

June 5, 2023

Via E-mail

Mr. Clayton Klenke
Executive Director
Commission on Government Forecasting and Accountability (CoGFA)
703 William Stratton Building
Springfield, IL 62702

Re: Impact of Potential Tier 2 Benefit Formula Change Needed for FICA Exemption

Dear Clayton:

As requested, we are providing narrative and analysis regarding the impact of changes to the projected costs of the Teachers' Retirement System of the State of Illinois (TRS), State Employees' Retirement System of Illinois (SERS), and State Universities Retirement System of Illinois (SURS), based on potential benefit formula changes needed to maintain exemption from Federal Insurance Contributions Act (FICA) taxes.

This analysis is based on the provisions of the respective Plans. The information contained in this document, as well as the accompanying exhibits, were prepared using the actuarial assumptions consistent with those employed in the actuarial valuations of the Systems as of June 30, 2022 (dated January 9, 2023 for TRS, December 23, 2022 for SERS, and October 28, 2022 for SURS), except as otherwise noted below.

Note that the sample safe harbor tests shown in this letter (as defined below for FICA purposes) are included for illustrative purposes only. Neither Segal nor CoGFA is in possession of the data needed to determine the number of members who are not in compliance with the current safe harbor provisions. It is our understanding that, ultimately, it is the responsibility of the individual employers within each System to determine whether they qualify for exemption from FICA taxes.

FICA Exemption Testing

- The following benefit formulas satisfy a safe harbor under the applicable IRS regulations to qualify for exemption:
 - Tier 1 general benefit formula for TRS, SERS, and SURS
 - Tier 2 alternative benefit formula for SERS members (including those impacted under Public Act 102-0719)
 - Tier 2 benefit formula for SURS Police and Fire employees with 20+ years of service

As such, these members are exempt from FICA taxes.

- The following benefit formulas do not satisfy a safe harbor under the applicable IRS regulations
 - Tier 2 general benefit formula for TRS, SERS, and SURS
 - Tier 2 benefit formula for SURS Police and Fire employees with less than 20 years of service

As such, individual testing may be required.

Background

Employers and Employees are generally required to pay FICA taxes on compensation earned in the United States. Employees of state or local governments are provided an exemption if the employee participates in a retirement system that provides benefits that are comparable (or better) than the benefits provided through the Old-Age portion of Social Security.

The IRS has provided guidance on determining whether a system's benefits are comparable to Social Security in Revenue Procedure 91-40. The guidance provides for three levels of testing:

- If the benefit provisions meet certain requirements, then the System qualifies under a safe harbor and no further testing is required.
- If the System does not satisfy the safe harbor requirements, then individual testing can be performed to confirm that the benefits for active members of an employer meet the minimum benefit requirements.
- Treas. Reg. 31.3121(b)(7)-2(e)(2) permits employers to compare the actual retirement benefits accrued by Tier 2 members to the estimated retirement benefits such members would receive from Social Security on an individual-by-individual basis. If the System's benefit were greater for some or all Tier 2 members, those Tier 2 members would continue to be exempt from FICA taxes.

Safe Harbor – Tier 1

IRS Revenue Procedure 91-40 outlines a set of safe harbor formulas that are deemed to meet the minimum retirement benefits that a retirement system must provide to all members for them to be exempt from FICA taxes. If the System does not meet the safe harbor requirements, Revenue Procedure 91-40 describes procedures for employers to determine whether retirement benefits under other formulas meet the minimum retirement benefit requirement.

The retirement benefit for Tier 1 is generally equal to 2.20% of the final average salary per year of service payable at the earlier of age 60 with 10 years of service or age 62 with five years of service. Final average salary is determined using a four-year averaging period.

For a System providing benefits using a final average salary formula, the safe harbor formula requires a life annuity payable no later than age 65 that is at least equal to a minimum required percentage of final average salary per year of service. The minimum required percentage varies based on the length of the averaging period used to determine the final average salary. The table below summarizes the minimum required percentage of final average salary per year of service for applicable averaging periods.

| Averaging Period | Minimum Required Percentage |
|-------------------------|------------------------------------|
| 0 - 36 months | 1.50% |
| 37 - 48 months | 1.55% |
| 49 - 60 months | 1.60% |
| 61 - 120 months | 1.75% |
| Over 120 months | 2.00% |

Since the Tier 1 averaging period is four years (48 months), the applicable minimum percentage for Tier 1 members is 1.55%. Therefore, Tier 1 members are exempt from FICA taxes.

Safe Harbor – Tier 2

General Formula

In general, the retirement benefit for TRS, SERS, and SURS Tier 2 members under the general formula (and who are not covered by Social Security) is equal to 2.20% of the final average salary per year of service payable at age 67 (different accrual rates are applicable for SERS members under the alternative formula and SURS Police and Fire employees, which are noted below). A cap limits compensation used in the calculation of final average salary.

Since the Tier 2 averaging period is eight years (96 months), the applicable minimum percentage for Tier 2 members is 1.75%. However, the 2.20% accrual rate must be adjusted for normal retirement age and the pay cap:

- The Tier 2 benefit is payable at age 67. Safe harbor testing is performed on the benefit payable at age 65. Tier 2 members are eligible to receive a benefit at age 65 that is reduced 6% per year from age 67. Applying the reduction of 12% to 2.20% accrual rate results in a 1.936% of final average salary payable at age 65.
- The accrual rate must be adjusted if the definition of compensation excludes compensation below the Social Security Wage Base (SSWB). Pensionable earnings for Tier 2 members are limited to \$106,800 in 2011 growing at the lesser of ½ of CPI-U or 3%.

