27+</th> </tr> </thead> <tbody> <tr> <td>\$0-\$40K</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> </tr> <tr> <td>\$40K-\$60K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>6.75%</td> <td>6.75%</td> </tr> <tr> <td>\$60K-\$80K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>7.00%</td> <td>7.50%</td> </tr> <tr> <td>\$80K-\$100K</td> <td>6.25%</td> <td>6.75%</td> <td>7.25%</td> <td>7.75%</td> <td>8.25%</td> </tr> <tr> <td>\$100K+</td> <td>6.50%</td> <td>7.00%</td> <td>7.50%</td> <td>8.25%</td> <td>9.00%</td> </tr> </tbody> </table>	Income	FY23	FY24	FY25	FY26	FY27+	\$0-\$40K	6.00%	6.00%	6.00%	6.00%	6.00%	\$40K-\$60K	6.25%	6.50%	6.75%	6.75%	6.75%	\$60K-\$80K	6.25%	6.50%	6.75%	7.00%	7.50%	\$80K-\$100K	6.25%	6.75%	7.25%	7.75%	8.25%	\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%
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\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%																																		
Rev-8			<p>Same member contribution rate structure as Rev-7 above.</p> <p>Once the funding ratio of the System is at or above 80%, the member contribution rate for all members will be 6.00%.</p>																																				

Revenue Scenario	One-Time Revenue	Recurring Revenue	Description of Member Contribution Changes																																				
Rev-C	\$75M	\$15M	Replace current “flat” member contribution rates with “progressive” contribution rates beginning in FY23 as follows: -5.50% on the first \$40,000 of income -6.25% on income between \$40,000 and \$60,000 -7.50% on income between \$60,000 and \$80,000 -8.25% on income between \$80,000 and \$100,000 -9.25% on income above \$100,000																																				
Rev-D	\$75M	\$15M	Replace current “flat” member contribution rates with phased in “progressive” contribution rates beginning in FY23 as follows: <table border="1"> <thead> <tr> <th>Income</th> <th>FY23</th> <th>FY24</th> <th>FY25</th> <th>FY26</th> <th>FY27+</th> </tr> </thead> <tbody> <tr> <td>\$0-\$40K</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> </tr> <tr> <td>\$40K-\$60K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>6.75%</td> <td>6.75%</td> </tr> <tr> <td>\$60K-\$80K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>7.00%</td> <td>7.50%</td> </tr> <tr> <td>\$80K-\$100K</td> <td>6.25%</td> <td>6.75%</td> <td>7.25%</td> <td>7.75%</td> <td>8.25%</td> </tr> <tr> <td>\$100K+</td> <td>6.50%</td> <td>7.00%</td> <td>7.50%</td> <td>8.25%</td> <td>9.00%</td> </tr> </tbody> </table>	Income	FY23	FY24	FY25	FY26	FY27+	\$0-\$40K	6.00%	6.00%	6.00%	6.00%	6.00%	\$40K-\$60K	6.25%	6.50%	6.75%	6.75%	6.75%	\$60K-\$80K	6.25%	6.50%	6.75%	7.00%	7.50%	\$80K-\$100K	6.25%	6.75%	7.25%	7.75%	8.25%	\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%
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\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%																																		
Rev-E	\$75M	\$15M	Same member contribution rate structure as Rev-D above. Once the funding ratio of the System is at or above 80%, the member contribution rate for all members will be 6.00%.																																				

Revenue Scenario Assumptions:

- One-time revenue
 - Additional funds paid June 30, 2022, and are in addition to ADCs
 - Additional funds factored into all subsequent ADCs
- Recurring revenue
 - Enacted during 2022 Legislative Session and will take effect January 1, 2023
 - Only 5/12ths of annual revenue collected in FY23
 - First full year of annual revenue in FY24, with 2% annual increases thereafter
 - All future actuarially determined contributions (ADCs) are fully funded
 - Additional funds paid annually on June 30th, and are in addition to ADCs
 - Additional funds factored into all subsequent ADCs
 - No additional funds after System achieves 100% funding

- Member contribution changes
 - Rev-8
 - In revenue scenario Rev-7, the funded ratio of the System is projected to reach 80% in FY34; therefore, for Rev-8, we assumed that from FY35 onward, all member contribution rates were 6.00%.
 - Rev-E
 - In revenue scenario Rev-D, the funded ratio of the System is projected to reach 80% in FY33; therefore, for Rev-E, we assumed that from FY34 onward, all member contribution rates were 6.00%.

Plan Change Scenarios – In addition to the revenue scenarios above, the following plan change scenarios were prepared:

Description of Plan Changes	PC-5	PC-6	PC-7	PC-8	PC-9
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum.	✓				
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect current COLA calculated at 50% of CPI .		✓			
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect COLA calculated at 100% of CPI .			✓		
Members will not receive a COLA until they have been retired for at least 24 months.				✓	
Members will not receive a COLA until they have been retired for at least 36 months.					✓

Description of Plan Changes	Combo-G	Combo-H	Combo-I	Combo-J*	Combo-K*	Combo-L	Combo-M	Combo-N	Combo-O*	Combo-P*
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect current COLA calculated at 50% of CPI .	✓	✓	✓	✓	✓					
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect COLA calculated at 100% of CPI .						✓	✓	✓	✓	✓
Members will not receive a COLA until they have been retired for at least 24 months.		✓		✓			✓		✓	
Members will not receive a COLA until they have been retired for at least 36 months.			✓		✓			✓		✓

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

Plan Change Scenario Assumptions:

- PC-5
 - Decrease the annual COLA assumption from 1.35% to 1.20%⁸
- PC-6
 - The \$24,000 threshold is assumed to increase annually by 2.30% (current assumption for inflation/CPI)
 - Apply the following COLA increase assumption:
 - 1.35% where 50% of CPI is applied
 - When PC-6 is combined with PC-5 (CPI thresholds are updated to reflect a 0% minimum and a 4% maximum):
 - 1.20% where 50% of CPI is applied
- PC-7
 - The \$24,000 threshold is assumed to increase annually by 2.30% (current assumption for inflation/CPI)
 - Apply the following COLA increase assumption:
 - 2.40% where 100% of CPI is applied
 - When PC-7 is combined with PC-5 (CPI thresholds are updated to reflect a 0% minimum and a 4% maximum):
 - 2.25% where 100% of CPI is applied
- Normal Retirement Eligibility is defined as follows:
 - Group C1 (Grandfathered): Age 62 or 30 years of creditable service
 - Group C2 (Non-Grandfathered): Age 65 or age plus creditable service greater than or equal to 90

⁸ The stochastic analysis of inflation combined with the current minimum and maximum thresholds used in connection with the 2020 Experience Study Review was rerun with the thresholds identified in PC-5. The outcome was a reduction of approximately 0.15% in the 50th percentile long-term average COLA.

