

January 26, 2018

CONFIDENTIAL
Via E-mail

Mr. Timothy Blair
Executive Secretary
State Employees' Retirement System of Illinois
2101 S. Veterans Parkway
Springfield, Illinois 62794-9255

Mr. Jeff Houch
Senior Public Service Administrator
State Retirement Systems of Illinois
2101 S. Veterans Parkway
Springfield, Illinois 62794-9255

Subject: Cost Analysis of Representative Martwick's Buyout Bill, Requested January 11, 2018

Dear Tim and Jeff:

At your request, we are providing our analysis of Representative Martwick's Buyout Bill on behalf of the State Employees' Retirement System of Illinois ("SERS" or "System"). This analysis was prepared at the request of, and is intended for use by SERS and those designated by the System only in its entirety and only with the permission of the System. The impact is measured as of June 30, 2017, with an effective date of July 1, 2018.

Summary of Changes

Pursuant to Representative Martwick's Buyout Bill, the following changes are made:

Benefit Changes

- Eligible Tier 1 members may irrevocably elect to have their automatic annual increases ("AAI") in retirement annuity calculated under the Tier 2 structure in exchange for an accelerated pension benefit payment paid as a lump sum at retirement ("buyout option").
 - Accelerated pension benefit payment is equal to 70 percent of the difference of (1) the present value of automatic annual increases to a Tier 1 member's retirement annuity using the Tier 1 AAI structure, and (2) the present value of automatic annual increases to a Tier 1 member's retirement annuity using the Tier 2 AAI structure.
 - In determining these present values, the AAI structure is applied to the member's retirement annuity and the survivor's retirement annuity.
 - Present values are determined using the System's actuarial assumptions in effect as of June 30, 2017.
 - The accelerated pension benefit is paid as a lump sum and must be rolled into another qualified retirement plan/account.
 - An eligible member:
 - Is a Tier 1 member;
 - Has submitted an application for retirement;
 - Meets the age and service requirements for receiving a retirement annuity;

- Has not previously received a retirement annuity from the System; and
 - Does not have a QILDRO in effect against them.
- Automatic annual increases under each structure:
 - Tier 1
 - Annual increases of 3.0 percent of the current pension (i.e., increases are compounded).
 - Annual increases are granted to members effective each January 1 occurring on or after the first anniversary of the pension.
 - Tier 2
 - Annual increases equal to the lesser of 3.0 percent or one-half of the annual increase in the consumer price index-u during the preceding 12-month calendar year and are not compounded.
 - Annual increases begin at the later of the first anniversary of retirement or age 67.

The remainder of this letter provides further descriptions of the changes, the impact of changes, and additional disclosure items.

We are providing the following three impact scenarios:

- **Baseline** — Benefit provisions in effect as of the June 30, 2017, the most recent actuarial valuation date.
- **Scenario 1** — 25 percent of eligible Tier 1 members elect the buyout option.
- **Scenario 2** — 50 percent of eligible Tier 1 members elect the buyout option.
- **Scenario 3** — 75 percent of eligible Tier 1 members elect the buyout option.

It should be noted that in the buyout option election scenarios, individual members were not selected to elect the buyout option, rather 25 percent/50 percent/75 percent of each eligible member was valued under the buyout option and 75 percent/50 percent/25 percent was valued under the standard Tier 1 option.

Summary of Results

The following table summarizes the State's contributions through 2045 under each scenario.

	Total Cont. Through 2045 (\$ in millions)	Present Value of Total Cont. (\$ in millions)
Baseline	\$93,834	\$36,835
Scenario 1	\$83,812	\$33,091
Scenario 2	\$86,071	\$33,935
Scenario 3	\$88,328	\$34,778



Cost (Savings) Breakout

The following table summarizes the cost (savings) attributable to each scenario when compared against the baseline, measured by State contributions.