For the plan year ending June 30, 2023, the Tier 2 pay limit is \$119,892 and the corresponding SSWB is \$160,200. The adjustments for early retirement and the pay cap result in an adjusted Tier 2 accrual rate of 1.449% as follow:

$$2.20\% * (0.88) * (119,892 / 160,200) = 1.449\%.$$

Since this adjusted accrual rate is less than the 1.75% safe harbor rate, the Tier 2 benefit accrual for TRS, SERS, and SURS members under the general formula does not satisfy the safe harbor requirements for 2023.

Other Formulas

The applicable accrual rates for SERS members under the alternative formula (e.g., State Trooper) and SURS Police and Fire employees (who are not covered by Social Security) are as follows:

- SERS – 3.00% of the final average salary per year of service.
- SURS – 2.25% of the final average salary for the first 10 years of service, 2.50% for the next 10 years of service, and 2.75% for years of service thereafter.

The normal retirement eligibility for both SERS members under the alternative formula and SURS Police and Fire employees is the earlier of: 1) age 67 and 10 years of service, 2) age 60 and 20 years of service, or 3) age 55 and 20 years of service (applicable only for a subset of SERS Tier 2 law enforcement members per Public Act 102-0719). Therefore, separate safe harbor testing must be considered for these members with less than 20 years of service and members with 20 or more years of service.

For applicable SERS and SURS members with less than 20 years of service, the Tier 2 accrual rate (adjusted for early retirement and pay cap similar to members under the general formula) for a sample member with 19 years of service at retirement (i.e., maximum years of service prior to attaining early unreduced retirement eligibility) is shown below:

$$\begin{aligned} \text{SERS}^1: & [(3.00\% * 19)] \div 19 * (0.88) * (119,892 / 160,200) = 1.976\% \\ \text{SURS}: & [(2.25\% * 10) + (2.50\% * 9) + (2.75\% * 0)] \div 19 * (0.88) * (119,892 / 160,200) = 1.560\% \end{aligned}$$

Since the adjusted accrual rate for SERS is greater than the 1.75% safe harbor rate, the Tier 2 benefit accruals applicable for SERS members under the alternative formula (including those eligible for age 55 retirement per Public Act 102-0719) satisfies safe harbor requirements for 2023. However, the benefit formula for SURS Police and Fire employees with less than 20 years of service does not satisfy safe harbor requirements for 2023 (as the adjusted accrual rate is less than 1.75%).

For applicable SERS and SURS members with 20 or more years of service, the Tier 2 accrual rate (adjusted for the pay cap only) for a sample member with 20 years of service at retirement (i.e., minimum years of service to attain early unreduced retirement eligibility) is shown below:

$$\begin{aligned} \text{SERS}^1: & [(3.00\% * 20)] \div 20 * (119,892 / 160,200) = 2.245\% \\ \text{SURS}: & [(2.25\% * 10) + (2.50\% * 10) + (2.75\% * 0)] \div 20 * (119,892 / 160,200) = 1.777\% \end{aligned}$$

Since the adjusted accrual rates are greater than 1.75%, the Tier 2 benefit accruals applicable for SERS members under the alternative formula (including those eligible for age 55 retirement per Public Act 102-0719) and SURS Police and Fire employees with 20 or more years of service satisfy the safe harbor requirements for 2023.

¹ Sample Tier 2 safe harbor accrual test for all SERS members, including those eligible for age 55 normal retirement under Public Act 102-0719.

Tier 2 Benefit Change to Satisfy Safe Harbor

If the capped pensionable earnings for TRS, SERS, and SURS Tier 2 members under the general formula were changed to be equal to the Social Security Wage Base for all years, the adjustment for the definition of compensation would be eliminated. Therefore, the Tier 2 formula adjustment to meet the safe harbor would be only for early retirement:

$$2.20\% * (0.88) = 1.936\%.$$

Since this rate exceeds the 1.75% safe harbor rate, the Tier 2 benefit accrual would satisfy the safe harbor requirement.

Similarly for SURS Police and Fire employees with less than 20 years of service, if the capped pensionable earnings were changed to be equal to the Social Security Wage Base for all years, the only applicable Tier 2 formula adjustment to meet the safe harbor would be for early retirement. A sample member with 10 years of service at retirement (i.e., minimum years of service to become vested) is shown below:

$$[(2.25\% * 10) + (2.50\% * 0) + (2.75\% * 0)] \div 10 * (0.88) = 1.980\%.$$

Since this rate exceeds the 1.75% safe harbor rate, the Tier 2 benefit accrual would satisfy the safe harbor requirement.

Financial Impact

The following table demonstrates the impact of changing the Tier 2 pensionable earnings cap to the Social Security Wage Base on actuarial liabilities and funded percentage as of June 30, 2022, for all TRS, SERS, and SURS Tier 2 members (representing a maximum cost if such change was implemented unilaterally across Tier 2). Upon request, we can provide additional analysis of limiting the change in the Tier 2 pensionable earnings cap to TRS, SERS, and SURS Tier 2 members under the general formula and SURS Police and Fire employees with less than 20 years of service.

Please note that for purposes of this analysis, we have not attempted to quantify the impact of applying this change retrospectively or of its potential impact on new entrant profiles.

The attached exhibits show in detail the projected contributions, actuarial liabilities, and funded position through 2045 reflecting the changes outlined above.

This analysis has been prepared at your request and is not to be considered a recommendation by Segal. Numbers shown below have been rounded to the nearest million.