Methodology

ADCs for a given fiscal year are determined based on the actuarial valuation from two years prior. For example, the actuarial valuation as of June 30, 2020 determined the ADC for the fiscal year ending June 30, 2022. Since the first payment under all revenue scenarios will be made during FY22 and included in the assets as of June 30, 2022, the exhibits for the revenue scenarios that illustrate projected amortization payments show the first decrease as a result of the additional revenue in the row corresponding to FY24. Since we are using the 2020 actuarial valuation, plan changes and changes in member contribution rates will first impact amortization payments in FY23.

All member contribution rate changes are assumed to be effective July 1, 2022. Consequently, any increase in member contributions outlined in this analysis will reduce the ADC for FY23. The present value of the additional member contributions is equal to the sum of the additional member contributions from FY23-FY38 that arise from the member contribution changes, discounted using the current investment return assumption of 7.00%. The present value of the decrease in employer contributions is equal to the total reduction in employer contributions from FY23-FY38 due to the additional revenue amounts and the member contribution changes, discounted using the current investment return assumption of 7.00%.

Within each individual group/System, each of the plan change scenarios can be viewed as additive if combined with any of the revenue scenarios from this analysis or from the December 8th communication. For example, in order to estimate the impact of combining the VSERS Group F plan change scenario PC-7 with the VSERS Group F revenue scenario Rev-5, the impact of PC-7 can be added to the impact of Rev-5. Additionally, since the VSERS Group F plan change scenarios only impact active members in Group F and the VSERS Group C plan change scenarios only impact active members in Group C, any plan change scenario for VSERS Group F can be viewed as additive if combined with any plan change scenario for VSERS Group C. However, two plan changes within a group may not be additive.

Except for the specific VSERS Group F and VSERS Group C plan changes noted above, we did not assume that any other change would materially affect participant behavior and therefore did not revise any demographic assumptions as a result of these plan changes. If any changes affect participant behavior, the results would be different than those illustrated in this analysis. The plan changes were valued assuming that the changes could be fully implemented and that no portion of current accrued or projected benefits were protected. If any changes are implemented with such protections in place, or if required by law, the reductions in actuarial accrued liability and actuarially determined contribution will be lower than illustrated in this analysis.

Disclosures

This analysis was prepared in accordance with generally accepted actuarial principles and practices at the request of the Pension Task Force. Please refer to our June 30, 2020, Actuarial Valuation and Review reports for both VSERS and VSTRS for the data, assumptions, and plan of benefits underlying these calculations.

The measurements shown in these actuarial calculations may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements 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); and changes in plan provisions or applicable law.

Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Deterministic cost projections are based on a proprietary forecasting model. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary.

Segal is not a law firm and we cannot offer legal advice. If legal advice is needed, please consult with appropriate legal counsel.

The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this report is complete and accurate. In my opinion, each assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

Please let me know if you have any questions or need any additional information.

Sincerely,



Matthew A. Strom, FSA, MAAA, EA
Senior Vice President and Actuary

cc: Kathleen Riley, Segal

Results

VSERS Group F – Follow-Up Scenario Descriptions (Revenue)

Revenue Scenario	Description of Member Contribution Changes
Rev-5	0-24 th salary percentile: No change. 25 th -49 th salary percentile: Increase member contribution rate by 0.5% per year for 3 years beginning in FY23. 50 th -74 th salary percentile: Increase member contribution rate by 0.5% per year for 4 years beginning in FY23. 75 th -100 th salary percentile: Increase member contribution rate by 0.5% per year for 5 years beginning in FY23.
	Same member contribution rate structure as Rev-5 above.
Rev-6	After 5 years (when increases are fully phased in), any future growth in the total normal cost is paid equally between employees and employer; however, the employee contribution increase is capped at a maximum of 0.25% in any given year.

VSERS Group F – Follow-Up Scenario Descriptions (Plan Change)

Description of Plan Changes	PC-7	Combo-S	Combo-T	Combo-U	Combo-V*	Combo-W*	Combo-X	Combo-Y	Combo-Z
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum. (PC-3)		✓	✓	✓	✓	✓	✓	✓	✓
Cost-of-Living-Adjustment (COLA) Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income. (PC-1)		✓	✓	✓	✓	✓			
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. (PC-2)							✓	✓	✓
Increase the Max Benefit Cap by 1% of Average Final Compensation (AFC) for each year worked beyond 30 years (Old Group F) and 36 years (New Group F), applied prospectively to service actually worked after July 1, 2022. (PC-6) <i>Additionally, assume that 85% of the workforce will not change their behavior; 10% retire by the 3rd additional year worked; and 5% retire by the 5th additional year worked.</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓
Members will not receive a COLA until they have been retired for at least 24 months. (PC-4)			✓		✓			✓	
Members will not receive a COLA until they have been retired for at least 36 months. (PC-5)				✓		✓			✓

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

VSERS Group F – Follow-Up Scenario Descriptions (Plan Change)

Description of Plan Changes	Combo-AA*	Combo-AB*	Combo-AC*	Combo-AD*	Combo-AE*	Combo-AF*	Combo-AG*	Combo-AH*
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum. (PC-3)	✓	✓	✓	✓	✓	✓	✓	✓
Cost-of-Living-Adjustment (COLA) Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income. (PC-1)					✓	✓		
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. (PC-2)	✓	✓					✓	✓
Increase the Max Benefit Cap by 1% of Average Final Compensation (AFC) for each year worked beyond 30 years (Old Group F) and 36 years (New Group F), applied prospectively to service actually worked after July 1, 2022. (PC-6) <i>Additionally, assume that 85% of the workforce will not change their behavior; 10% retire by the 3rd additional year worked; and 5% retire by the 5th additional year worked.</i>	✓	✓						
Members will not receive a COLA until they have been retired for at least 24 months. (PC-4)	✓		✓		✓		✓	
Members will not receive a COLA until they have been retired for at least 36 months. (PC-5)		✓		✓		✓		✓

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

VSERS Group F – Additional Revenue Amounts

June 30	Additional Revenue Amounts (\$ in millions)	
	Rev-5	Rev-6*
2022	-	-
2023	\$2.5	\$2.5
2024	5.3	5.3
2025	8.4	8.4
2026	11.1	11.1
2027	13.3	13.3
2028	13.9	13.9
2029	14.5	14.5
2030	15.2	15.2
2031	15.8	15.8
2032	16.5	16.5
2033	17.1	17.1
2034	17.8	17.8
2035	18.4	18.4
2036	19.1	19.1
2037	19.7	19.7
2038	20.4	20.4

*The baseline projections of normal cost are generally level as a percentage of payroll, so there are no additional member contributions to reflect in this scenario. However, as experience emerges over time and demographic shifts, changes in actuarial assumptions, etc., cause an increase in normal cost as a percentage of payroll, additional member contributions would be required.

