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Teachers’ Retirement Board
California State Teachers’ Retirement System
P.O. Box 15275
Sacramento, CA 95851

Re: Lump Sum Death Benefit Level

Dear Members of the Board:

Under certain conditions, lump sum death benefits are payable to the beneficiaries of Defined Benefit Program members. The lump sum death benefit levels were established in 1992 without an automatic cost-of-living adjustment. The benefit structure was specifically designed to address the Older Workers' Benefit Protection Act and to be "cost neutral" between Coverage A and Coverage B. An automatic escalation of the lump sum payments was not possible because of the actuarial cost of such a provision. Therefore, the ad hoc approach was developed so that an increase could be granted after each actuarial valuation at the discretion of the Retirement Board. Note that based on our understanding of the CalSTRS Funding Plan, any increases in the lump sum death benefit would have to be funded by state contributions.

At CalSTRS request, we have studied the cost of two potential increases to the lump sum death benefit amount.

Death Benefit

Upon death of an active Coverage A employee or a Coverage A or B retiree, a lump sum death benefit of $6,903 is paid. For active Coverage B members, the lump sum death benefit equals four times the active Coverage A amount, which is equal to $27,612. Coverage B members consist of members hired on or after October 16, 1992 or Coverage A members who elected Coverage B before April 1993.

Findings

Education Code Sections 23801(c), 23851(c), and 23880(b) provide that the Retirement Board "may adjust the death payment amount following each actuarial valuation based on changes in the All Urban California Consumer Price Index." Now that the 2022 Actuarial Valuation of the DB Program report has been issued, the board may consider such an adjustment to these lump sum death benefits.

Since the actuarial valuations are performed as of June 30, but are typically not completed until the following calendar year, the measuring period for inflation ends in December of the valuation year, rather than as of the valuation date.

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As mentioned above, we have studied the expected increase in costs under the two different benefit increase options detailed below. As discussed in this letter, based on our understanding of the CalSTRS Funding Plan, any increases in the lump sum death benefit would be funded by future state contributions.

The applicable death benefit levels were established by statute, effective on October 16, 1992, and changed to the levels shown in the following table by the Retirement Board actions after subsequent actuarial valuations. We also show the calculated level of benefits as of July 2023 for the board's consideration under the two requested options.

			Lump Sum Death Benefit Amounts		
			Retired	Active Members	
Effective Date	Measurement Date	California CPI	Members	Coverage A	Coverage B
Previously Adopted:					
October, 1992	October, 1992	147.5	$ 5,000	$ 5,000	$ 20,000
July, 1995	December, 1993	150.7	$ 5,110	$ 5,110	$ 20,440
January, 1997	December, 1995	154.2	$ 5,227	$ 5,227	$ 20,908
July, 1998	December, 1997	162.0	$ 5,493	$ 5,493	$ 21,974
July, 1999	December, 1998	165.1	$ 5,598	$ 5,598	$ 22,394
July, 2000	December, 1999	170.0	$ 5,763	$ 5,763	$ 23,052
July, 2001	December, 2000	177.3	$ 6,010	$ 6,010	$ 24,040
July, 2002	December, 2001	181.8	$ 6,163	$ 6,163	$ 24,652
July, 2018	December, 2017	265.652	$ 6,372	$ 6,372	$ 25,488
July, 2021	December, 2020	287.367	$ 6,480	$ 6,480	$ 25,920
July, 2022	December, 2021	306.109	$ 6,903	$ 6,903	$ 27,612
Calculated for Consideration					
Option #1 – Full CPI Increase (58.7% Increase)					
July, 2023	December, 2022	323.148	$ 10,954	$ 10,954	$ 43,816
Option #2 – 1-Year CPI Increase (5.6% Increase)					
July, 2023	December, 2022	323.148	$ 7,287	$ 7,287	$ 29,148

The costs for each of the following options are measured on a hypothetical 15-year payment of the increase in the Unfunded Actuarial Obligation (UAO) for active members. A 10-year amortization is used for the increase in UAO attributable to inactive members and retirees. These periods were selected to be consistent with actuarial guidance on amortizing unfunded liabilities due to increases in benefit levels. Please see the discussion on the impact of using a longer amortization period. Note that CalSTRS is targeting a 100% funded ratio by 2046, which means the effective amortization period used for the DB Program calculations is 24 years.

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Option #1 – Full CPI Increase (58.7% Increase in Benefit Amounts)

Under this option, the lump sum death benefit amounts would be increased to reflect the full change in CPI since 1992. The calculated amounts for this option were developed from the following formula:

$$\text{July 2023 Amount} = \$5{,}000 \times \frac{\text{December 2022 CCPI}}{\text{October 1992 CCPI}} = \$5{,}000 \times \frac{323.148}{147.5} = \$10{,}954$$

By convention, the result is rounded to a whole dollar amount and the Coverage B level for active members is set to four times the Coverage A amount. The $10,954 amount represents a 58.7% increase above the current level.