	Increase in Total Cont. Through 2045 (\$ in millions)	Increase in Present Value of Total Cont. (\$ in millions)
Scenario 1	(\$10,022)	(\$3,744)
Scenario 2	(\$7,763)	(\$2,900)
Scenario 3	(\$5,506)	(\$2,057)

When compared against the baseline, the increase in total state contributions on a nominal and present value basis, diminishes as the buyout election percentages increase. This is mainly attributable to the increase in benefit payments caused by the accelerated pension benefit payment. Benefit payments are projected to be higher in the first eight years for Scenario 1, 10 years for Scenario 2 and 12 years for Scenario 3 when compared against the baseline.

At the end of this letter, we have presented the results of each scenario. The exhibits compare the State's contributions as a dollar amount, the State's contributions as a percent of pay, the unfunded accrued liability and the funded ratio between the baseline and each impact scenario.

Disclosures

- Plan design changes apply to all eligible Tier 1 members. Changes to benefits apply to all years of service. This is not an endorsement for or against changing benefits for current and future members. This is also not a comment on the contractual or constitutional implications of changing benefits for current and future members. It is for illustrative purposes only.
- This study does not purport to state whether the new plan design meets the requirements for a Social Security replacement plan.
- The results are compared against the baseline, where the baseline represents the June 30, 2017, actuarial valuation results.
- These scenarios illustrate the financial implications of certain scenarios. None necessarily represents a best estimate of potential choices or represents the option that may be in a member's best financial interest. We cannot assess the likelihood that a Tier 1 member will elect a buyout option.
- All present values are calculated using a discount rate of 7.00 percent.
- Unless stated otherwise above, these calculations are performed as of June 30, 2017, and are based on the same data, assumptions, and methods used in the June 30, 2017, actuarial valuation report and are subject to all disclosures found within the June 30, 2017, actuarial valuation report.



This analysis is based upon the same information furnished by the SERS staff concerning System benefits, financial transactions, and active members, terminated members, retirees and beneficiaries that was used in the June 30, 2017, actuarial valuation report dated October 30, 2017. Please refer to that document for addition information pertaining to data, assumptions, methods, plan provisions, etc.

The results summarized in this report involve actuarial calculations that require assumptions about future events. The major actuarial assumptions used in this analysis were provided by and are the responsibility of SERS. We are unable to judge the reasonableness of some of these assumptions without performing a substantial amount of additional work beyond the scope of the assignment.

To the best of our knowledge, the information contained with this letter is accurate and fairly represents the actuarial position of the SERS as of June 30, 2017. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Future actuarial measurements may differ significantly from the current measurements presented in this letter 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.

This letter should not be relied on for any purpose other than the purpose stated.

The signing actuaries are independent of the plan sponsor.

Alex Rivera and Lance J. Weiss are Members of the American Academy of Actuaries (MAAA) as indicated, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

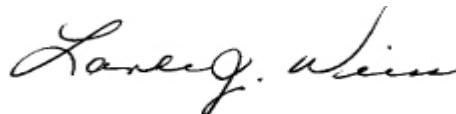
Please let us know if you have any questions, would like to discuss the results of this analysis or would like to see any additional analysis.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



