INDEPENDENT FISCAL OFFICE

November 18, 2019

TO: Governor Tom Wolf
All Members of the General Assembly

FROM: Matthew Knittel, Director
Independent Fiscal Office

RE: Actuarial Note for House Bill 1982, Printer's Number 2787

The Independent Fiscal Office (IFO) submits an actuarial note for **House Bill 1982, Printer's Number 2787** in accordance with section 615-B of the Administrative Code of 1929. Due to the potential material actuarial impact of the bill, the IFO submitted a formal request to its contracted actuary (Milliman) for an actuarial note. A copy of the actuary's note is attached, along with a letter prepared by the State Employees' Retirement System (SERS) in response to a data request made by the IFO on October 30, 2019.

Review of Findings

The bill allows SERS employers to pre-fund their (allocated) unfunded liability. Two attachments to the SERS letter provide output that illustrate the projected impact if the largest eligible employer elected to pre-fund 75 percent of its (allocated) unfunded liability. Highlights of the analysis are as follows:

- As of December 31, 2019, the five largest employers eligible to pre-fund under the bill have an estimated $4.5 billion in unfunded liability. (SERS, page 1.)
- If the largest eligible employer made the minimum pre-funding contribution under the bill (75 percent of unfunded liability), the lump sum amount would be $1.06 billion. (Milliman, page 4.)
- The impact of the pre-funding contribution on the actuarial value of assets and unfunded accrued liability (UAL) will be largest in the first year, and then decline over time as the annual setoffs are reflected. (Milliman, page 4.)
- If all assumptions are met, then SERS will have roughly the same funded ratio and UAL once all annual setoffs are recognized, as compared to a projection without pre-funding. (Milliman, page 4.)
- For the participating employer, the net present value using the current SERS discount rate of 7.125 percent for all future setoffs is equal to the lump sum payment made in the first year. (IFO computation.)

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Bill Summary

The bill amends the State Employees' Retirement Code (Title 71) to allow SERS to enter into an agreement with participating employers that allows employers to make a single lump sum payment of 75 to 100 percent of their portion of the present value of future accrued liability contributions. All employers that participate in SERS would be eligible, but the State Employees' Retirement Board (SERB) would have discretion whether to accept applications for pre-funding on a case-by-case basis.

Major provisions of the bill are as follows:

- The dollar amount of the advance payment would be determined by the SERS actuary and approved by the SERS Board.
- The agreement would establish a schedule of annual setoffs against future contributions of the employer to amortize the lump sum advance payment of the actuarial accrued liability contributions.
- The time period for amortizing the lump sum advance payment cannot exceed the remaining amortization period for any unfunded liability included in the payment plan.
- The agreement would provide a mechanism to credit the setoff against actuarial future contributions on a periodic basis that coincides with the employer's existing schedule for making employer contributions to the system.
- The annual setoff schedule and amounts established in the agreement cannot be changed after the lump sum payment has been made. Lump sum payments also cannot be refunded to the employer.
- If the setoff amount for a given year exceeds the employer's scheduled payment of its actuarial accrued liability contribution, the overpayment will be applied to any supplemental annuity (COLA) contributions that are due or any payments of employer normal cost contributions that are due, or added to future setoffs.
- Employers that participate would remain subject to all changes in employer contribution rates and contribution amounts caused by changes in assumptions, economic and financial factors and actual investment returns. Setoffs would be applied against the changed contribution amounts. Employers must also pay costs incurred by SERS to estimate the lump sum and setoff amounts, and the drafting of the agreement.
- Agreements must be entered into by December 31, 2024, and the lump sum payments must be made by May 1, 2025.
- The bill would take effect immediately.

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November 15, 2019

Mr. Matthew Knittel
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Re: House Bill 1982, Printer's Number 2787

Dear Mr. Knittel:

As requested, we have prepared an actuarial note on House Bill 1982, Printer's Number 2787 (Bill). The Bill would amend the State Employees' Retirement Code to permit employers to make an advance payment of accrued liability contributions to the State Employees' Retirement System (SERS).