As of June 30, 2022 (\$ in millions)

| | TRS | SERS | SURS | Total |
|--|-----------|----------|----------|-----------|
| Baseline | | | | |
| Accrued Liability | \$143,524 | \$52,050 | \$49,870 | \$245,444 |
| Actuarial Assets | 62,911 | 22,893 | 22,555 | 108,359 |
| Unfunded Liability | 80,613 | 29,157 | 27,315 | 137,085 |
| Funded Percentage | 43.8% | 44.0% | 45.2% | 44.1% |
| Total State Contributions Through FY2045 | \$184,544 | \$71,316 | \$66,574 | \$322,434 |
| Present Value of Contributions Through FY2045 | \$86,790 | \$34,496 | \$32,671 | \$153,957 |
| Update Tier 2 Cap to SSWB for all Tier 2 Members | | | | |
| Accrued Liability | \$143,687 | \$52,145 | \$49,897 | \$245,729 |
| Actuarial Assets | 62,911 | 22,893 | 22,555 | 108,359 |
| Unfunded Liability | 80,776 | 29,252 | 27,342 | 137,370 |
| Funded Percentage | 43.8% | 43.9% | 45.2% | 44.1% |
| Total State Contributions Through FY2045 | \$187,899 | \$72,763 | \$67,378 | \$328,040 |
| Present Value of Contributions Through FY2045 | \$88,070 | \$35,025 | \$32,969 | \$156,064 |
| Change in Unfunded Liability | \$163 | \$95 | \$27 | \$285 |
| Change in Funded Percentage | 0.0% | (0.1%) | 0.0% | 0.0% |
| Change in Total State Contributions Through FY2045 | \$3,355 | \$1,447 | \$804 | \$5,606 |
| Change in Present Value of State Contributions Through FY2045 | \$1,280 | \$529 | \$298 | \$2,107 |

Actuarial Assumptions and Methods

The analysis was based upon the census and actuarial assumptions and methods in the June 30, 2022, actuarial valuation reports for each respective System. For purposes of this analysis, all changes are assumed to be effective immediately, unless otherwise noted.

The analysis reflects the Tier 2 pensionable earnings limits of \$116,740, applicable for the plan years ending June 30, 2021 and June 30, 2022, and \$119,892, applicable for the plan year ending June 30, 2023. The analysis also reflects the SSWB limits of \$142,800, \$147,000, and \$160,200, applicable for the calendar years 2021, 2022, and 2023, respectively.

For TRS and SURS, since Tier 2 participant's earnings are reported at the current cap (i.e., their actual earnings are unknown), we estimated their actual earnings to be 3/4ths of the way between the current limit and the new limit (Social Security Wage Base). To the extent that actual Tier 2 participant earnings for TRS and SURS, on average, exceed 3/4ths of the way between the current limit and the Social Security Wage Base, the actual impact on those systems would be larger than illustrated. For SERS, we used actual earnings (i.e., the Tier 2 cap is not applied in reported earnings). The Social Security Wage Base was projected to future years using 2.50% annual increase for TRS and 2.25% annual increase for SERS and SURS (based on the respective inflation assumptions of the Systems and as a proxy for increases in the Social Security Wage Base).

Comments about Projections

Projections, by their nature, are not a guarantee of future results. The modeled projections are intended to serve as estimates of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, and the regulatory environment. The longer the projection period, the less predictable the projections become.

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 our 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 actuaries.

Segal is not a law firm and we cannot offer legal advice. The comments in this letter are based on our many years of consulting to employee benefit plans. Any user seeking a legal opinion should consult with appropriate legal counsel.

This analysis was prepared under the supervision of Matthew Strom. Matthew Strom is a member of the American Academy of Actuaries and meets the *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* of the American Academy of Actuaries to render the actuarial opinion contained herein.

Please let us know if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Matthew A. Strom". The signature is fluid and cursive, with a long horizontal line extending from the end of the name.

Matthew Strom
Senior Vice President & Consulting Actuary

Funding Projections for the Teachers' Retirement System

Based on Laws in Effect on June 30, 2022

Actuarially Assumed Rate of Return: 7.00%

(\$ in millions)