VSERS Group F – Revenue Scenarios Rev-5 through Rev-6

2020 Valuation (\$ in millions)	Baseline	Rev-5	Rev-6*
Estimated Actuarially Determined Contribution for Fiscal 2023**:	\$123.7	\$121.2	\$121.2
Change from Baseline Valuation:		(\$2.5)	(\$2.5)
Projected Actuarially Determined Contribution for Fiscal 2028:	\$149.9	\$135.7	\$135.7
Change from Baseline Valuation:		(\$14.2)	(\$14.2)
Present Value of Additional Member Contributions from Fiscal 2023 through Fiscal 2038:	N/A	\$109.4	\$109.4
Present Value of Decrease in Employer Contributions from Fiscal 2023 through Fiscal 2038:	N/A	(\$100.5)	(\$100.5)

**The baseline projections of normal cost are generally level as a percentage of payroll, so there are no additional member contributions reflected in this scenario.

**Estimated in the June 30, 2020 Actuarial Valuation and Review for VSERS

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	Rev-5	Rev-6
2022	\$84.8	\$84.8	\$84.8
2023	90.4	90.5	90.5
2024	94.8	94.9	94.9
2025	99.1	99.0	99.0
2026	103.4	103.0	103.0
2027	107.7	106.9	106.9
2028	112.0	110.9	110.9
2029	116.3	115.0	115.0
2030	120.8	119.3	119.3
2031	125.3	123.8	123.8
2032	129.9	128.3	128.3
2033	134.6	133.0	133.0
2034	139.4	137.8	137.8
2035	144.4	142.7	142.7
2036	149.6	147.9	147.9
2037	155.2	153.4	153.4
2038	161.2	159.5	159.5

VSERS Group F – Plan Change Scenarios PC-7 and Combo-S through Combo-W

2020 Valuation (\$ in millions)	Baseline	PC-7	Combo-S	Combo-T	Combo-U	Combo-V*	Combo-W*
Actuarial Accrued Liability:	\$3,095.3	\$3,124.3	\$3,011.6	\$3,001.6	\$2,993.7	\$3,057.2	\$3,053.9
Change from Baseline Valuation:		\$29.0	(\$83.7)	(\$93.7)	(\$101.6)	(\$38.1)	(\$41.4)
Actuarial Value of Assets:	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8
Unfunded Actuarial Accrued Liability:	\$1,040.5	\$1,069.5	\$956.8	\$946.8	\$938.9	\$1,002.4	\$999.1
Change from Baseline Valuation:		\$29.0	(\$83.7)	(\$93.7)	(\$101.6)	(\$38.1)	(\$41.4)
Funded Percentage:	66.4%	65.8%	68.2%	68.5%	68.6%	67.2%	67.3%
Change from Baseline Valuation:		-0.6%	1.8%	2.1%	2.2%	0.8%	0.9%
Normal Cost**:	\$73.2	\$74.0	\$68.4	\$67.7	\$67.1	\$68.9	\$68.6
Change from Baseline Valuation:		\$0.8	(\$4.8)	(\$5.5)	(\$6.1)	(\$4.3)	(\$4.6)
Estimated Actuarially Determined Contribution for Fiscal 2023***:	\$123.7	\$127.1	\$111.1	\$109.4	\$108.1	\$115.7	\$115.1
Change from Baseline Valuation:		\$3.4	(\$12.6)	(\$14.3)	(\$15.6)	(\$8.0)	(\$8.6)

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

**Adjusted for middle of the year timing

***Estimated in the June 30, 2020 Actuarial Valuation and Review for VSERS

Note: Numbers may not add due to rounding

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	PC-7	Combo-S	Combo-T	Combo-U	Combo-V*	Combo-W*
2022	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8
2023	90.4	92.9	83.3	82.4	81.7	87.2	86.9
2024	94.8	97.6	86.4	85.3	84.5	90.7	90.4
2025	99.1	102.1	90.3	89.3	88.4	94.9	94.5
2026	103.4	106.4	94.3	93.2	92.4	99.0	98.6
2027	107.7	110.8	98.3	97.2	96.3	103.1	102.8
2028	112.0	115.2	102.4	101.2	100.3	107.3	106.9
2029	116.3	119.7	106.4	105.2	104.3	111.5	111.1
2030	120.8	124.2	110.5	109.3	108.3	115.7	115.3
2031	125.3	128.8	114.7	113.4	112.5	120.1	119.6
2032	129.9	133.5	119.0	117.7	116.7	124.5	124.1
2033	134.6	138.3	123.3	122.0	121.0	129.0	128.6
2034	139.4	143.2	127.8	126.4	125.4	133.7	133.2
2035	144.4	148.3	132.4	131.0	130.0	138.5	138.0
2036	149.6	153.6	137.3	135.8	134.7	143.5	143.0
2037	155.2	159.2	142.4	140.9	139.8	148.8	148.3
2038	161.2	165.4	148.0	146.5	145.3	154.6	154.1