Alex Rivera, FSA, EA, MAAA, FCA
Senior Consultant



Lance J. Weiss, EA, MAAA, FCA
Senior Consultant

cc: Mr. Ryan Gundersen, Gabriel, Roeder, Smith and Company



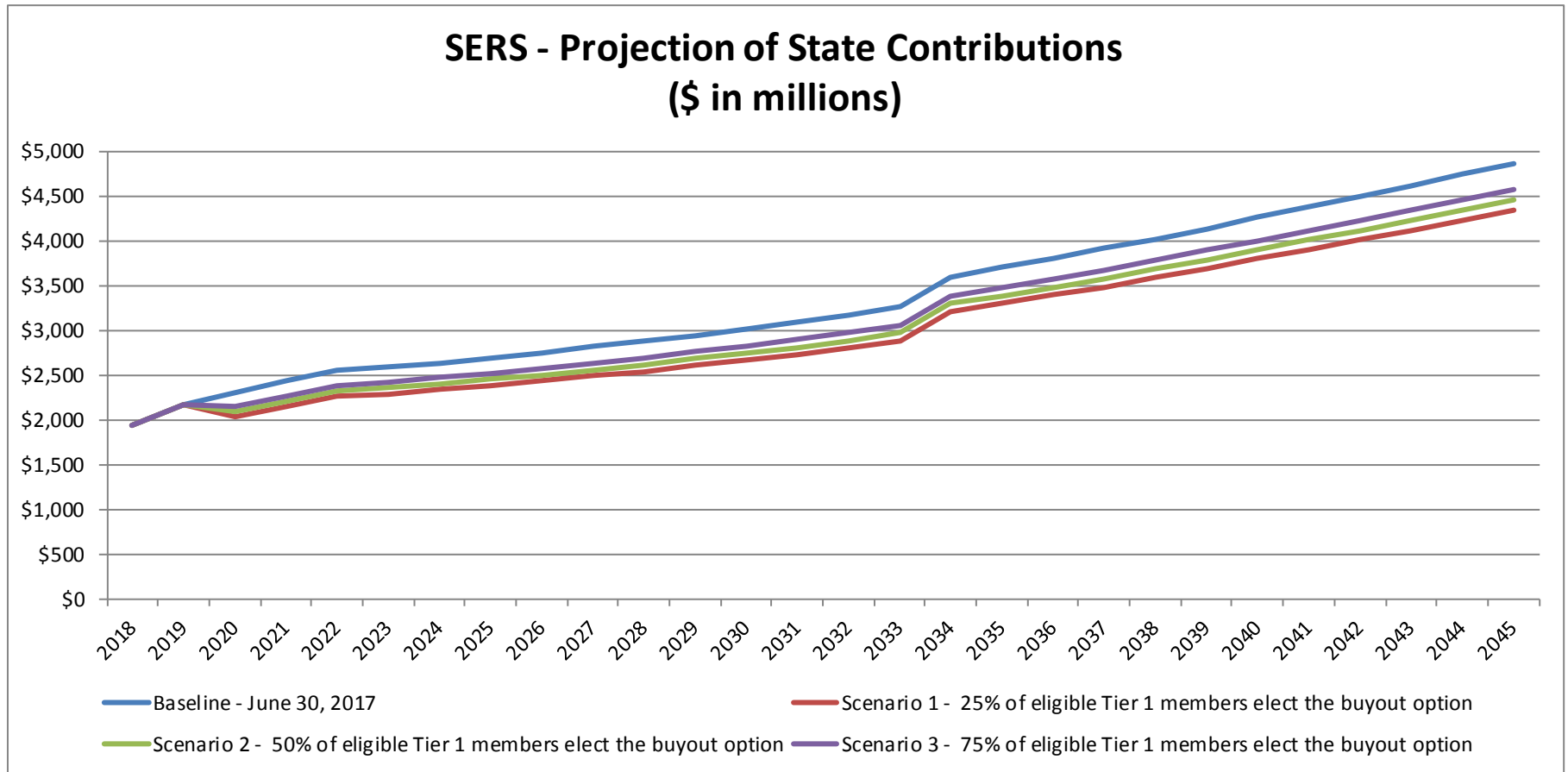
State Employees' Retirement System of Illinois
Projection of State Contribution Dollars
Based on Actuarial Valuation as of June 30, 2017