| Fiscal Year Ending 6/30 | Annual State Payroll* | Total State Contribution | State Contribution as Percent of Payroll | Total Employee Contribution | Actuarial Accrued Liability | Actuarial Value of Assets | Unfunded Liability | Funded Ratio |
|-------------------------|-----------------------|--------------------------|--|-----------------------------|-----------------------------|---------------------------|--------------------|--------------|
| 2022 | | | | | \$143,523.7 | \$62,910.4 | \$80,613.3 | 43.8% |
| 2023 | \$11,448.9 | \$5,893.7 | 51.5% | \$1,051.4 | 147,495.4 | 66,184.8 | 81,310.6 | 44.9% |
| 2024 | 11,893.2 | 6,043.2 | 50.8% | 1,092.2 | 151,477.2 | 69,786.7 | 81,690.6 | 46.1% |
| 2025 | 12,211.8 | 6,247.1 | 51.2% | 1,121.5 | 155,459.8 | 74,248.5 | 81,211.4 | 47.8% |
| 2026 | 12,528.4 | 6,447.6 | 51.5% | 1,150.6 | 159,434.9 | 77,007.1 | 82,427.8 | 48.3% |
| 2027 | 12,843.5 | 6,592.2 | 51.3% | 1,179.5 | 163,572.9 | 80,993.9 | 82,579.0 | 49.5% |
| 2028 | 13,142.4 | 6,809.6 | 51.8% | 1,207.0 | 167,674.0 | 85,176.6 | 82,497.4 | 50.8% |
| 2029 | 13,429.4 | 6,947.7 | 51.7% | 1,233.3 | 171,716.8 | 89,473.6 | 82,243.2 | 52.1% |
| 2030 | 13,718.6 | 7,074.5 | 51.6% | 1,259.9 | 175,685.8 | 93,875.2 | 81,810.6 | 53.4% |
| 2031 | 14,007.3 | 7,204.1 | 51.4% | 1,286.4 | 179,563.0 | 98,383.5 | 81,179.5 | 54.8% |
| 2032 | 14,296.0 | 7,351.4 | 51.4% | 1,312.9 | 183,325.7 | 103,014.2 | 80,311.5 | 56.2% |
| 2033 | 14,581.2 | 7,513.9 | 51.5% | 1,339.1 | 186,946.7 | 107,779.6 | 79,167.1 | 57.7% |
| 2034 | 14,857.2 | 8,280.2 | 55.7% | 1,364.4 | 190,401.3 | 113,306.3 | 77,095.0 | 59.5% |
| 2035 | 15,131.5 | 8,433.1 | 55.7% | 1,389.6 | 193,665.6 | 119,006.2 | 74,659.4 | 61.4% |
| 2036 | 15,409.5 | 8,588.0 | 55.7% | 1,415.2 | 196,723.6 | 124,895.4 | 71,828.1 | 63.5% |
| 2037 | 15,692.7 | 8,745.8 | 55.7% | 1,441.2 | 199,562.4 | 130,995.5 | 68,566.9 | 65.6% |
| 2038 | 15,987.8 | 8,910.3 | 55.7% | 1,468.3 | 202,158.1 | 137,326.2 | 64,831.9 | 67.9% |
| 2039 | 16,285.8 | 9,076.4 | 55.7% | 1,495.6 | 204,486.0 | 143,907.8 | 60,578.2 | 70.4% |
| 2040 | 16,586.5 | 9,244.0 | 55.7% | 1,523.3 | 206,523.2 | 150,762.8 | 55,760.4 | 73.0% |
| 2041 | 16,907.3 | 9,422.8 | 55.7% | 1,552.7 | 208,263.4 | 157,941.2 | 50,322.2 | 75.8% |
| 2042 | 17,244.3 | 9,610.6 | 55.7% | 1,583.7 | 209,711.7 | 165,500.7 | 44,211.0 | 78.9% |
| 2043 | 17,606.3 | 9,812.3 | 55.7% | 1,616.9 | 210,888.2 | 173,518.4 | 37,369.8 | 82.3% |
| 2044 | 17,997.2 | 10,030.2 | 55.7% | 1,652.8 | 211,834.0 | 182,095.0 | 29,739.0 | 86.0% |
| 2045 | 18,419.1 | 10,265.4 | 55.7% | 1,691.6 | 212,595.4 | 191,335.8 | 21,259.5 | 90.0% |
| Total | | \$184,544.1 | | \$31,429.1 | | | | |

* Does not include Federal Payroll

Exhibit 1B – TRS Tier 2 Payroll Cap to Social Security Wage Base Projection

Funding Projections for the Teachers' Retirement System

CoGFA Projections Based on Laws in Effect on June 30, 2022, Tier 2 Pensionable Earnings Cap to Social Security Wage Base

Actuarially Assumed Rate of Return: 7.00%

(\$ in millions)

| Fiscal Year Ending 6/30 | Annual State Payroll* | Total State Contribution | Compared to Exhibit 1A | | State Contribution as Percent of Payroll | Total Employee Contribution | Actuarial Accrued Liability | Actuarial Value of Assets | Unfunded Liability | Funded Ratio |
|-------------------------|-----------------------|--------------------------|---|---|--|-----------------------------|-----------------------------|---------------------------|--------------------|--------------|
| | | | (Reduction)/ Increase in State Contribution | (Reduction)/ Increase in State Contribution | | | | | | |
| 2022 | | | | | | | \$143,686.9 | \$62,910.4 | \$80,776.5 | 43.8% |
| 2023 | \$11,448.9 | \$5,893.7 | \$0.0 | \$0.0 | 51.5% | \$1,051.4 | 147,701.0 | 66,184.8 | 81,516.2 | 44.8% |
| 2024 | 11,903.4 | 6,100.7 | 57.6 | 52.0 | 51.3% | 1,093.2 | 151,733.5 | 69,848.0 | 81,885.5 | 46.0% |
| 2025 | 12,225.0 | 6,307.7 | 60.5 | 51.1 | 51.6% | 1,122.7 | 155,776.3 | 74,379.0 | 81,397.3 | 47.7% |
| 2026 | 12,545.2 | 6,511.6 | 64.0 | 50.5 | 51.9% | 1,152.1 | 159,822.3 | 77,215.7 | 82,606.6 | 48.3% |
| 2027 | 12,864.8 | 6,660.5 | 68.4 | 50.4 | 51.8% | 1,181.5 | 164,043.6 | 81,291.2 | 82,752.4 | 49.6% |
| 2028 | 13,169.2 | 6,881.7 | 72.1 | 49.7 | 52.3% | 1,209.4 | 168,242.3 | 85,573.4 | 82,668.9 | 50.9% |
| 2029 | 13,463.3 | 7,025.1 | 77.3 | 49.8 | 52.2% | 1,236.4 | 172,398.9 | 89,983.3 | 82,415.6 | 52.2% |
| 2030 | 13,760.8 | 7,157.8 | 83.3 | 50.2 | 52.0% | 1,263.7 | 176,500.1 | 94,512.8 | 81,987.3 | 53.5% |
| 2031 | 14,059.5 | 7,294.3 | 90.2 | 50.8 | 51.9% | 1,291.2 | 180,530.2 | 99,166.2 | 81,364.0 | 54.9% |
| 2032 | 14,359.7 | 7,449.4 | 98.0 | 51.5 | 51.9% | 1,318.7 | 184,469.3 | 103,961.8 | 80,507.5 | 56.4% |
| 2033 | 14,658.4 | 7,620.8 | 106.9 | 52.5 | 52.0% | 1,346.2 | 188,293.0 | 108,914.1 | 79,378.9 | 57.8% |
| 2034 | 14,949.8 | 8,397.5 | 117.3 | 53.9 | 56.2% | 1,372.9 | 191,980.2 | 114,653.5 | 77,326.7 | 59.7% |
| 2035 | 15,241.6 | 8,561.5 | 128.4 | 55.1 | 56.2% | 1,399.7 | 195,510.3 | 120,594.3 | 74,916.1 | 61.7% |
| 2036 | 15,539.4 | 8,728.8 | 140.7 | 56.5 | 56.2% | 1,427.1 | 198,871.5 | 126,756.2 | 72,115.3 | 63.7% |
| 2037 | 15,845.0 | 8,900.4 | 154.6 | 58.0 | 56.2% | 1,455.2 | 202,055.0 | 133,164.7 | 68,890.3 | 65.9% |
| 2038 | 16,165.4 | 9,080.4 | 170.1 | 59.6 | 56.2% | 1,484.6 | 205,041.5 | 139,844.0 | 65,197.5 | 68.2% |
| 2039 | 16,492.2 | 9,264.0 | 187.5 | 61.4 | 56.2% | 1,514.6 | 207,811.4 | 146,819.3 | 60,992.1 | 70.7% |
| 2040 | 16,825.3 | 9,451.1 | 207.1 | 63.4 | 56.2% | 1,545.2 | 210,347.3 | 154,118.7 | 56,228.6 | 73.3% |
| 2041 | 17,182.9 | 9,651.9 | 229.2 | 65.5 | 56.2% | 1,578.0 | 212,648.6 | 161,798.7 | 50,849.9 | 76.1% |
| 2042 | 17,564.4 | 9,866.3 | 255.6 | 68.3 | 56.2% | 1,613.1 | 214,726.9 | 169,925.9 | 44,801.0 | 79.1% |
| 2043 | 17,981.5 | 10,100.5 | 288.2 | 72.0 | 56.2% | 1,651.4 | 216,608.4 | 178,589.1 | 38,019.3 | 82.4% |
| 2044 | 18,437.5 | 10,356.7 | 326.5 | 76.2 | 56.2% | 1,693.2 | 218,340.9 | 187,900.6 | 30,440.3 | 86.1% |
| 2045 | 18,936.4 | 10,636.9 | 371.6 | 81.1 | 56.2% | 1,739.1 | 219,976.7 | 197,979.1 | 21,997.7 | 90.0% |
| Total | | \$187,899.3 | \$3,355.1 | \$1,279.5 | | \$31,740.6 | | | | |