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

VSERS Group F – Plan Change Scenarios Combo-X through Combo-AB

2020 Valuation (\$ in millions)	Baseline	Combo-X	Combo-Y	Combo-Z	Combo-AA*	Combo-AB*
Actuarial Accrued Liability:	\$3,095.3	\$3,038.9	\$3,027.1	\$3,017.6	\$3,073.0	\$3,068.6
Change from Baseline Valuation:		(\$56.4)	(\$68.2)	(\$77.7)	(\$22.3)	(\$26.7)
Actuarial Value of Assets:	<u>\$2,054.8</u>	<u>\$2,054.8</u>	<u>\$2,054.8</u>	<u>\$2,054.8</u>	<u>\$2,054.8</u>	<u>\$2,054.8</u>
Unfunded Actuarial Accrued Liability:	\$1,040.5	\$984.1	\$972.3	\$962.8	\$1,018.2	\$1,013.8
Change from Baseline Valuation:		(\$56.4)	(\$68.2)	(\$77.7)	(\$22.3)	(\$26.7)
Funded Percentage:	66.4%	67.6%	67.9%	68.1%	66.9%	67.0%
Change from Baseline Valuation:		1.2%	1.5%	1.7%	0.5%	0.6%
Normal Cost**:	\$73.2	\$70.0	\$69.2	\$68.5	\$70.2	\$69.8
Change from Baseline Valuation:		(\$3.2)	(\$4.0)	(\$4.7)	(\$3.0)	(\$3.4)
Estimated Actuarially Determined Contribution for Fiscal 2023***:	\$123.7	\$115.3	\$113.3	\$111.7	\$118.5	\$117.6
Change from Baseline Valuation:		(\$8.4)	(\$10.4)	(\$12.0)	(\$5.2)	(\$6.1)

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

**Adjusted for middle of the year timing

***Estimated in the June 30, 2020 Actuarial Valuation and Review for VSERS

Note: Numbers may not add due to rounding

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	Combo-X	Combo-Y	Combo-Z	Combo-AA*	Combo-AB*
2022	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8
2023	90.4	85.6	84.6	83.8	88.5	88.1
2024	94.8	89.1	87.9	86.9	92.4	91.9
2025	99.1	93.2	91.9	90.9	96.6	96.1
2026	103.4	97.3	96.0	95.0	100.7	100.2
2027	107.7	101.4	100.0	99.0	104.9	104.4
2028	112.0	105.5	104.1	103.0	109.2	108.6
2029	116.3	109.6	108.2	107.1	113.4	112.9
2030	120.8	113.8	112.4	111.2	117.7	117.1
2031	125.3	118.1	116.6	115.4	122.1	121.5
2032	129.9	122.5	120.9	119.7	126.6	126.0
2033	134.6	126.9	125.4	124.1	131.2	130.5
2034	139.4	131.5	129.9	128.6	135.9	135.2
2035	144.4	136.2	134.6	133.3	140.7	140.1
2036	149.6	141.2	139.5	138.1	145.8	145.1
2037	155.2	146.4	144.6	143.3	151.1	150.5
2038	161.2	152.1	150.3	148.9	157.0	156.3

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

VSERS Group F – Plan Change Scenarios Combo-AC through Combo-AH

2020 Valuation (\$ in millions)	Baseline	Combo-AC*	Combo-AD*	Combo-AE*	Combo-AF*	Combo-AG*	Combo-AH*
Actuarial Accrued Liability:	\$3,095.3	\$3,077.1	\$3,068.7	\$3,032.1	\$3,028.7	\$3,048.0	\$3,043.5
Change from Baseline Valuation:		(\$18.2)	(\$26.6)	(\$63.2)	(\$66.6)	(\$47.3)	(\$51.8)
Actuarial Value of Assets:	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8
Unfunded Actuarial Accrued Liability:	\$1,040.5	\$1,022.3	\$1,013.9	\$977.3	\$973.9	\$993.2	\$988.7
Change from Baseline Valuation:		(\$18.2)	(\$26.6)	(\$63.2)	(\$66.6)	(\$47.3)	(\$51.8)
Funded Percentage:	66.4%	66.8%	67.0%	67.8%	67.8%	67.4%	67.5%
Change from Baseline Valuation:		0.4%	0.6%	1.4%	1.4%	1.0%	1.1%
Normal Cost**:	\$73.2	\$71.7	\$71.0	\$68.3	\$68.0	\$69.6	\$69.2
Change from Baseline Valuation:		(\$1.5)	(\$2.2)	(\$4.9)	(\$5.2)	(\$3.6)	(\$4.0)
Estimated Actuarially Determined Contribution for Fiscal 2023***:	\$123.7	\$120.5	\$119.0	\$112.8	\$112.2	\$115.7	\$114.8
Change from Baseline Valuation:		(\$3.2)	(\$4.7)	(\$10.9)	(\$11.5)	(\$8.0)	(\$8.9)

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

**Adjusted for middle of the year timing

***Estimated in the June 30, 2020 Actuarial Valuation and Review for VSERS

Note: Numbers may not add due to rounding

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	Combo-AC*	Combo-AD*	Combo-AE*	Combo-AF*	Combo-AG*	Combo-AH*
2022	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8
2023	90.4	88.9	88.1	85.0	84.7	86.4	86.0
2024	94.8	92.9	92.0	88.3	87.9	89.9	89.5
2025	99.1	97.1	96.2	92.3	91.9	94.0	93.5
2026	103.4	101.4	100.4	96.4	96.0	98.1	97.6
2027	107.7	105.6	104.6	100.4	100.0	102.3	101.7
2028	112.0	109.8	108.8	104.5	104.1	106.4	105.8
2029	116.3	114.1	113.1	108.6	108.2	110.5	110.0
2030	120.8	118.5	117.4	112.8	112.4	114.8	114.2
2031	125.3	122.9	121.8	117.0	116.6	119.1	118.5
2032	129.9	127.4	126.3	121.4	120.9	123.5	122.9
2033	134.6	132.1	130.9	125.8	125.4	128.0	127.4
2034	139.4	136.8	135.6	130.4	129.9	132.6	131.9
2035	144.4	141.8	140.5	135.1	134.6	137.4	136.7
2036	149.6	146.9	145.6	140.0	139.5	142.4	141.7
2037	155.2	152.3	151.0	145.3	144.7	147.6	146.9
2038	161.2	158.4	157.0	151.0	150.5	153.4	152.7

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

VSERS Group C – Follow-Up Scenario Descriptions (Plan Change)