Summary of the Bill

The Bill would provide that the Commonwealth and other employers whose employees participate in SERS may make advance payment of accrued liability contributions in a one-time lump sum in return for annual setoffs or credits against future accrued liability contributions, as specified in an agreement between the SERS Board and the head of the employing unit, agency or department. Only one advance payment of accrued liability contributions may be made by each employing unit, agency, or department.

Any money received as a result of a lump sum advance payment shall be part of the general assets of SERS and may not be segregated or invested separately for the account or benefit of the employing unit, agency, or department that made the payment.

The lump sum payment must be between 75% and 100% of the portion of the unfunded actuarial accrued liability allocated to the employing unit, agency, or department as determined by the actuary and approved by the SERS Board.

The agreement must establish a schedule of dollar-denominated annual setoffs against the future contributions of the employing unit, agency or department to amortize the lump sum advance payment of actuarial accrued liability contributions. Such dollar amounts must be consistent with the system's amortization bases that exist as of the determination date as reflected in the latest published actuarial valuation.

After the lump sum payment is made, the annual setoff schedule and amounts established in the agreement cannot be changed except (1) any setoff amount larger than the actual contributions required by the employer that are eligible to be setoff for the fiscal year will be rolled over to the following fiscal year without interest and (2) to reflect any changes in the actuarial cost method made by the General Assembly.

Any agreement must be entered into by December 31, 2024 and any lump sum payment must be made by May 1, 2025. Such lump sum payment cannot be refunded or repaid to the employer.

In addition, the gross employer contribution rate applicable to all participating employers would be determined without regard to any portion of any advance payment of accrued liability contributions made for which an annual setoff has not been credited or recognized in a prior fiscal year.

After the Bill is effective, the costs incurred by the Board, including any fees charged by the System actuary, to estimate or determine the amount of any lump sum payment and annual setoffs for the advance payment of accrued liability contributions of an eligible employer shall be paid by the eligible employer, even if an agreement for an advance payment of accrued liability contribution does not occur.

Discussion of the Bill

The Bill would allow employers to make a lump sum payment to SERS to prefund future required contributions. As the funds for such lump sum payment would likely be raised by issuing debt (e.g. via bonds), not all SERS employers may have the ability to participate as the executive branch and state agencies cannot issue such debt.

Each employer's lump sum payment would result in a specific schedule of annual setoffs, i.e. reductions in future contributions. To the extent that an employer can issue debt that costs less than the future contribution reductions, an employer can potentially reduce its overall cost to fund its pension liability and/or modify the timing of payments depending on how the debt is structured. Any potential savings may be offset (or increased) by future increases (decreases) in pension contributions due to lower (higher) than expected investment performance. Interested employers should carefully analyze the terms of the potential agreement, funding sources, debt repayment options, and the potential risks (primarily investment returns different than anticipated on both SERS and employer assets) prior to entering into an agreement with the Board.

The gross employer contribution rate applicable to all participating employers would not be initially impacted if any prefunding payments are made. Thereafter, the gross employer contribution rate would be impacted to the extent that (1) actual investment return on the market value of assets (which would include any prefunding payments) is different than that assumed and (2) if the investment return assumption is changed. Any investment gains or losses on prior prefunding payments, along with those on the other System assets, would be gradually recognized over time in the actuarial value of assets and the experience adjustment factors. The present value of future annual offsets will increase if the investment return assumption is lowered, resulting in a larger amortization base and a larger gross employer contribution rate (and vice versa).

Due to the change in the normal cost rate determination beginning with the December 31, 2021 valuation, the total unfunded accrued liability will decrease – which would reduce the range of possible required advance payments for agreements effective subsequent to the December 31, 2021 valuation. Interested employers may wish to take this change into consideration when deciding when to enter into an agreement.