* Does not include Federal Payroll

Funding Projections for the State Employees' Retirement System

CoGFA Projections Based on Laws in Effect on June 30, 2022

Actuarially Assumed Rate of Return: 6.75%

(\$ in millions)

| Fiscal Year Ending 6/30 | Annual Payroll | Total State Contribution | State Contribution as Percent of Payroll | Total Employee Contribution | Actuarial Accrued Liability | Actuarial Value of Assets | Unfunded Liability | Funded Ratio |
|-------------------------|----------------|--------------------------|--|-----------------------------|-----------------------------|---------------------------|--------------------|--------------|
| 2022 | | | | | \$52,049.7 | \$22,892.7 | \$29,157.0 | 44.0% |
| 2023 | \$4,851.8 | \$2,475.6 | 51.0% | \$271.6 | 53,224.3 | 23,947.7 | 29,276.7 | 45.0% |
| 2024 | 4,918.8 | 2,450.3 | 49.8% | 273.4 | 54,324.6 | 24,938.4 | 29,386.2 | 45.9% |
| 2025 | 4,989.6 | 2,487.0 | 49.8% | 275.5 | 55,347.6 | 25,983.4 | 29,364.3 | 46.9% |
| 2026 | 5,062.6 | 2,523.9 | 49.9% | 277.8 | 56,285.4 | 26,303.5 | 29,981.9 | 46.7% |
| 2027 | 5,139.2 | 2,557.3 | 49.8% | 280.2 | 57,132.6 | 27,214.2 | 29,918.4 | 47.6% |
| 2028 | 5,218.6 | 2,644.4 | 50.7% | 282.9 | 57,889.7 | 28,145.1 | 29,744.5 | 48.6% |
| 2029 | 5,305.6 | 2,667.3 | 50.3% | 286.1 | 58,562.2 | 29,039.6 | 29,522.6 | 49.6% |
| 2030 | 5,399.6 | 2,706.5 | 50.1% | 289.7 | 59,153.3 | 29,918.4 | 29,234.9 | 50.6% |
| 2031 | 5,499.1 | 2,749.7 | 50.0% | 293.8 | 59,663.6 | 30,791.1 | 28,872.5 | 51.6% |
| 2032 | 5,604.7 | 2,801.8 | 50.0% | 298.0 | 60,092.9 | 31,671.0 | 28,421.9 | 52.7% |
| 2033 | 5,713.7 | 2,861.2 | 50.1% | 302.2 | 60,444.0 | 32,573.2 | 27,870.8 | 53.9% |
| 2034 | 5,829.2 | 3,128.7 | 53.7% | 306.8 | 60,721.0 | 33,722.8 | 26,998.2 | 55.5% |
| 2035 | 5,948.8 | 3,192.9 | 53.7% | 311.5 | 60,929.0 | 34,934.2 | 25,994.8 | 57.3% |
| 2036 | 6,071.5 | 3,258.8 | 53.7% | 316.2 | 61,068.1 | 36,218.2 | 24,849.9 | 59.3% |
| 2037 | 6,196.8 | 3,326.1 | 53.7% | 321.0 | 61,143.5 | 37,589.2 | 23,554.3 | 61.5% |
| 2038 | 6,330.3 | 3,397.7 | 53.7% | 326.3 | 61,165.0 | 39,069.3 | 22,095.7 | 63.9% |
| 2039 | 6,470.9 | 3,473.2 | 53.7% | 331.9 | 61,138.8 | 40,679.0 | 20,459.8 | 66.5% |
| 2040 | 6,616.5 | 3,551.3 | 53.7% | 337.7 | 61,070.8 | 42,439.4 | 18,631.4 | 69.5% |
| 2041 | 6,769.6 | 3,633.5 | 53.7% | 343.9 | 60,970.1 | 44,375.1 | 16,595.0 | 72.8% |
| 2042 | 6,929.7 | 3,719.4 | 53.7% | 350.4 | 60,848.3 | 46,511.5 | 14,336.8 | 76.4% |
| 2043 | 7,097.0 | 3,809.2 | 53.7% | 357.3 | 60,715.8 | 48,876.6 | 11,839.2 | 80.5% |
| 2044 | 7,270.9 | 3,902.6 | 53.7% | 364.6 | 60,577.7 | 51,495.7 | 9,082.0 | 85.0% |
| 2045 | 7,448.3 | 3,997.8 | 53.7% | 372.1 | 60,436.5 | 54,392.9 | 6,043.7 | 90.0% |
| Total Through 2045 | | \$71,316.2 | | \$7,170.9 | | | | |