Description of Plan Changes	PC-3	PC-4	Combo-A	Combo-B	Combo-C	Combo-D
Increase the Max Benefit Cap by 1% of AFC for each year worked beyond reaching the later of age 50 or 20 years of benefit service, applied prospectively to service actually worked after July 1, 2022. Increase mandatory retirement age to 57. (PC-1)			✓	✓		
Increase the Max Benefit Cap by 2% of AFC for each year worked beyond reaching the later of age 50 or 20 years of benefit service, applied prospectively to service actually worked after July 1, 2022. Increase mandatory retirement age to 57. (PC-2)					✓	✓
Members will not receive a COLA until they have been retired for at least 24 months.	✓		✓		✓	
Members will not receive a COLA until they have been retired for at least 36 months.		✓		✓		✓

VSERS Group C – Plan Change Scenarios PC-3 through PC-4 and Combo-A through Combo-D

2020 Valuation (\$ in millions)	Baseline	PC-3	PC-4	Combo-A	Combo-B	Combo-C	Combo-D
Actuarial Accrued Liability:	\$3,095.3	\$3,091.5	\$3,088.0	\$3,069.6	\$3,066.5	\$3,076.5	\$3,073.3
Change from Baseline Valuation:		(\$3.8)	(\$7.3)	(\$25.7)	(\$28.8)	(\$18.8)	(\$22.0)
Actuarial Value of Assets:	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8	\$2,054.8
Unfunded Actuarial Accrued Liability:	\$1,040.5	\$1,036.7	\$1,033.2	\$1,014.7	\$1,011.7	\$1,021.7	\$1,018.5
Change from Baseline Valuation:		(\$3.8)	(\$7.3)	(\$25.8)	(\$28.8)	(\$18.8)	(\$22.0)
Funded Percentage:	66.4%	66.5%	66.5%	66.9%	67.0%	66.8%	66.9%
Change from Baseline Valuation:		0.1%	0.1%	0.5%	0.6%	0.4%	0.5%
Normal Cost*:	\$73.2	\$73.0	\$72.8	\$71.8	\$71.6	\$72.1	\$72.0
Change from Baseline Valuation:		(\$0.2)	(\$0.4)	(\$1.4)	(\$1.6)	(\$1.1)	(\$1.2)
Estimated Actuarially Determined Contribution for Fiscal 2023**:	\$123.7	\$123.2	\$122.6	\$119.9	\$119.4	\$120.9	\$120.4
Change from Baseline Valuation:		(\$0.5)	(\$1.1)	(\$3.8)	(\$4.3)	(\$2.8)	(\$3.3)

*Adjusted for middle of the year timing

**Estimated in the June 30, 2020 Actuarial Valuation and Review for VSERS

Note: Numbers may not add due to rounding

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	PC-3	PC-4	Combo-A	Combo-B	Combo-C	Combo-D
2022	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8	\$84.8
2023	90.4	90.1	89.8	88.2	88.0	88.8	88.5
2024	94.8	94.4	94.1	92.2	91.9	92.9	92.6
2025	99.1	98.7	98.3	96.5	96.1	97.2	96.9
2026	103.4	103.0	102.6	100.7	100.4	101.4	101.1
2027	107.7	107.3	106.9	104.9	104.6	105.7	105.3
2028	112.0	111.6	111.2	109.1	108.8	109.9	109.6
2029	116.3	115.9	115.5	113.4	113.1	114.2	113.9
2030	120.8	120.3	119.9	117.7	117.4	118.6	118.2
2031	125.3	124.8	124.4	122.2	121.8	123.0	122.6
2032	129.9	129.4	129.0	126.7	126.3	127.5	127.1
2033	134.6	134.1	133.6	131.3	130.9	132.2	131.8
2034	139.4	138.9	138.4	136.0	135.6	137.0	136.5
2035	144.4	143.9	143.4	140.9	140.5	141.9	141.5
2036	149.6	149.1	148.6	146.0	145.6	147.0	146.6
2037	155.2	154.6	154.1	151.5	151.0	152.5	152.0
2038	161.2	160.7	160.2	157.4	157.0	158.4	158.0

VSTRS – Follow-Up Scenario Descriptions (Revenue)

Revenue Scenario	One-Time Revenue	Recurring Revenue	Description of Member Contribution Changes																																				
Rev-5	\$75M	\$15M																																					
Rev-6			<p>Replace current “flat” member contribution rates with “progressive” contribution rates beginning in FY23 as follows:</p> <ul style="list-style-type: none"> -5.50% on the first \$40,000 of income -6.25% on income between \$40,000 and \$60,000 -7.50% on income between \$60,000 and \$80,000 -8.25% on income between \$80,000 and \$100,000 -9.25% on income above \$100,000 																																				
Rev-7			<p>Replace current “flat” member contribution rates with phased in “progressive” contribution rates beginning in FY23 as follows:</p> <table border="1"> <thead> <tr> <th>Income</th> <th>FY23</th> <th>FY24</th> <th>FY25</th> <th>FY26</th> <th>FY27+</th> </tr> </thead> <tbody> <tr> <td>\$0-\$40K</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> </tr> <tr> <td>\$40K-\$60K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>6.75%</td> <td>6.75%</td> </tr> <tr> <td>\$60K-\$80K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>7.00%</td> <td>7.50%</td> </tr> <tr> <td>\$80K-\$100K</td> <td>6.25%</td> <td>6.75%</td> <td>7.25%</td> <td>7.75%</td> <td>8.25%</td> </tr> <tr> <td>\$100K+</td> <td>6.50%</td> <td>7.00%</td> <td>7.50%</td> <td>8.25%</td> <td>9.00%</td> </tr> </tbody> </table>	Income	FY23	FY24	FY25	FY26	FY27+	\$0-\$40K	6.00%	6.00%	6.00%	6.00%	6.00%	\$40K-\$60K	6.25%	6.50%	6.75%	6.75%	6.75%	\$60K-\$80K	6.25%	6.50%	6.75%	7.00%	7.50%	\$80K-\$100K	6.25%	6.75%	7.25%	7.75%	8.25%	\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%
Income	FY23	FY24	FY25	FY26	FY27+																																		
\$0-\$40K	6.00%	6.00%	6.00%	6.00%	6.00%																																		
\$40K-\$60K	6.25%	6.50%	6.75%	6.75%	6.75%																																		
\$60K-\$80K	6.25%	6.50%	6.75%	7.00%	7.50%																																		
\$80K-\$100K	6.25%	6.75%	7.25%	7.75%	8.25%																																		
\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%																																		
Rev-8			<p>Same member contribution rate structure as Rev-7 above.</p> <p>Once the funding ratio of the System is at or above 80%, the member contribution rate for all members will be 6.00%.</p>																																				