Review of Estimated Actuarial Cost

The IFO provided us with a copy of the November 8, 2019 estimate from SERS, which included projections by Korn Ferry Hay Group (Hay). This estimate contained the projected unfunded liability as of December 31, 2019 eligible to be pre-funded for the five largest employers that could do so. The IFO also provided us with a copy of the projections reflecting current law and the reduction in the investment return assumption from 7.25% to 7.125% effective with the December 31, 2019 valuation approved by the SERS Board. Supplemental information was also provided by SERS and Hay.

The cost estimate includes multi-year projections of the employer contribution rate under the current law and if this Bill was enacted. These estimates show the projected appropriation payroll and the employer contribution rate, and the employer contribution amount. These projections are based on the latest actuarial valuation (December 31, 2018), reflect the 7.125% investment return assumption effective December 31, 2019, and assume that future experience will exactly match the actuarial assumptions used to prepare the valuation and projections.

The multi-year projections reflect a single deterministic scenario assuming that all assumptions are exactly realized, including actual investment return on the market value of assets of 7.25% for 2019 and 7.125% thereafter each and every year. In reality, actual investment returns will vary from year to year, which will have an impact on the future employer and member costs.

The projection provided if this Bill is enacted assumed that a prefunding contribution of $1 billion was made by an employer during 2020 with annual setoffs beginning in the 2021-2022 fiscal year. In this projection:

- The employer contribution rate was unchanged from current law.
- The employer contribution amount was reduced beginning in the 2021-2022 fiscal year to reflect the annual setoffs.
- The Actuarial Value of Assets increased, the unfunded accrued liability decreased, and the funded ratio increased due to the prefunding contribution beginning in the 2021-2022 fiscal year. The impact was the largest in the first year and declined over time as the annual setoffs were reflected.
- Assuming that all assumptions are met, the System is expected to have approximately the same funded ratio and the same UAL once all annual setoffs are recognized as compared to the projection without any prefunding. If actual experience is different than expected, the funded ratio and UAL would be different if prefunding occurs.

Allocation of unfunded liability to employers

If this Bill is enacted, the System's total unfunded accrued liability ("UAL") would be allocated to each employer consistent with the methodology used to allocate the GASB 68 Net Pension Liability among SERS participating employers. This methodology determines an employer's allocation percentage based on that employer's expected contributions compared to the total expected employer contributions during the fiscal year containing the UAL valuation date. .

Please note that while this methodology does not necessarily reflect an employer's individual demographics, this is a reasonable allocation of the unfunded accrued liability for the Bill's purpose.

Annual setoff determination

To comply with the Bill's requirements, the annual setoff schedule would be determined based on the amortization payment schedule in the actuarial valuation determining the employer contribution rate for the fiscal year of the first annual offset under the agreement and reflect the percentage of the employer's allocated UAL that is made as a lump sum payment. The present value as of the lump sum payment date of the annual setoffs using the System's investment return assumption would equal the lump sum payment.

Employer contribution rate determination

If this Bill is enacted, the employer contribution rate determination would reflect the following:

- Any investment gains or losses on the advance payment of accrued liability contributions (along with any investment gains or losses on the other assets) would be included in the determination of the Actuarial Value of Assets. There would not be any separate tracking.
- The UAL used to determine the gross employer contribution rate would be increased by the present value of future annual setoffs. The present value of the future annual setoffs would be determined using the investment return assumption in effect as of the respective valuation date.
- No other changes would be made to the current methodology for determining employer contributions to all participating employers. The annual setoffs specified in the agreements for each employer would reduce the contributions for the specific employer.

Any investment gains or losses on the advance payments would be shared among all SERS participating employers. As the asset base would be larger due to the advance payments, the impact of any investment gains or losses would be larger, all else being equal. Thus, all employers, including those who made an advanced lump sum payment, would be subject to higher (or lower) gross contributions if assets return less (or more) than the applicable investment return assumption.

Furthermore, the impact of any change in investment return assumption would impact the present value of the future annual setoffs, resulting in a larger change in the UAL used to determine the employer contribution rate than the change in the accrued liability due to the assumption change. The following table illustrates the change in accrued liability and the impact of the future annual offsets for a 50 basis point increase and decrease in the investment return assumption as of December 31, 2030 for the hypothetical scenario in the November 8, 2019 estimate provided by SERS.