Based on the results of the 2022 Actuarial Valuation of the DB Program, if the board adopts the calculated death benefit levels for current and future retirees, we estimate the total Actuarial Obligation will increase by $632 million, and the level percentage funding rate for the lump sum death benefits will increase by 0.214% of Earned Salaries.

Option #1 – Full CPI Increase (58.7% Increase)			
$Millions	**Before Adjustment**	**Cost of Increase**	**After Adjustment**
Funded Status of DB Program as of June 30, 2022			
Present Value of Benefits	$ 434,247	$ 727	$ 434,974
Present Value of Future Normal Costs	88,158	95	88,253
Actuarial Obligation	$ 346,089	$ 632	$ 346,721
Actuarial Value of Assets	257,537	-	257,537
Unfunded Actuarial Obligation	$ 88,552	$ 632	$ 89,184
Level Percentage Funding Rate for Lump Sum Death Benefits Only(1)			
Normal Cost	0.035 %	0.021 %	0.056 %
Unfunded Actuarial Obligation	0.176 (2)	0.193	0.369 (2)
Total Level Percentage Funding Rate	0.211 %	0.214 %	0.425 %

1. The level percentage funding rate before adjustment is based on a 24-year amortization of the actuarial obligation. The cost of the increase reflects a 15-year amortization of the increase in the active actuarial obligation and a 10-year amortization of the increase in the actuarial obligation for inactive members and retirees.

2. Hypothetical rate assuming no assets allocated to pay lump sum death benefits.

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Option #2 – 1-Year CPI Increase (5.6% Increase in Benefit Amounts)

Under this option, the lump sum death benefit amounts would be increased by 5.6%, the change in CPI between 2021 and 2022. The calculated amounts for this option were developed from the following formula:

$$\text{July 2023 Amount} = \$6{,}903 \times \frac{\text{December 2022 CCPI}}{\text{December 2021 CCPI}} = \$6{,}903 \times \frac{323.148}{306.109} = \$7{,}287$$

Based on the results of the 2022 Actuarial Valuation of the DB Program, if the board adopts the calculated death benefit levels for current and future retirees outlined as Option #2 in this letter, we estimate the total Actuarial Obligation will increase by $60 million, and the level percentage funding rate for the lump sum death benefits will increase by 0.020% of Earned Salaries.

Option #2 – 1-Year CPI Increase (5.6% Increase)			
$Millions	Before Adjustment	Cost of Increase	After Adjustment
Funded Status of DB Program as of June 30, 2022			
Present Value of Benefits	$ 434,247	$ 69	$ 434,316
Present Value of Future Normal Costs	88,158	9	88,167
Actuarial Obligation	$ 346,089	$ 60	$ 346,149
Actuarial Value of Assets	257,537	-	257,537
Unfunded Actuarial Obligation	$ 88,552	$ 60	$ 88,612
Level Percentage Funding Rate for Lump Sum Death Benefits Only(1)			
Normal Cost	0.035 %	0.002 %	0.037 %
Unfunded Actuarial Obligation	0.176 (2)	0.018	0.194 (2)
Total Level Percentage Funding Rate	0.211 %	0.020 %	0.231 %

1. The level percentage funding rate before adjustment is based on a 24-year amortization of the actuarial obligation. The cost of the increase reflects a 15-year amortization of the increase in the active actuarial obligation and a 10-year amortization of the increase in the actuarial obligation for inactive members and retirees.

2. Hypothetical rate assuming no assets allocated to pay lump sum death benefits.

Consideration

Since the law states the board "may" adjust the amounts, the drafters of the legislation clearly did not intend the adjustment to be automatic. By implication, our opinion is that the adjustment should be granted by the Retirement Board only if the System can afford to do so. Based on the 2022 valuation and these actuarial calculations, the adoption of this increase for one year would not significantly change the funded status of the DB Program. This analysis does not consider the impact of the board adopting similar increases each year in the future. If the board continues to adopt increases annually, we recommend that a future study be conducted to estimate the impact.

If the board adopts either one of these proposed lump sum death benefit levels, this cost will ultimately be passed on to the state or employers in the form of higher contributions. The lump sum death benefit, including past increases above $5,000, is treated as a benefit under the 1990 structure, so it is our understanding that the cost of future increases in the lump sum death benefit level would need to be funded by state contributions. The board should consider the comparative value of increasing the lump sum death benefit with the associated increase in costs.

Sensitivity to Assumptions

As noted in this report, the costs are based on the CalSTRS valuation assumptions. To the extent these assumptions are not met, it will affect the ultimate long-term costs, possibly significantly. For example, if the costs were measured using a 6.75% investment return rather than 7.00%, it would increase the UAO for Option 1 by approximately $21 million from $632 million to $653 million, as well as increasing the expected value of benefits to be earned in the future.