Exhibit 2B – SERS Tier 2 Payroll Cap to Social Security Wage Base Projection

Funding Projections for the State Employees' Retirement System

CoGFA Projections Based on Laws in Effect on June 30, 2022, Tier 2 Pensionable Earnings Cap to Social Security Wage Base

Actuarially Assumed Rate of Return: 6.75%

(\$ in millions)

| Fiscal Year Ending 6/30 | Annual Payroll | Total State Contribution | Compared to Exhibit 2A | | State Contribution as Percent of Payroll | Total Employee Contribution | Actuarial Accrued Liability | Actuarial Value of Assets | Unfunded Liability | Funded Ratio |
|-------------------------|----------------|--------------------------|---|--|--|-----------------------------|-----------------------------|---------------------------|--------------------|--------------|
| | | | (Reduction)/ Increase in State Contribution | Present Value of (Reduction)/ Increase in State Contribution | | | | | | |
| 2022 | | | | | | | \$52,144.8 | \$22,892.7 | \$29,252.1 | 43.9% |
| 2023 | \$4,851.8 | \$2,475.6 | \$0.0 | \$0.0 | 51.0% | \$271.6 | 53,343.6 | 23,947.6 | 29,396.0 | 44.9% |
| 2024 | 4,931.8 | 2,461.1 | 10.8 | 9.8 | 49.9% | 274.1 | 54,471.6 | 24,950.0 | 29,521.6 | 45.8% |
| 2025 | 5,006.5 | 2,499.8 | 12.8 | 10.9 | 49.9% | 276.4 | 55,526.3 | 26,009.6 | 29,516.6 | 46.8% |
| 2026 | 5,083.8 | 2,539.0 | 15.1 | 12.0 | 49.9% | 278.9 | 56,500.2 | 26,348.1 | 30,152.2 | 46.6% |
| 2027 | 5,165.3 | 2,575.2 | 17.9 | 13.3 | 49.9% | 281.7 | 57,388.6 | 27,281.2 | 30,107.4 | 47.5% |
| 2028 | 5,250.7 | 2,664.8 | 20.4 | 14.2 | 50.8% | 284.6 | 58,192.4 | 28,239.0 | 29,953.4 | 48.5% |
| 2029 | 5,344.3 | 2,691.3 | 23.9 | 15.7 | 50.4% | 288.2 | 58,917.8 | 29,165.9 | 29,751.9 | 49.5% |
| 2030 | 5,445.8 | 2,734.5 | 28.1 | 17.2 | 50.2% | 292.2 | 59,568.6 | 30,083.8 | 29,484.8 | 50.5% |
| 2031 | 5,553.8 | 2,782.3 | 32.7 | 18.8 | 50.1% | 296.7 | 60,146.2 | 31,003.2 | 29,143.0 | 51.5% |
| 2032 | 5,668.7 | 2,839.5 | 37.8 | 20.3 | 50.1% | 301.4 | 60,650.9 | 31,938.5 | 28,712.4 | 52.7% |
| 2033 | 5,788.1 | 2,904.7 | 43.4 | 21.9 | 50.2% | 306.2 | 61,086.7 | 32,905.8 | 28,180.8 | 53.9% |
| 2034 | 5,915.0 | 3,178.6 | 49.8 | 23.5 | 53.7% | 311.3 | 61,458.1 | 34,131.7 | 27,326.5 | 55.5% |
| 2035 | 6,047.5 | 3,249.7 | 56.8 | 25.1 | 53.7% | 316.7 | 61,771.5 | 35,431.7 | 26,339.8 | 57.4% |
| 2036 | 6,184.5 | 3,323.3 | 64.6 | 26.7 | 53.7% | 322.1 | 62,027.8 | 36,818.5 | 25,209.3 | 59.4% |
| 2037 | 6,325.5 | 3,399.1 | 73.1 | 28.3 | 53.7% | 327.7 | 62,233.2 | 38,308.0 | 23,925.3 | 61.6% |
| 2038 | 6,475.9 | 3,480.0 | 82.3 | 29.9 | 53.7% | 333.8 | 62,398.7 | 39,924.0 | 22,474.7 | 64.0% |
| 2039 | 6,634.6 | 3,565.2 | 92.1 | 31.3 | 53.7% | 340.3 | 62,531.2 | 41,688.8 | 20,842.3 | 66.7% |
| 2040 | 6,799.1 | 3,653.6 | 102.3 | 32.6 | 53.7% | 347.0 | 62,636.9 | 43,624.8 | 19,012.0 | 69.6% |
| 2041 | 6,971.7 | 3,746.4 | 112.9 | 33.7 | 53.7% | 354.1 | 62,725.7 | 45,758.2 | 16,967.5 | 72.9% |
| 2042 | 7,152.4 | 3,843.4 | 124.1 | 34.7 | 53.7% | 361.7 | 62,811.3 | 48,115.9 | 14,695.4 | 76.6% |
| 2043 | 7,341.6 | 3,945.1 | 135.9 | 35.6 | 53.7% | 369.6 | 62,905.1 | 50,727.9 | 12,177.2 | 80.6% |
| 2044 | 7,538.6 | 4,051.0 | 148.5 | 36.4 | 53.7% | 378.1 | 63,012.3 | 53,621.0 | 9,391.2 | 85.1% |
| 2045 | 7,740.1 | 4,159.3 | 161.5 | 37.1 | 53.7% | 386.7 | 63,134.8 | 56,821.3 | 6,313.5 | 90.0% |
| Total Through 2045 | | \$72,762.5 | \$1,446.8 | \$529.0 | | \$7,301.1 | | | | |

