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October 31, 2018

Via E-Mail

Ms. Beth Pearce
Vermont Retirement Systems
Office of the State Treasurer
109 State Street
Montpelier, VT 05609

Re: **Impact of Deferral of Additional Payment on VSTRS Unfunded Liability Amortization Schedule**

Dear Beth:

As requested, we have calculated the impact on the Unfunded Liability Amortization Schedule of adjusting the timing of the recognition of the additional contribution of $26.2 million paid to the Vermont State Teachers' Retirement System (VSTRS). We have projected the impact of deferring recognition of this additional contribution to the last year of the amortization schedule, resulting in higher payments in the first 19 years of the schedule, and a lower payment in year 20.

Page 3 below displays the amortization schedule as shown in the June 30, 2018, Actuarial Valuation and Review. As discussed in the report, this is a closed period amortization of the unfunded actuarial accrued liability over the remaining period of 20 years. In this schedule, the additional payment of $26.2 million has been fully reflected in the actuarial value of assets as of June 30, 2018.

Page 4 below displays an alternative amortization schedule (Alternative Schedule 1) adjusted to defer the recognition of the $26.2 million payment to the final year of the 20-year period. Annual amortization payments are calculated without regard to the additional payment. In the final year of the amortization schedule, the accumulated value of the additional payment balance is fully recognized, resulting in a lower amortization payment in that year. In this schedule, the additional payment balance grows at the assumed investment return assumption of 7.50%. By June 30, 2037, the accumulated balance of the $26.2 million additional payment amount is $103.6 million, reflecting $77.4 million of accumulated interest.

Pages 5 and 6 below presents two additional alternative amortization schedules – Alternative Schedule 2 and Alternative Schedule 3. Alternative Schedule 2 includes additional annual supplemental payments through June 30, 2037, such that the difference between the amortization payments shown in the June 30, 2018, Actuarial Valuation and Review and the amounts contained in Alternative Schedule 2 are $77.4 million. Similarly, Alternative Schedule 3, includes additional annual supplemental payments for the following ten years (through June 30, 2029) such that the difference is $77.4 million.

Please refer to our June 30, 2018, Actuarial Valuation and Review for the assumptions and plan of benefits underlying these calculations.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering VSTRS.

The measurements shown in this actuarial valuation 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.

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 actuarial valuation 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

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Unfunded Liability Amortization Schedule – Based on June 30, 2018 Actuarial Valuation Report

(1) Fiscal Year Ended June 30	(2) Unfunded Actuarial Accrued Liability	(3) Amortization Payment (Year Following)
2018	$1,513,433,335	$97,214,107
2019	1,526,147,104	119,080,624
2020	1,517,142,718	122,653,043
2021	1,503,759,040	126,332,634
2022	1,485,556,505	130,122,613
2023	1,462,059,246	134,026,292
2024	1,432,752,272	138,047,080
2025	1,397,078,433	142,188,493
2026	1,354,435,149	146,454,148
2027	1,304,170,893	150,847,772
2028	1,245,581,411	155,373,205
2029	1,177,905,649	160,034,401
2030	1,100,321,374	164,835,433
2031	1,011,940,462	169,780,496
2032	911,803,831	174,873,911
2033	798,875,988	180,120,129
2034	672,039,163	185,523,732
2035	530,087,001	191,089,444
2036	371,717,773	196,822,128
2037	195,527,080	202,726,792
TOTAL		**$3,088,146,477**

Notes: Payment of $26.2 million is reflected and recognized in the unfunded actuarial accrued liability as of July 1, 2018.
Amortization payments are assumed to be made in the middle of the fiscal year.
Beginning July 1, 2019 and each year thereafter, the annual payment to amortize the unfunded actuarial liability are calculated based upon installments increasing at a rate of 3% per year instead of 5%.