VSTRS – Follow-Up Scenario Descriptions (Revenue)

Revenue Scenario	One-Time Revenue	Recurring Revenue	Description of Member Contribution Changes																																				
Rev-C	\$75M	\$15M	<p>Replace current “flat” member contribution rates with “progressive” contribution rates beginning in FY23 as follows:</p> <ul style="list-style-type: none"> -5.50% on the first \$40,000 of income -6.25% on income between \$40,000 and \$60,000 -7.50% on income between \$60,000 and \$80,000 -8.25% on income between \$80,000 and \$100,000 -9.25% on income above \$100,000 																																				
Rev-D	\$75M	\$15M	<p>Replace current “flat” member contribution rates with phased in “progressive” contribution rates beginning in FY23 as follows:</p> <table border="1"> <thead> <tr> <th>Income</th> <th>FY23</th> <th>FY24</th> <th>FY25</th> <th>FY26</th> <th>FY27+</th> </tr> </thead> <tbody> <tr> <td>\$0-\$40K</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> <td>6.00%</td> </tr> <tr> <td>\$40K-\$60K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>6.75%</td> <td>6.75%</td> </tr> <tr> <td>\$60K-\$80K</td> <td>6.25%</td> <td>6.50%</td> <td>6.75%</td> <td>7.00%</td> <td>7.50%</td> </tr> <tr> <td>\$80K-\$100K</td> <td>6.25%</td> <td>6.75%</td> <td>7.25%</td> <td>7.75%</td> <td>8.25%</td> </tr> <tr> <td>\$100K+</td> <td>6.50%</td> <td>7.00%</td> <td>7.50%</td> <td>8.25%</td> <td>9.00%</td> </tr> </tbody> </table>	Income	FY23	FY24	FY25	FY26	FY27+	\$0-\$40K	6.00%	6.00%	6.00%	6.00%	6.00%	\$40K-\$60K	6.25%	6.50%	6.75%	6.75%	6.75%	\$60K-\$80K	6.25%	6.50%	6.75%	7.00%	7.50%	\$80K-\$100K	6.25%	6.75%	7.25%	7.75%	8.25%	\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%
Income	FY23	FY24	FY25	FY26	FY27+																																		
\$0-\$40K	6.00%	6.00%	6.00%	6.00%	6.00%																																		
\$40K-\$60K	6.25%	6.50%	6.75%	6.75%	6.75%																																		
\$60K-\$80K	6.25%	6.50%	6.75%	7.00%	7.50%																																		
\$80K-\$100K	6.25%	6.75%	7.25%	7.75%	8.25%																																		
\$100K+	6.50%	7.00%	7.50%	8.25%	9.00%																																		
Rev-E	\$75M	\$15M	<p>Same member contribution rate structure as Rev-D above.</p> <p>Once the funding ratio of the System is at or above 80%, the member contribution rate for all members will be 6.00%.</p>																																				

VSTRS – Follow-Up Scenario Descriptions (Plan Change)

Description of Plan Changes	PC-5	PC-6	PC-7	PC-8	PC-9
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum.	✓				
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect current COLA calculated at 50% of CPI .		✓			
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect COLA calculated at 100% of CPI .			✓		
Members will not receive a COLA until they have been retired for at least 24 months.				✓	
Members will not receive a COLA until they have been retired for at least 36 months.					✓

VSTRS – Follow-Up Scenario Descriptions (Plan Change)

Description of Plan Changes	Combo-G	Combo-H	Combo-I	Combo-J*	Combo-K*	Combo-L	Combo-M	Combo-N	Combo-O*	Combo-P*
CPI thresholds are updated to reflect a 0% minimum and a 4% maximum.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect current COLA calculated at 50% of CPI .	✓	✓	✓	✓	✓					
Increasing COLA Threshold – Members only receive a COLA on the first \$24,000 of their annual pension income, where the \$24,000 threshold is indexed to increase annually by CPI from FY24 onward. Reflect COLA calculated at 100% of CPI .						✓	✓	✓	✓	✓
Members will not receive a COLA until they have been retired for at least 24 months.		✓		✓			✓		✓	
Members will not receive a COLA until they have been retired for at least 36 months.			✓		✓			✓		✓

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

VSTRS – Additional Revenue Amounts

Additional Revenue Amounts (\$ in millions)				
June 30	Rev-5	Rev-6	Rev-7	Rev-8
2022	\$75.0	-	-	-
2023	6.3	\$4.6	\$4.4	\$4.4
2024	15.0	4.9	5.3	5.3
2025	15.3	5.2	6.4	6.4
2026	15.6	5.5	7.3	7.3
2027	15.9	5.8	8.7	8.7
2028	16.2	6.2	9.1	9.1
2029	16.6	6.6	9.4	9.4
2030	16.9	6.9	9.8	9.8
2031	17.2	7.4	10.2	10.2
2032	17.6	7.8	10.6	10.6
2033	17.9	8.2	11.0	11.0
2034	18.3	8.6	11.4	11.4
2035	18.7	9.1	11.8	1.9
2036	19.0	9.5	12.2	1.7
2037	19.4	10.0	12.7	1.5
2038	19.8	10.5	13.2	1.4

Additional Revenue Amounts (\$ in millions)			
June 30	Rev-C	Rev-D	Rev-E
2022	\$75.0	\$75.0	\$75.0
2023	10.8	10.6	10.6
2024	19.9	20.3	20.3
2025	20.5	21.7	21.7
2026	21.1	22.9	22.9
2027	21.7	24.6	24.6
2028	22.4	25.3	25.3
2029	23.1	26.0	26.0
2030	23.8	26.7	26.7
2031	24.6	27.4	27.4
2032	25.3	28.1	28.1
2033	26.1	28.9	28.9
2034	26.9	29.7	20.4
2035	27.7	30.4	20.5
2036	28.5	31.2	20.7
2037	29.4	32.1	20.9
2038	30.3	33.0	21.1