Illustration of Hypothetical 50 basis point change in Investment Return Assumption effective December 31, 2030 for Hypothetical Employer Prefunding Agreement reflected in November 8, 2019 SERS Estimate ($ in millions)			
Investment return assumption	7.125%	7.625%	6.625%
Accrued Liability (AL) as of December 31, 2030 [1]	$53,602	$50,568	$56,818
Present value of future annual offsets (PVAO)	769	748	792
Adjusted Accrued Liability (AAL) as of December 31, 2030	54,371	51,316	57,609
Change in AL		(3,034)	3,216
Change in PVAO		(21)	22
Change in AAL/UAL [2]		(3,055)	3,238

[1] The accrued liability was assumed to decrease by 6% when the investment return assumption was increased from 7.125% to 7.625% and to increase by 6% when the investment return assumption was decreased from 7.125% to 6.625%.
[2] As the Actuarial Value of Assets would not change when the investment return assumption is changed, the change in UAL equals the change in the accrued liability.

As the table illustrates, the change in the UAL that determines the gross employer contribution rate is leveraged higher than the actual change in the accrued liability due to the assumption change. Under this simple example of reducing the investment return assumption from 7.125% to 6.625%, the employer contribution rate would increase an additional 0.02% solely due to the existence of the annual setoffs. The actual impact would be based on the actual prefunding amounts and annual setoffs and the timing and magnitude of the change in the investment return assumption.

Basis for Analysis

In performing this analysis, we have relied on the information provided by the IFO, SERS, and Korn Ferry Hay Group. We have not audited or verified this data and other information. If the data or information is inaccurate or incomplete, the results of this analysis may likewise be inaccurate or incomplete.

We performed a limited review of the projections prepared by Korn Ferry Hay Group as provided by the IFO and SERS for reasonableness and consistency and have not found material defects. If there are material defects, it is possible that they would be uncovered by a detailed, systematic review and comparison to search for values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

Future actuarial measurements may differ significantly from the current measurements presented in this analysis due to actual plan experience deviating from the actuarial assumptions, the natural operation of the plan's actuarial cost method, and changes in plan provisions, actuarial assumptions, actuarial methods, and applicable law. An assessment of the potential range and cost effect of such differences is beyond the scope of this analysis.

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- The IFO may provide a copy of Milliman's work, in its entirety, to its professional service providers who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to provide services to the IFO.
- The IFO may provide a copy of Milliman's work, in its entirety, any applicable regulatory or governmental agency, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. We have not explored any legal issues with respect to the proposed plan changes. We are not attorneys and cannot give legal advice on such issues. We suggest that you review this proposal with counsel.

We are members of the American Academy of Actuaries and meet its Qualification Standards to render this actuarial opinion.

Please let us know if we can provide any additional information regarding this Bill.

Sincerely,

Timothy J. Nugent

Scott F. Porter

Katherine A. Warren

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This analysis was prepared solely for the Pennsylvania Independent Fiscal Office and may not be appropriate for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

Matthew Knittel
Director, Independent Fiscal Office
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November 8, 2019

Dear Matt,

In response to your October 30, 2019, request for information from SERS to assist in the IFO's analysis of H.B. 1982, PN 2787, we are providing the following list of the five largest employers eligible for this pre-funding mechanism, along with the projected unfunded liability eligible to be pre-funded for the requested employers as of 12/31/2019:

Code	Employer	Allocation %	Allocated Unfunded Liability ($ Millions)
786	Pennsylvania State University	5.9%	$1,416
790	State System of Higher Education	4.9%	$1,176
39	Pennsylvania Higher Education Assistance Agency	2.1%	$504
791	Pennsylvania Turnpike Commission	1.9%	$456
757	Administrative Office of Pennsylvania Courts	3.9%	$936

The attached Excel file reflects the potential pre-funding payment by the Pennsylvania State University based on 75% of its allocated unfunded liability. The projection assumes the pre-funding payment would be received during Calendar Year 2020 and first reflected through a pre-funding credit for the contributions due FY 2021/2022. The cells highlighted in yellow show when the amounts are first reflected.