Exhibit I

Illinois SERS- Buyout Cost Impact				
Scenario	Baseline - 6/30/2017	Scenario 1 - 25% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 2 - 50% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 3 - 75% of Eligible Tier 1 Members Elect the Buyout Option
Funding Policy	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions
Actuarial Cost Method	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Components Included In Scenario	N/A	25% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	50% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	75% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits
Fiscal Year	Contribution Dollar Amount (\$ in millions)			
2018	\$1,942	\$1,942	\$1,942	\$1,942
2019	2,166	2,166	2,166	2,166
2020	2,311	2,032	2,094	2,157
2021	2,433	2,147	2,211	2,276
2022	2,552	2,261	2,326	2,392
2023	2,593	2,294	2,362	2,429
2024	2,641	2,337	2,405	2,474
2025	2,692	2,381	2,451	2,521
2026	2,752	2,434	2,506	2,577
2027	2,816	2,490	2,564	2,637
2028	2,879	2,545	2,621	2,696
2029	2,948	2,607	2,684	2,761
2030	3,018	2,667	2,746	2,825
2031	3,093	2,733	2,814	2,895
2032	3,176	2,807	2,890	2,973
2033	3,269	2,889	2,975	3,060
2034	3,602	3,212	3,300	3,388
2035	3,702	3,302	3,392	3,482
2036	3,805	3,393	3,486	3,579
2037	3,912	3,488	3,584	3,679
2038	4,024	3,588	3,686	3,784
2039	4,139	3,691	3,792	3,893
2040	4,258	3,797	3,901	4,005
2041	4,378	3,904	4,011	4,118
2042	4,499	4,012	4,122	4,232
2043	4,621	4,121	4,234	4,347
2044	4,745	4,231	4,347	4,462
2045	4,868	4,341	4,459	4,578
Total Cont. Through 2045	\$93,834	\$83,812	\$86,071	\$88,328
Present Value of Total Cont.	\$36,835	\$33,091	\$33,935	\$34,778

State Employees' Retirement System of Illinois
 Projection of State Contribution Dollars
 Based on the Actuarial Valuation as of June 30, 2017

Chart I



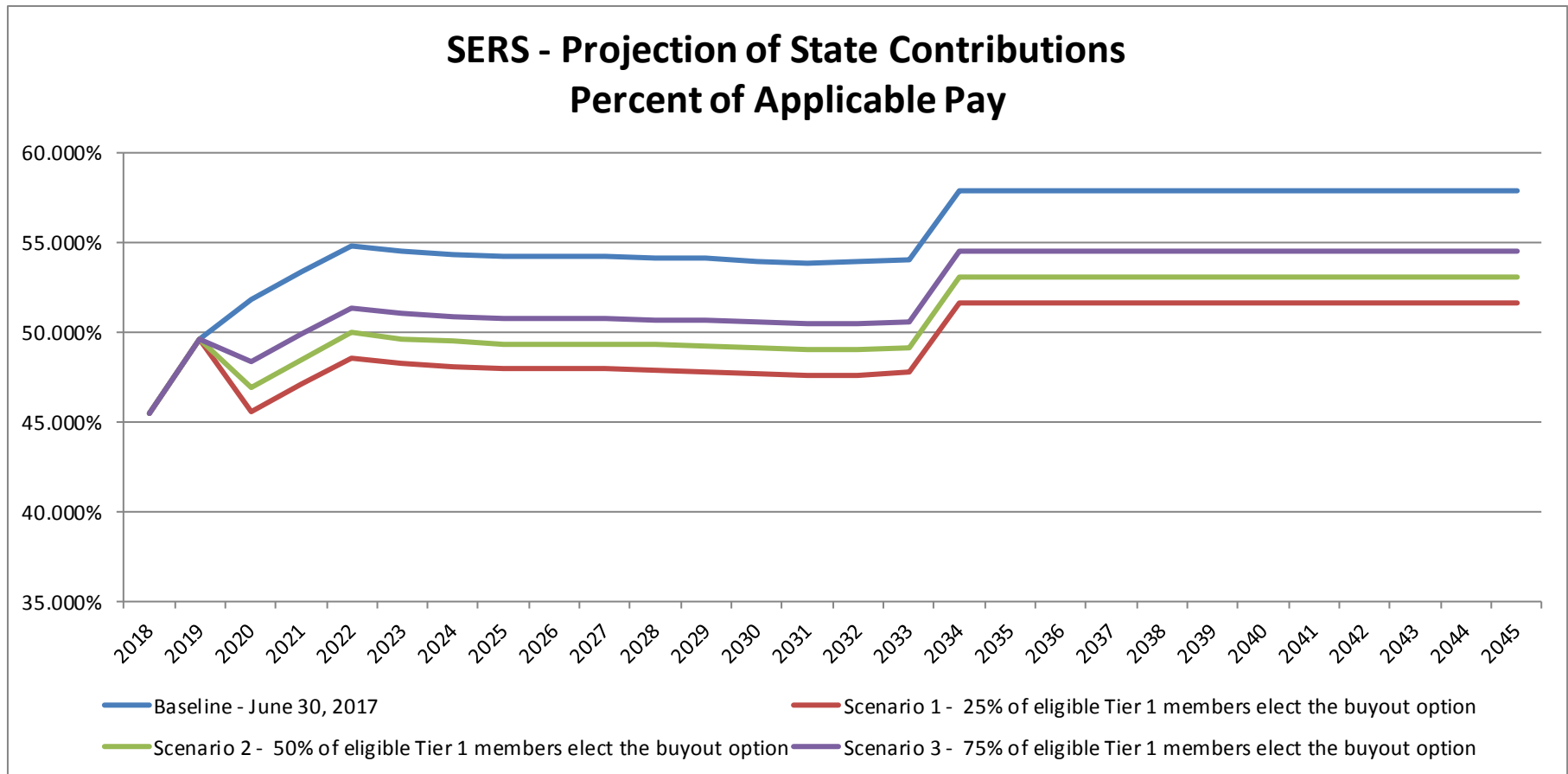
State Employees' Retirement System of Illinois
Projection of State Contributions as a Percent of Applicable Payroll
Based on the Actuarial Valuation as of June 30, 2017