Funding Projections for the State Universities Retirement System

CoGFA Projections Based on Laws in Effect on June 30, 2022

Actuarially Assumed Rate of Return: 6.50%

(\$ in millions)

| Fiscal Year Ending 6/30 | Annual Payroll* | Total State Contribution | State Contribution as Percent of Payroll | Total Employee Contribution | Actuarial Accrued Liability | Actuarial Value of Assets | Unfunded Liability | Funded Ratio |
|-------------------------|-----------------|--------------------------|--|-----------------------------|-----------------------------|---------------------------|--------------------|--------------|
| 2022 | | | | | \$49,869.9 | \$22,554.8 | \$27,315.2 | 45.2% |
| 2023 | \$5,051.5 | \$2,160.9 | 42.8% | \$303.6 | 50,650.0 | 23,298.6 | 27,351.4 | 46.0% |
| 2024 | 5,279.4 | 2,200.9 | 41.7% | 316.0 | 51,404.0 | 24,070.3 | 27,333.6 | 46.8% |
| 2025 | 5,381.0 | 2,242.9 | 41.7% | 317.9 | 52,087.0 | 24,963.5 | 27,123.5 | 47.9% |
| 2026 | 5,491.2 | 2,285.5 | 41.6% | 320.5 | 52,703.3 | 25,140.2 | 27,563.1 | 47.7% |
| 2027 | 5,619.7 | 2,323.2 | 41.3% | 324.6 | 53,259.0 | 25,738.6 | 27,520.4 | 48.3% |
| 2028 | 5,760.5 | 2,417.7 | 42.0% | 329.7 | 53,748.3 | 26,370.6 | 27,377.7 | 49.1% |
| 2029 | 5,907.4 | 2,479.1 | 42.0% | 335.2 | 54,172.1 | 27,008.9 | 27,163.2 | 49.9% |
| 2030 | 6,058.4 | 2,538.2 | 41.9% | 341.0 | 54,529.2 | 27,655.8 | 26,873.4 | 50.7% |
| 2031 | 6,215.8 | 2,601.2 | 41.8% | 347.1 | 54,811.9 | 28,313.1 | 26,498.8 | 51.7% |
| 2032 | 6,377.9 | 2,672.2 | 41.9% | 353.4 | 55,023.9 | 28,998.8 | 26,025.1 | 52.7% |
| 2033 | 6,545.0 | 2,751.3 | 42.0% | 360.0 | 55,180.4 | 29,742.0 | 25,438.4 | 53.9% |
| 2034 | 6,720.4 | 2,852.2 | 42.4% | 366.9 | 55,283.1 | 30,573.7 | 24,709.4 | 55.3% |
| 2035 | 6,900.8 | 2,931.1 | 42.5% | 374.0 | 55,331.9 | 31,481.7 | 23,850.2 | 56.9% |
| 2036 | 7,084.1 | 3,011.4 | 42.5% | 381.3 | 55,325.9 | 32,475.9 | 22,850.0 | 58.7% |
| 2037 | 7,272.6 | 3,093.8 | 42.5% | 388.8 | 55,272.5 | 33,576.1 | 21,696.4 | 60.7% |
| 2038 | 7,466.6 | 3,178.6 | 42.6% | 396.6 | 55,172.6 | 34,796.1 | 20,376.6 | 63.1% |
| 2039 | 7,666.2 | 3,265.9 | 42.6% | 404.6 | 55,038.1 | 36,160.2 | 18,877.9 | 65.7% |
| 2040 | 7,871.9 | 3,355.8 | 42.6% | 412.9 | 54,870.6 | 37,683.5 | 17,187.1 | 68.7% |
| 2041 | 8,081.7 | 3,447.4 | 42.7% | 421.4 | 54,689.2 | 39,396.2 | 15,293.0 | 72.0% |
| 2042 | 8,299.7 | 3,542.4 | 42.7% | 430.4 | 54,502.0 | 41,319.9 | 13,182.1 | 75.8% |
| 2043 | 8,524.1 | 3,640.2 | 42.7% | 439.9 | 54,323.3 | 43,483.0 | 10,840.3 | 80.0% |
| 2044 | 8,754.9 | 3,740.6 | 42.7% | 449.6 | 54,159.3 | 45,907.4 | 8,251.9 | 84.8% |
| 2045 | 8,986.4 | 3,841.5 | 42.7% | 459.3 | 54,018.2 | 48,616.4 | 5,401.8 | 90.0% |
| Total Through 2045 | | \$66,574.0 | | \$8,574.7 | | | | |