VSTRS – Revenue Scenarios Rev-5 through Rev-8

2020 Valuation (\$ in millions)	Baseline	Rev-5	Rev-6	Rev-7	Rev-8
Estimated Actuarially Determined Contribution for Fiscal 2023*:	\$202.1	\$202.1	\$197.5	\$197.7	\$197.7
Change from Baseline Valuation:		\$0.0	(\$4.6)	(\$4.4)	(\$4.4)
Projected Actuarially Determined Contribution for Fiscal 2028:	\$245.1	\$188.1	\$195.6	\$192.6	\$192.6
Change from Baseline Valuation:		(\$14.0)	(\$6.5)	(\$9.5)	(\$9.5)
Present Value of Additional Member Contributions from Fiscal 2023 through Fiscal 2038:	N/A	\$0.0	\$57.5	\$75.2	\$60.5
Present Value of Decrease in Employer Contributions from Fiscal 2023 through Fiscal 2038:	N/A	(\$179.1)	(\$56.5)	(\$72.8)	(\$59.1)

*Estimated in the June 30, 2020 Actuarial Valuation and Review for VSTRS

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	Rev-5	Rev-6	Rev-7	Rev-8
2022	\$157.3	\$157.3	\$157.3	\$157.3	\$157.3
2023	166.2	166.2	166.2	166.2	166.2
2024	172.9	166.3	172.9	172.9	172.9
2025	179.4	171.5	179.0	179.0	179.0
2026	186.0	176.3	185.5	185.5	185.5
2027	192.7	180.9	192.2	192.0	192.0
2028	199.4	185.5	198.9	198.7	198.7
2029	206.4	189.9	205.8	205.5	205.5
2030	213.4	194.2	212.8	212.5	212.5
2031	220.6	198.2	220.0	219.6	219.6
2032	228.0	202.0	227.3	227.0	227.0
2033	235.6	205.4	234.8	234.5	234.5
2034	243.5	208.2	242.6	242.3	242.3
2035	251.5	210.2	250.6	250.3	250.3
2036	259.9	210.7	258.9	258.7	258.7
2037	268.7	208.7	267.5	267.4	271.1
2038	278.1	200.9	276.8	276.7	282.8

VSTRS – Revenue Scenarios Rev-C through Rev-E

2020 Valuation (\$ in millions)	Baseline	Rev-C	Rev-D	Rev-E
Estimated Actuarially Determined Contribution for Fiscal 2023*:	\$202.1	\$197.5	\$197.7	\$197.7
Change from Baseline Valuation:		(\$4.6)	(\$4.4)	(\$4.4)
Projected Actuarially Determined Contribution for Fiscal 2028:	\$245.1	\$181.6	\$178.6	\$178.6
Change from Baseline Valuation:		(\$20.5)	(\$23.5)	(\$23.5)
Present Value of Additional Member Contributions from Fiscal 2023 through Fiscal 2038:	N/A	\$57.5	\$75.2	\$56.8
Present Value of Decrease in Employer Contributions from Fiscal 2023 through Fiscal 2038:	N/A	(\$235.6)	(\$252.0)	(\$234.0)

*Estimated in the June 30, 2020 Actuarial Valuation and Review for VSTRS

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	Rev-C	Rev-D	Rev-E
2022	\$157.3	\$157.3	\$157.3	\$157.3
2023	166.2	166.2	166.2	166.2
2024	172.9	166.3	166.4	166.4
2025	179.4	171.1	171.1	171.1
2026	186.0	175.8	175.8	175.8
2027	192.7	180.4	180.3	180.3
2028	199.4	185.0	184.8	184.8
2029	206.4	189.3	189.0	189.0
2030	213.4	193.5	193.2	193.2
2031	220.6	197.6	197.2	197.2
2032	228.0	201.3	201.0	201.0
2033	235.6	204.6	204.3	204.3
2034	243.5	207.3	207.1	207.1
2035	251.5	209.2	209.0	209.0
2036	259.9	209.7	209.5	212.2
2037	268.7	207.5	207.4	211.3
2038	278.1	199.6	199.5	204.3

VSTRS – Plan Change Scenarios PC-5 through PC-9

2020 Valuation (\$ in millions)	Baseline	PC-5	PC-6	PC-7	PC-8	PC-9
Actuarial Accrued Liability:	\$3,969.0	\$3,948.9	\$3,900.9	\$3,979.4	\$3,954.2	\$3,940.3
Change from Baseline Valuation:		(\$20.1)	(\$68.1)	\$10.4	(\$14.8)	(\$28.7)
Actuarial Value of Assets:	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>
Unfunded Actuarial Accrued Liability:	\$1,933.3	\$1,913.2	\$1,865.2	\$1,943.7	\$1,918.5	\$1,904.6
Change from Baseline Valuation:		(\$20.1)	(\$68.1)	\$10.4	(\$14.8)	(\$28.7)
Funded Percentage:	51.3%	51.6%	52.2%	51.2%	51.5%	51.7%
Change from Baseline Valuation:		0.3%	0.9%	-0.1%	0.2%	0.4%
Normal Cost*:	\$74.6	\$73.6	\$71.8	\$76.0	\$74.0	\$73.3
Change from Baseline Valuation:		(\$1.0)	(\$2.8)	\$1.4	(\$0.6)	(\$1.3)
Estimated Actuarially Determined Contribution for Fiscal 2023**:	\$202.1	\$199.3	\$193.0	\$204.6	\$200.1	\$198.2
Change from Baseline Valuation:		(\$2.8)	(\$9.1)	\$2.5	(\$2.0)	(\$3.9)

*Adjusted for middle of the year timing

**Estimated in the June 30, 2020 Actuarial Valuation and Review for VSTRS

Note: Numbers may not add due to rounding

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	PC-5	PC-6	PC-7	PC-8	PC-9
2022	\$157.3	\$157.3	\$157.3	\$157.3	\$157.3	\$157.3
2023	166.2	164.5	160.4	167.1	164.9	163.7
2024	172.9	170.9	166.2	174.0	171.4	170.0
2025	179.4	177.3	172.4	180.5	177.9	176.4
2026	186.0	183.8	178.8	187.1	184.4	182.9
2027	192.7	190.5	185.2	193.8	191.1	189.5
2028	199.4	197.2	191.8	200.6	197.8	196.2
2029	206.4	204.0	198.4	207.5	204.6	203.0
2030	213.4	211.0	205.2	214.6	211.7	210.0
2031	220.6	218.2	212.2	221.8	218.8	217.1
2032	228.0	225.5	219.3	229.2	226.2	224.4
2033	235.6	233.0	226.6	236.8	233.7	231.9
2034	243.5	240.7	234.2	244.6	241.5	239.6
2035	251.5	248.7	241.9	252.7	249.5	247.6
2036	259.9	257.0	250.0	261.0	257.8	255.8
2037	268.7	265.7	258.4	269.8	266.5	264.5
2038	278.1	275.0	267.4	279.0	275.9	273.8