Exhibit II

Illinois SERS- Buyout Cost Impact				
Scenario	Baseline - 6/30/2017	Scenario 1 - 25% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 2 - 50% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 3 - 75% of Eligible Tier 1 Members Elect the Buyout Option
Funding Policy	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions
Actuarial Cost Method	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Components Included In Scenario	N/A	25% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	50% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	75% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits
Fiscal Year	Contribution as a Percent of Applicable Payroll			
2018	45.424%	45.424%	45.424%	45.424%
2019	49.593%	49.593%	49.593%	49.593%
2020	51.798%	45.531%	46.942%	48.353%
2021	53.354%	47.087%	48.498%	49.910%
2022	54.802%	48.535%	49.946%	51.358%
2023	54.498%	48.231%	49.641%	51.053%
2024	54.344%	48.077%	49.487%	50.899%
2025	54.214%	47.948%	49.358%	50.770%
2026	54.203%	47.936%	49.347%	50.759%
2027	54.205%	47.938%	49.349%	50.760%
2028	54.130%	47.863%	49.274%	50.686%
2029	54.079%	47.813%	49.223%	50.635%
2030	53.963%	47.697%	49.107%	50.519%
2031	53.875%	47.608%	49.019%	50.431%
2032	53.891%	47.624%	49.035%	50.447%
2033	54.000%	47.733%	49.144%	50.556%
2034	57.914%	51.645%	53.057%	54.468%
2035	57.914%	51.645%	53.057%	54.468%
2036	57.914%	51.645%	53.057%	54.468%
2037	57.914%	51.645%	53.057%	54.468%
2038	57.914%	51.645%	53.057%	54.468%
2039	57.914%	51.645%	53.057%	54.468%
2040	57.914%	51.645%	53.057%	54.468%
2041	57.914%	51.645%	53.057%	54.468%
2042	57.914%	51.645%	53.057%	54.468%
2043	57.914%	51.645%	53.057%	54.468%
2044	57.914%	51.645%	53.057%	54.468%
2045	57.914%	51.645%	53.057%	54.468%

State Employees' Retirement System of Illinois
Projection of State Contributions as a Percent of Applicable Payroll
Based on the Actuarial Valuation as of June 30, 2017