Alternative Amortization Schedule 1 –
Additional $26.2 Million Contribution Applied to Fiscal Year 2038

(1) Fiscal Year Ended June 30	(2) Unfunded Actuarial Accrued Liability	(3) Amortization Payment (Year Following)
2018	$1,513,433,335	$98,899,062
2019	1,524,400,105	121,144,579
2020	1,513,124,740	124,778,917
2021	1,497,235,561	128,522,284
2022	1,476,273,488	132,377,953
2023	1,449,741,616	136,349,291
2024	1,417,102,284	140,439,770
2025	1,377,773,902	144,652,963
2026	1,331,127,561	148,992,552
2027	1,276,483,362	153,462,329
2028	1,213,106,485	158,066,199
2029	1,140,202,948	162,808,185
2030	1,056,915,050	167,692,430
2031	962,316,467	172,723,203
2032	855,406,973	177,904,899
2033	735,106,771	183,242,046
2034	600,250,382	188,739,307
2035	449,580,082	194,401,487
2036	281,738,837	200,233,531
2037	95,262,706	98,770,476
Total		**$3,034,201,463**
Difference from Original Schedule		**$53,945,014**

Notes: Payment of $26.2 million, with accumulated interest, is not reflected in the amortization schedule until the fiscal year 2038 payment.
Amortization payments are assumed to be made in the middle of the fiscal year.
Beginning July 1, 2019 and each year thereafter, the annual payment to amortize the unfunded actuarial liability are calculated based upon installments increasing at a rate of 3% per year instead of 5%.

Alternative Amortization Schedule 2 – Additional $26.2 Million Contribution Applied to Fiscal Year 2038, Supplemental Payments Through Fiscal Year 2037

(1) Fiscal Year Ended June 30	(2) Unfunded Actuarial Accrued Liability	(3) Amortization Payment (Year Following)
2018	$1,513,433,335	$98,899,062
2019	1,524,400,105	122,134,028
2020	1,512,098,858	125,798,049
2021	1,495,076,079	129,571,991
2022	1,472,863,685	133,459,150
2023	1,444,955,069	137,462,925
2024	1,410,802,105	141,586,813
2025	1,369,811,931	145,834,417
2026	1,321,343,484	150,209,450
2027	1,264,703,773	154,715,733
2028	1,199,143,870	159,357,205
2029	1,123,854,593	164,137,921
2030	1,037,961,869	169,062,059
2031	940,521,736	174,133,921
2032	830,514,974	179,357,938
2033	706,841,329	184,738,676
2034	568,313,292	190,280,837
2035	413,649,418	195,989,262
2036	241,467,133	201,868,940
2037	50,274,996	52,126,226
Total		**$3,010,724,603**
Difference from Original Schedule		**$77,421,874**

Notes: Payment of $26.2 million, with accumulated interest, is not reflected in the amortization schedule until the fiscal year 2038 payment.
Additional payments are made from fiscal year 2020 through fiscal year 2038.
Amortization payments are assumed to be made in the middle of the fiscal year.
Beginning July 1, 2019 and each year thereafter, the annual payment to amortize the unfunded actuarial liability are calculated based upon installments increasing at a rate of 3% per year instead of 5%.

Alternative Amortization Schedule 3 – Additional $26.2 Million Contribution Applied to Fiscal Year 2038, Supplemental Payments Through Fiscal Year 2029

(1) Fiscal Year Ended June 30	(2) Unfunded Actuarial Accrued Liability	(3) Amortization Payment (Year Following)
2018	$1,513,433,335	$98,899,062
2019	1,524,400,105	122,374,441
2020	1,511,849,592	126,045,674
2021	1,494,551,375	129,827,044
2022	1,472,035,184	133,721,855
2023	1,443,792,053	137,733,511
2024	1,409,271,313	141,865,516
2025	1,367,877,364	146,121,482
2026	1,318,966,189	150,505,126
2027	1,261,841,617	155,020,280
2028	1,195,751,291	159,670,888
2029	1,119,882,338	162,808,185
2030	1,035,070,394	167,692,430
2031	938,833,462	172,723,203
2032	830,162,743	177,904,899
2033	707,969,223	183,242,046
2034	571,077,518	188,739,307
2035	418,219,253	194,401,487
2036	248,025,946	200,233,531
2037	59,021,348	61,194,636
Total		**$3,010,724,603**
Difference from Original Schedule		**$77,421,874**

Notes: Payment of $26.2 million, with accumulated interest, is not reflected in the amortization schedule until the fiscal year 2038 payment.
Additional payments are made from fiscal year 2020 through fiscal year 2029.
Amortization payments are assumed to be made in the middle of the fiscal year.
Beginning July 1, 2019 and each year thereafter, the annual payment to amortize the unfunded actuarial liability are calculated based upon installments increasing at a rate of 3% per year instead of 5%.