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

Sincerely,

Terrill (Terri) J. Sanchez
Executive Director

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Pennsylvania State Employees' Retirement System

30 Year Projection (7.125%) Reflecting Potential Pre-Funding Arrangement[3/]

($ millions)

Fiscal Year	Calendar Year	Appropriated (Funding) Payroll	Employee Contribution Rate	Employer Unfunded Liability Rate	Employer Contribution to Return Act-5 Savings	Employer Normal Cost/Floor Rate[2/]	Employer Contribution Rate	Employer Contribution Amount	Funded Ratio	Accrued Liability[1/]	Actuarial Value of Assets	Unfunded Accrued Liability
2019/2020	2018	$ 6,469.4	6.25 %	31.57 %	0.71 %	1.25 %	33.53 %	$ 2,178.7	56.0 %	$ 51,782.2	$ 28,989.6	$ 22,792.6
2020/2021	2019	6,657.0	6.25	32.29	0.66	1.41	34.36	2,303.1	54.9	53,222.8	29,220.8	24,002.0
2021/2022	2020	6,850.1	6.25	31.93	0.62	1.41	33.96	2,250.8	57.4	53,831.9	30,875.7	22,956.2
2022/2023	2021	7,048.7	6.25	26.73	0.00	9.16	35.89	2,460.0	62.7	50,304.8	31,516.7	18,788.1
2023/2024	2022	7,253.1	6.25	26.83	0.00	8.90	35.73	2,528.0	62.4	50,851.7	31,755.9	19,095.8
2024/2025	2023	7,463.5	6.25	26.16	0.00	8.65	34.81	2,541.2	63.6	51,401.5	32,712.6	18,688.9
2025/2026	2024	7,679.9	6.25	25.49	0.00	8.41	33.90	2,552.2	64.9	51,911.9	33,693.8	18,218.1
2026/2027	2025	7,902.6	6.25	24.80	0.00	8.19	32.99	2,562.2	66.2	52,360.3	34,670.8	17,689.5
2027/2028	2026	8,131.8	6.25	24.12	0.00	7.97	32.09	2,571.2	67.6	52,749.2	35,644.8	17,104.4
2028/2029	2027	8,367.6	6.25	23.44	0.00	7.76	31.20	2,579.5	69.0	53,062.8	36,599.0	16,463.8
2029/2030	2028	8,610.3	6.25	22.78	0.00	7.56	30.34	2,588.2	70.4	53,303.9	37,529.2	15,774.7
2030/2031	2029	8,860.0	6.25	22.15	0.00	7.37	29.52	2,597.7	71.9	53,469.1	38,434.2	15,034.9
2031/2032	2030	9,116.9	6.25	21.52	0.00	7.19	28.71	2,607.5	73.4	53,601.9	39,360.4	14,241.5
2032/2033	2031	9,381.3	6.25	20.91	0.10	7.02	28.03	2,626.8	75.1	53,675.7	40,284.6	13,391.1
2033/2034	2032	9,653.4	6.25	20.32	0.22	6.85	27.39	2,648.5	76.8	53,696.1	41,220.7	12,475.4
2034/2035	2033	9,933.3	6.25	19.74	0.33	6.68	26.75	2,669.2	78.6	53,681.7	42,197.6	11,484.1
2035/2036	2034	10,221.4	6.25	19.16	0.43	6.52	26.11	2,689.1	80.6	53,626.5	43,214.9	10,411.6
2036/2037	2035	10,517.8	6.25	18.59	0.53	6.38	25.50	2,709.7	82.7	53,534.5	44,280.9	9,253.6
2037/2038	2036	10,822.8	6.25	18.03	0.62	6.24	24.89	2,730.0	85.0	53,426.6	45,421.8	8,004.8
2038/2039	2037	11,136.7	6.25	17.47	0.71	6.12	24.30	2,750.9	87.5	53,256.7	46,597.3	6,659.4
2039/2040	2038	11,459.7	6.25	16.93	0.79	6.00	23.72	2,771.4	90.2	53,055.8	47,844.3	5,211.5
2040/2041	2039	11,792.0	6.25	12.50	0.86	5.89	19.25	2,351.3	93.1	52,808.1	49,153.3	3,654.8
2041/2042	2040	12,134.0	6.25	9.24	0.93	5.79	15.96	2,042.3	95.4	52,740.5	50,318.2	2,422.3
2042/2043	2041	12,485.8	6.25	5.62	0.00	5.69	11.31	1,544.8	97.3	52,551.6	51,123.9	1,427.7
2043/2044	2042	12,847.9	6.25	3.35	0.00	5.60	8.95	1,303.4	98.4	52,256.0	51,441.3	814.7
2044/2045	2043	13,220.5	6.25	3.05	0.00	5.50	8.55	1,293.4	99.1	51,728.2	51,255.2	473.0
2045/2046	2044	13,603.9	6.25	2.67	0.00	5.41	8.08	1,273.1	99.7	50,968.3	50,834.5	133.8
2046/2047	2045	13,998.4	6.25	1.71	0.00	5.32	7.03	1,172.6	100.4	50,089.3	50,281.1	(191.8)
2047/2048	2046	14,404.4	6.25	1.24	0.00	5.25	6.49	1,134.4	100.9	49,121.2	49,543.0	(421.8)
2048/2049	2047	14,822.1	6.25	1.18	0.00	5.18	6.36	1,151.3	101.3	47,970.0	48,580.3	(610.3)
2049/2050	2048	15,251.9	6.25	0.00	0.00	5.11	5.11	1,010.6	101.7	46,621.9	47,430.6	(808.7)