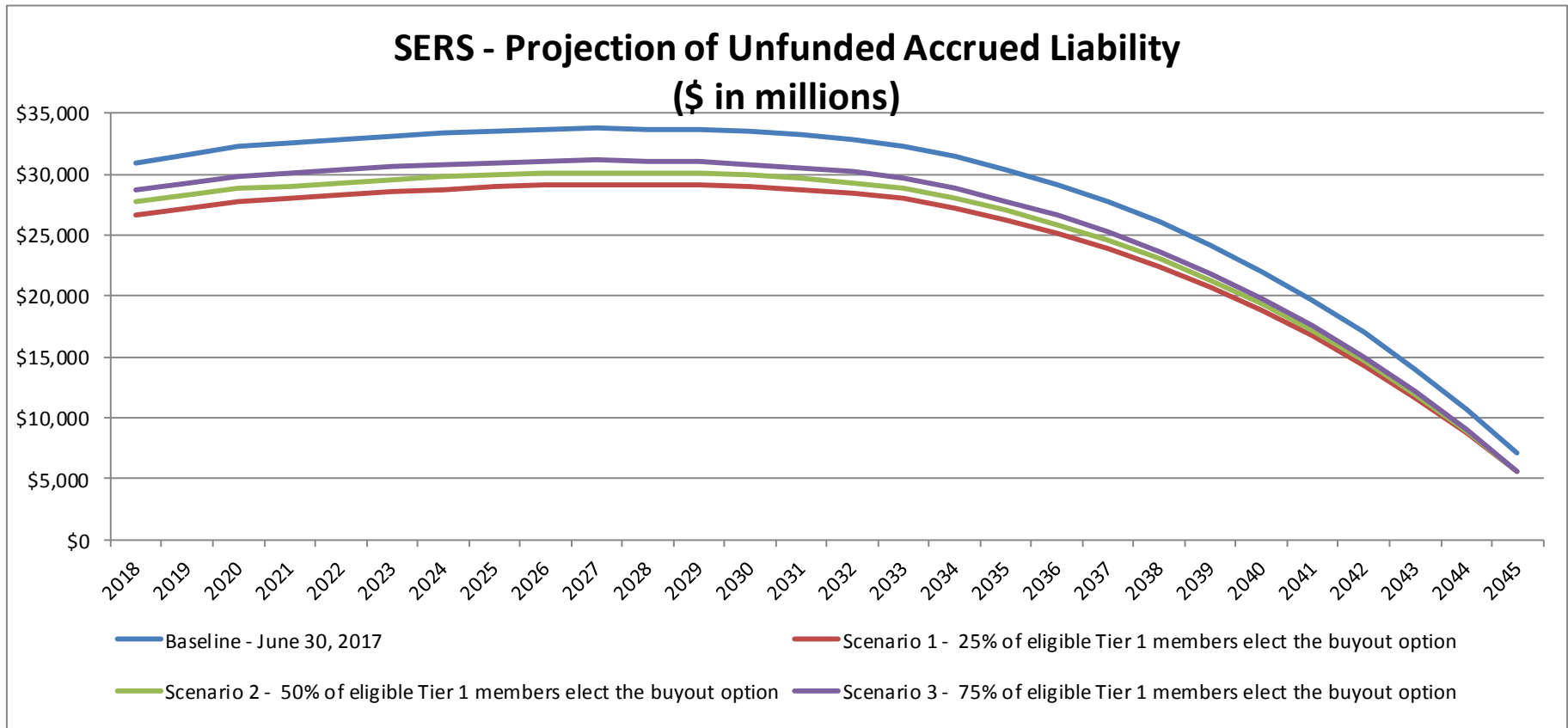
Chart II



**State Employees' Retirement System of Illinois
 Projection of Unfunded Accrued Liability
 Based on the Actuarial Valuation as of June 30, 2017**