Impact of Longer Amortization Period

CalSTRS funds its current UAO over a closed period ending 2046, a longer period than used in this analysis. For comparison, we have shown the level percent funding rate (including both the increased Normal Cost rate and UAO contribution rate) if it were measured over the 24-year period CalSTRS is using to fund its UAO. Note that the length of the amortization period does not impact the estimated present value of the cost in dollar terms, but it does impact the rate at which the increased cost is funded.

	Cost of Increase	
	10-/15-Year Amort	24-Year Amort
Option #1 – Full CPI Increase (58.7% Increase)	0.214%	0.124%
Option #2 – 1-Year CPI Increase (5.6% Increase)	0.020%	0.012%

Risk Discussion

The results of any actuarial valuation or study are based on a set of assumptions. Although we believe the current assumptions provide a reasonable estimate of future expectations, it is almost certain that future experience will differ from the assumptions to some extent. To the extent actual experience varies from the assumptions, this will likely cause either increases or decreases in the plan's future funding level and calculated contribution rates.

In particular, the ultimate cost of increasing the lump sum death benefit level, as discussed in this letter, is highly dependent on how closely actual experience follows the assumptions. If actual demographic experience or future demographic assumptions are different than assumed in this study, then the cost of the lump sum death benefit scenarios may be significantly different than shown in this report.

Examples of factors that can have a significant impact on the study results are:

- Demographic experience (primarily mortality, but also termination, disability, retirement from employment, etc.)
- Investment return
- Payroll variation

Variations in mortality and the investment return assumption are most likely to have the greatest impact on the ultimate cost of the lump sum death benefit.

We have provided a simplified analysis showing the sensitivity to potentially lower investment returns in the Sensitivity to Assumptions section. This analysis shows a future annual investment return of just 0.25% lower than the 7.0% assumption would increase the anticipated cost of the Option 1 increase in the lump sum death benefit by 3% to 4%. Therefore, if future investment returns fall significantly short of 7.0%, this could significantly increase the cost of the various options. Conversely, if investment returns exceed 7.0%, this would reduce the cost.

Risks specific to the DB Program are discussed in Milliman's 2022 DB Program valuation report and the "Review of Funding Level and Risks" produced each fall by CalSTRS actuarial staff. If CalSTRS wants additional analysis on these risks, Milliman can provide a detailed analysis.

Assumptions and Methods

All data, methods and assumptions are the same as those used in our June 30, 2022 Actuarial Valuation of the DB Program, except where noted. Please refer to that report for further details.

It should be noted that we have not made any changes in the demographic assumptions, as it is difficult to anticipate how plan changes will impact participant behavior, but changes in behavior could result. However, we do not expect that increasing the lump sum death benefit would significantly impact member behavior.

Actuarial Certification

The cost estimates presented in this letter reflect the benefit provisions in effect as of June 30, 2022, except where noted. These cost estimates are subject to the uncertainties of a regular actuarial valuation; the costs are inexact because they are based on assumptions that are themselves necessarily inexact, even though we consider them reasonable. Thus, the emerging costs may vary from those presented in this letter to the extent actual experience differs from that projected by the actuarial assumptions.

In preparing the June 30, 2022 actuarial valuation upon which this letter is based, we relied, without audit, on information (oral and in writing) supplied by CalSTRS staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes.

All costs, liabilities, rates of interest, and other factors for CalSTRS have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of CalSTRS and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated CalSTRS experience. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of the Plan and to reasonable expectations which, in combination, represent a reasonable estimate of anticipated experience.

The valuation results were developed using models employing standard actuarial techniques. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice. We have incorporated other sources of economic data in assessing the reasonableness of the assumptions. Reliance on other experts is reflected in Milliman's capital market assumptions, and in Milliman's expected return model maintained by Milliman investment consultants. We have also considered CalSTRS investment policy, capital market assumptions, and expected return model in our assessment of the investment return assumption.

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; and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Teachers' Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the DB Program. The board adopted the actuarial methods and assumptions used in the 2022 valuation as indicated in Appendix B of the June 30, 2022 valuation report for the DB Program.

Actuarial computations presented in this letter are for purposes of determining the estimated cost of increasing the lump sum death benefit. The calculations in this letter have been made on a basis consistent with our understanding of CalSTRS current funding requirements. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this letter. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of CalSTRS. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

(a) CalSTRS may provide a copy of Milliman's work, in its entirety, to CalSTRS professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit CalSTRS.

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(b) CalSTRS may provide a copy of Milliman's work, in its entirety, to other governmental entities, 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 retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct* and *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion* in the United States promulgated by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.

We respectfully submit this letter, and we look forward to discussing it with you. If you have any questions, please contact us.

Sincerely,

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