VSTRS – Plan Change Scenarios Combo-G through Combo-K

2020 Valuation (\$ in millions)	Baseline	Combo-G	Combo-H	Combo-I	Combo-J*	Combo-K*
Actuarial Accrued Liability:	\$3,969.0	\$3,889.9	\$3,884.0	\$3,878.1	\$3,915.1	\$3,911.9
Change from Baseline Valuation:		(\$79.1)	(\$85.0)	(\$90.9)	(\$53.9)	(\$57.1)
Actuarial Value of Assets:	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>
Unfunded Actuarial Accrued Liability:	\$1,933.3	\$1,854.2	\$1,848.3	\$1,842.4	\$1,879.4	\$1,876.2
Change from Baseline Valuation:		(\$79.1)	(\$85.0)	(\$90.9)	(\$53.9)	(\$57.1)
Funded Percentage:	51.3%	52.3%	52.4%	52.5%	52.0%	52.0%
Change from Baseline Valuation:		1.0%	1.1%	1.2%	0.7%	0.7%
Normal Cost**:	\$74.6	\$71.2	\$70.9	\$70.6	\$71.4	\$71.2
Change from Baseline Valuation:		(\$3.4)	(\$3.7)	(\$4.0)	(\$3.2)	(\$3.4)
Estimated Actuarially Determined Contribution for Fiscal 2023***:	\$202.1	\$191.4	\$190.6	\$189.7	\$193.9	\$193.4
Change from Baseline Valuation:		(\$10.7)	(\$11.5)	(\$12.4)	(\$8.2)	(\$8.7)

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

**Adjusted for middle of the year timing

***Estimated in the June 30, 2020 Actuarial Valuation and Review for VSTRS

Note: Numbers may not add due to rounding

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	Combo-G	Combo-H	Combo-I	Combo-J*	Combo-K*
2022	\$157.3	\$157.3	\$157.3	\$157.3	\$157.3	\$157.3
2023	166.2	159.5	159.0	158.5	161.6	161.3
2024	172.9	165.1	164.5	163.9	167.5	167.1
2025	179.4	171.3	170.7	170.1	173.8	173.4
2026	186.0	177.6	177.0	176.3	180.2	179.8
2027	192.7	184.0	183.4	182.7	186.7	186.3
2028	199.4	190.5	189.9	189.2	193.3	192.9
2029	206.4	197.2	196.5	195.8	200.0	199.6
2030	213.4	203.9	203.2	202.5	206.8	206.4
2031	220.6	210.8	210.1	209.4	213.8	213.4
2032	228.0	217.9	217.2	216.5	221.0	220.6
2033	235.6	225.2	224.4	223.7	228.4	228.0
2034	243.5	232.7	231.9	231.1	236.0	235.5
2035	251.5	240.4	239.6	238.8	243.8	243.4
2036	259.9	248.5	247.6	246.8	251.9	251.5
2037	268.7	256.8	256.0	255.1	260.5	260.0
2038	278.1	265.8	264.9	264.1	269.6	269.1

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

VSTRS – Plan Change Scenarios Combo-L through Combo-P

2020 Valuation (\$ in millions)	Baseline	Combo-L	Combo-M	Combo-N	Combo-O*	Combo-P*
Actuarial Accrued Liability:	\$3,969.0	\$3,968.1	\$3,956.8	\$3,945.6	\$3,959.1	\$3,953.1
Change from Baseline Valuation:		(\$0.9)	(\$12.2)	(\$23.4)	(\$9.9)	(\$15.9)
Actuarial Value of Assets:	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>	<u>\$2,035.7</u>
Unfunded Actuarial Accrued Liability:	\$1,933.3	\$1,932.3	\$1,921.0	\$1,909.9	\$1,923.4	\$1,917.4
Change from Baseline Valuation:		(\$1.0)	(\$12.3)	(\$23.4)	(\$9.9)	(\$15.9)
Funded Percentage:	51.3%	51.3%	51.4%	51.6%	51.4%	51.5%
Change from Baseline Valuation:		0.0%	0.1%	0.3%	0.1%	0.2%
Normal Cost**:	\$74.6	\$75.4	\$74.9	\$74.3	\$74.5	\$74.1
Change from Baseline Valuation:		\$0.8	\$0.3	(\$0.3)	(\$0.1)	(\$0.5)
Estimated Actuarially Determined Contribution for Fiscal 2023***:	\$202.1	\$202.9	\$201.3	\$199.7	\$201.1	\$200.1
Change from Baseline Valuation:		\$0.8	(\$0.8)	(\$2.4)	(\$1.0)	(\$2.0)

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes

**Adjusted for middle of the year timing

***Estimated in the June 30, 2020 Actuarial Valuation and Review for VSTRS

Note: Numbers may not add due to rounding

Projected Amortization Payment for the Plan Year Ending June 30 (\$ in millions)

Year	Baseline	Combo-L	Combo-M	Combo-N	Combo-O*	Combo-P*
2022	\$157.3	\$157.3	\$157.3	\$157.3	\$157.3	\$157.3
2023	166.2	166.1	165.1	164.2	165.3	164.8
2024	172.9	172.8	171.7	170.6	171.9	171.3
2025	179.4	179.4	178.2	177.0	178.4	177.8
2026	186.0	185.9	184.7	183.5	184.9	184.3
2027	192.7	192.6	191.3	190.1	191.6	190.9
2028	199.4	199.3	198.1	196.8	198.3	197.6
2029	206.4	206.2	204.9	203.6	205.2	204.5
2030	213.4	213.2	211.9	210.6	212.2	211.4
2031	220.6	220.4	219.1	217.7	219.3	218.6
2032	228.0	227.8	226.4	225.0	226.7	225.9
2033	235.6	235.3	233.9	232.5	234.2	233.4
2034	243.5	243.1	241.6	240.1	241.9	241.1
2035	251.5	251.1	249.6	248.1	249.9	249.1
2036	259.9	259.4	257.9	256.3	258.2	257.4
2037	268.7	268.1	266.5	264.9	266.9	266.0
2038	278.1	277.4	275.7	274.1	276.1	275.3

*Exempts all actives within 5 years of Normal Retirement Eligibility from all COLA changes