General Note - The contribution projections above are based on fiscal year, valuation information is based on calendar year. Information is for the defined benefit plan only, and is based on an assumed rate of return of 7.125%. SERS lowered its assumed rate to 7.125% in June of 2019. That rate will be effective with the 2019 valuation.

[1/] SERS actuary Korn Ferry is not able to provide projections of present value of future benefits. This is consistent with previous responses to IFO requests. The Present Value of Future Benefits as of the 2018 valuation was $57,106 million.

[2/] SERS has historically calculated normal cost based on a variation of the traditional entry age method but will be transitioning to the traditional entry age method (which is in line with GASB 67 requirements) effective with CY 2021 above. The normal cost for CY 2018,2019 and 2020 above are based on the variation of traditional entry age method. Normal cost for those years under the GASB 67 traditional entry age method are 10.27%, 9.70%, and 9.42%, respectively.

The current composite normal cost for SERS legacy classes of membership is 10.25%. For SERS members hired after January 1, 2019, the normal cost is 17.99% for PA State Police, 8.38% for Hazardous Duty, and 2.38% for all new Act 5 membership classes.

[3/] This projection reflects the potential pre-funding payment of $1,062.8 million during Calendar Year 2020. The pre-funding payment is reflected in the Actuarial Value of Assets as of December 31, 2020. The annual pre-funding credits are reflected as a reduction in the Employer Contribution Amounts beginning in Fiscal Year 2021/2022.