* Includes payroll from Self Managed Plan (SMP)

Exhibit 3B – SURS Tier 2 Payroll Cap to Social Security Wage Base Projection

Funding Projections for the State Universities Retirement System

CoGFA Projections Based on Laws in Effect on June 30, 2022, Tier 2 Pensionable Earnings Cap to Social Security Wage Base

Actuarially Assumed Rate of Return: 6.50%

(\$ in millions)

| Fiscal Year Ending 6/30 | Annual Payroll* | Total State Contribution | Compared to Exhibit 3A | | State Contribution as Percent of Payroll | Total Employee Contribution | Actuarial Accrued Liability | Actuarial Value of Assets | Unfunded Liability | Funded Ratio |
|-------------------------|-----------------|--------------------------|---|---|--|-----------------------------|-----------------------------|---------------------------|--------------------|--------------|
| | | | (Reduction)/ Increase in State Contribution | (Reduction)/ Increase in State Contribution | | | | | | |
| 2022 | | | | | | | \$49,896.7 | \$22,554.8 | \$27,341.9 | 45.2% |
| 2023 | \$5,051.5 | \$2,160.9 | \$0.0 | \$0.0 | 42.8% | \$303.6 | 50,684.2 | 23,298.6 | 27,385.6 | 46.0% |
| 2024 | 5,308.3 | 2,198.7 | (2.1) | (1.9) | 41.4% | 318.3 | 51,449.1 | 24,070.5 | 27,378.6 | 46.8% |
| 2025 | 5,419.6 | 2,243.6 | 0.7 | 0.6 | 41.4% | 321.0 | 52,145.1 | 24,967.3 | 27,177.8 | 47.9% |
| 2026 | 5,539.4 | 2,289.8 | 4.4 | 3.5 | 41.3% | 324.3 | 52,777.1 | 25,152.5 | 27,624.7 | 47.7% |
| 2027 | 5,677.3 | 2,331.9 | 8.7 | 6.6 | 41.1% | 329.2 | 53,351.3 | 25,764.9 | 27,586.5 | 48.3% |
| 2028 | 5,827.5 | 2,428.4 | 10.7 | 7.5 | 41.7% | 335.0 | 53,862.7 | 26,414.4 | 27,448.3 | 49.0% |
| 2029 | 5,983.7 | 2,493.3 | 14.2 | 9.4 | 41.7% | 341.3 | 54,312.5 | 27,075.7 | 27,236.7 | 49.9% |
| 2030 | 6,144.3 | 2,556.0 | 17.8 | 11.1 | 41.6% | 347.9 | 54,700.1 | 27,751.4 | 26,948.7 | 50.7% |
| 2031 | 6,311.1 | 2,622.6 | 21.4 | 12.5 | 41.6% | 354.8 | 55,018.4 | 28,443.6 | 26,574.8 | 51.7% |
| 2032 | 6,482.2 | 2,697.0 | 24.8 | 13.6 | 41.6% | 361.8 | 55,271.7 | 29,170.5 | 26,101.2 | 52.8% |
| 2033 | 6,658.2 | 2,779.4 | 28.0 | 14.5 | 41.7% | 369.0 | 55,476.0 | 29,961.2 | 25,514.8 | 54.0% |
| 2034 | 6,842.6 | 2,883.8 | 31.6 | 15.3 | 42.1% | 376.7 | 55,633.3 | 30,847.3 | 24,786.0 | 55.4% |
| 2035 | 7,032.5 | 2,966.1 | 34.9 | 15.9 | 42.2% | 384.6 | 55,744.3 | 31,816.5 | 23,927.9 | 57.1% |
| 2036 | 7,225.8 | 3,049.8 | 38.4 | 16.4 | 42.2% | 392.7 | 55,809.6 | 32,879.8 | 22,929.8 | 58.9% |
| 2037 | 7,424.5 | 3,135.8 | 42.1 | 16.9 | 42.2% | 401.0 | 55,837.2 | 34,057.5 | 21,779.7 | 61.0% |
| 2038 | 7,629.5 | 3,224.6 | 45.9 | 17.3 | 42.3% | 409.6 | 55,829.0 | 35,363.8 | 20,465.2 | 63.3% |
| 2039 | 7,841.2 | 3,316.1 | 50.3 | 17.8 | 42.3% | 418.6 | 55,797.4 | 36,823.7 | 18,973.7 | 66.0% |
| 2040 | 8,060.7 | 3,411.0 | 55.2 | 18.4 | 42.3% | 428.0 | 55,746.9 | 38,454.6 | 17,292.3 | 69.0% |
| 2041 | 8,285.7 | 3,508.2 | 60.8 | 19.0 | 42.3% | 437.7 | 55,697.1 | 40,287.4 | 15,409.7 | 72.3% |
| 2042 | 8,521.2 | 3,609.7 | 67.2 | 19.7 | 42.4% | 448.2 | 55,659.3 | 42,347.4 | 13,311.9 | 76.1% |
| 2043 | 8,765.6 | 3,714.8 | 74.6 | 20.5 | 42.4% | 459.2 | 55,647.5 | 44,663.4 | 10,984.1 | 80.3% |
| 2044 | 9,018.5 | 3,823.4 | 82.9 | 21.4 | 42.4% | 470.7 | 55,670.2 | 47,260.2 | 8,410.0 | 84.9% |
| 2045 | 9,274.2 | 3,933.4 | 91.9 | 22.3 | 42.4% | 482.3 | 55,736.9 | 50,163.2 | 5,573.7 | 90.0% |
| Total | | \$67,378.3 | \$804.4 | \$298.3 | | \$8,815.5 | | | | |

* Includes payroll from Self Managed Plan (SMP)