Exhibit III

Illinois SERS- Buyout Cost Impact				
Scenario	Baseline - 6/30/2017	Scenario 1 - 25% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 2 - 50% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 3 - 75% of Eligible Tier 1 Members Elect the Buyout Option
Funding Policy	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions
Actuarial Cost Method	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Components Included In Scenario	N/A	25% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	50% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	75% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits
Fiscal Year	Unfunded Accrued Liability (\$ in millions)			
2018	\$30,862	\$26,709	\$27,710	\$28,713
2019	31,647	27,190	28,248	29,309
2020	32,247	27,754	28,809	29,865
2021	32,507	27,982	29,033	30,084
2022	32,819	28,268	29,312	30,357
2023	33,102	28,529	29,566	30,604
2024	33,343	28,754	29,781	30,810
2025	33,536	28,938	29,955	30,972
2026	33,666	29,067	30,071	31,077
2027	33,728	29,135	30,124	31,117
2028	33,720	29,142	30,115	31,089
2029	33,631	29,078	30,032	30,988
2030	33,458	28,941	29,874	30,808
2031	33,191	28,723	29,630	30,539
2032	32,812	28,408	29,287	30,167
2033	32,308	27,982	28,829	29,677
2034	31,420	27,190	28,001	28,813
2035	30,364	26,249	27,018	27,790
2036	29,125	25,144	25,868	26,593
2037	27,689	23,864	24,537	25,211
2038	26,039	22,395	23,010	23,628
2039	24,160	20,722	21,274	21,828
2040	22,034	18,831	19,313	19,797
2041	19,646	16,707	17,110	17,516
2042	16,978	14,335	14,654	14,973
2043	14,012	11,701	11,924	12,148
2044	10,728	8,786	8,904	9,024
2045	7,105	5,571	5,575	5,579



State Employees' Retirement System of Illinois
Projection of Funded Ratio
Based on the Actuarial Valuation as of June 30, 2017

Exhibit IV

Illinois SERS- Buyout Cost Impact				
Scenario	Baseline - 6/30/2017	Scenario 1 - 25% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 2 - 50% of Eligible Tier 1 Members Elect the Buyout Option	Scenario 3 - 75% of Eligible Tier 1 Members Elect the Buyout Option
Funding Policy	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions	90% by 2045; Level Percentage of Capped Payroll; 5 Year Phase-In of Contribution Rate Increases/Decreases Due to Changes in Actuarial Assumptions
Actuarial Cost Method	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit	Projected Unit Credit
Components Included In Scenario	N/A	25% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	50% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits	75% of Eligible Tier 1 Active and Deferred Vested Population Chooses Tier 2 COLA Structure and Accelerated Pension Benefit Payment Equal to 70% of the PVB Difference between Tier 1 and Tier 2 Future Benefit Increases of their Retirement Benefits
Fiscal Year	Funded Ratio			
2018	36.17%	39.45%	38.45%	37.49%
2019	36.69%	40.07%	38.94%	37.84%
2020	37.51%	40.41%	39.28%	38.19%
2021	38.87%	41.37%	40.23%	39.12%
2022	40.01%	42.08%	40.93%	39.81%
2023	41.09%	42.73%	41.56%	40.43%
2024	42.11%	43.33%	42.14%	40.99%
2025	43.10%	43.89%	42.69%	41.52%
2026	44.07%	44.44%	43.23%	42.05%
2027	45.03%	45.00%	43.77%	42.57%
2028	46.01%	45.58%	44.35%	43.15%
2029	47.02%	46.20%	44.97%	43.76%
2030	48.07%	46.87%	45.65%	44.45%
2031	49.16%	47.61%	46.40%	45.20%
2032	50.34%	48.45%	47.25%	46.06%
2033	51.63%	49.42%	48.24%	47.07%
2034	53.40%	50.99%	49.83%	48.69%
2035	55.34%	52.77%	51.64%	50.52%
2036	57.47%	54.79%	53.70%	52.62%
2037	59.82%	57.10%	56.06%	55.03%
2038	62.41%	59.72%	58.75%	57.78%
2039	65.29%	62.71%	61.82%	60.93%
2040	68.47%	66.09%	65.29%	64.51%
2041	71.99%	69.89%	69.22%	68.55%
2042	75.87%	74.16%	73.63%	73.09%
2043	80.15%	78.92%	78.54%	78.17%
2044	84.85%	84.19%	83.99%	83.80%
2045	90.00%	90.00%	90.00%	90.00%