Pennsylvania State Employees' Retirement System

30 Year Projection of Assets (Market Value Basis 7.125%) Reflecting Potential Pre-Funding Arrangement[1/]

($ thousands)

Fiscal Year	Calendar Year	Beginning of Year Market Value	Employer Contributions	Employee Contributions	Investment Income/(Loss)	Benefit Payments	Administrative Expenses	End of Year Market Value
2019/2020	2018							$ 26,934,733
2020/2021	2019	$ 26,934,733	$ 2,137,864	$ 399,900	$ 1,913,733	$ 3,587,954	$ 26,652	27,771,624
2021/2022	2020	27,771,624	3,335,728	409,116	1,941,392	3,702,660	27,385	29,727,815
2022/2023	2021	29,727,815	2,301,936	417,823	2,031,250	3,819,273	28,138	30,631,413
2023/2024	2022	30,631,413	2,351,400	426,716	2,143,554	3,938,912	28,912	31,585,259
2024/2025	2023	31,585,259	2,463,827	435,797	2,211,673	4,055,232	29,707	32,611,617
2025/2026	2024	32,611,617	2,498,571	445,072	2,282,326	4,167,884	30,524	33,639,178
2026/2027	2025	33,639,178	2,504,445	454,544	2,352,303	4,273,233	31,363	34,645,874
2027/2028	2026	34,645,874	2,508,650	464,218	2,420,984	4,371,786	32,226	35,635,714
2028/2029	2027	35,635,714	2,511,703	474,098	2,488,013	4,482,002	33,112	36,594,414
2029/2030	2028	36,594,414	2,513,771	484,188	2,553,073	4,584,379	34,023	37,527,044
2030/2031	2029	37,527,044	2,515,505	494,493	2,616,329	4,685,133	34,958	38,433,280
2031/2032	2030	38,433,280	2,517,676	505,017	2,679,381	4,739,477	35,920	39,359,957
2032/2033	2031	39,359,957	2,520,258	515,765	2,743,059	4,817,709	36,908	40,284,422
2033/2034	2032	40,284,422	2,532,208	526,742	2,807,066	4,891,870	37,922	41,220,646
2034/2035	2033	41,220,646	2,555,851	537,952	2,872,879	4,950,760	38,965	42,197,603
2035/2036	2034	42,197,603	2,581,138	549,401	2,941,478	5,014,703	40,037	43,214,880
2036/2037	2035	43,214,880	2,605,045	561,094	3,013,144	5,072,135	41,138	44,280,890
2037/2038	2036	44,280,890	2,628,836	573,035	3,089,060	5,107,739	42,269	45,421,813
2038/2039	2037	45,421,813	2,652,776	585,231	3,168,744	5,187,833	43,432	46,597,299
2039/2040	2038	46,597,299	2,676,865	597,686	3,252,076	5,234,986	44,626	47,844,314
2040/2041	2039	47,844,314	2,701,000	610,406	3,340,003	5,296,539	45,853	49,153,331
2041/2042	2040	49,153,331	2,507,177	623,397	3,434,581	5,353,143	47,114	50,318,229
2042/2043	2041	50,318,229	2,144,293	636,664	3,499,283	5,426,181	48,410	51,123,878
2043/2044	2042	51,123,878	1,682,906	650,214	3,538,773	5,504,753	49,741	51,441,277
2044/2045	2043	51,441,277	1,246,267	664,052	3,539,664	5,584,926	51,109	51,255,225
2045/2046	2044	51,255,225	1,109,903	678,185	3,513,495	5,669,745	52,514	50,834,549
2046/2047	2045	50,834,549	1,085,894	692,619	3,480,172	5,758,216	53,959	50,281,059
2047/2048	2046	50,281,059	1,017,174	707,359	3,437,435	5,844,577	55,442	49,543,008
2048/2049	2047	49,543,008	938,384	722,414	3,377,425	5,943,917	56,967	48,580,347
2049/2050	2048	48,580,347	918,307	737,788	3,303,500	6,050,800	58,534	47,430,608

General Note - The projections above are based on SERS calendar year-end, include information for the defined benefit plan only, and are based on an assumed rate of return of 7.125%. SERS lowered its assumed rate to 7.125% in June of 2019. That rate will be effective with the 2019 valuation.

[1/] This projection reflects the potential pre-funding payment of $1,062.8 million during Calendar Year 2020. The pre-funding payment is reflected in the Employer Contributions during Calendar Year 2020. The annual pre-funding credits are reflected as a reduction in the Employer Contribution Amounts beginning in Calendar Year 2021.