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Teachers' Retirement Board
CalSTRS
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 included at that time because of the actuarial cost of such a provision. Therefore, the ad hoc approach was developed so that an increase could potentially be granted after each actuarial valuation at the discretion of the Retirement Board.

In March 2024, the CalSTRS board adopted a policy that gives direction on whether (and how much) to increase the lump sum death benefit level each year. At CalSTRS request, we have studied the cost of a potential increase to the lump sum death benefit amount. Note that based on our understanding of the CalSTRS Funding Plan, any increases in the lump sum death benefit would be funded by state contributions.

In this letter, we estimate the cost of an increase in the lump sum death benefit level amount that is consistent with board policy. This estimated cost is based on a one-time increase in the amount and does not reflect any potential increases that may occur subsequently under the board policy. An estimate of the potential cost impact of increases if applied to all future years is discussed in Milliman's February 16, 2024 letter to the board, which was included in the March 2024 board meeting materials.

Death Benefit

Upon the death of an active Coverage A employee or a Coverage A or B retiree, a lump sum death benefit of \$6,903 is currently paid. For active Coverage B members, the lump sum death benefit equals four times the active Coverage A amount (\$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.

Board Policy

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." The CalSTRS board adopted a policy in March 2024 that gives the board direction to increase the death benefit if the current and projected Funded Ratios of the Defined Benefit (DB) Program reflecting the increase under consideration exceed the projected Funded Ratio schedule at the time the Funding Plan was originally implemented (Funded Status Threshold schedule).

Under the policy, inflation is measured as the increase in the California CPI for December of the most recently completed year over December of the prior year. For example, inflation in California for calendar year 2023 will be determined by calculating the increase in the California CPI between December 2022 and December 2023.

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If the actual inflation exceeds the valuation assumption, the calculated increase in the death benefit amount is capped at the valuation assumption. The board policy includes a “catch-up” provision where any portion of the inflation above the valuation assumption is carried forward to be used for future increases in years where inflation is below the valuation assumption. When the actual inflation is less than valuation assumption, the calculated increase in the death benefit amount will be based on the actual inflation plus any additional increases calculated by the “catch-up” provision.

Findings

California CPI increased by 3.48% during the 2023 calendar year, from a December 2022 value of 323.148 to a December 2023 value of 334.395. Since inflation for the prior year exceeded 2.75%, the increase is limited to the current 2.75% valuation assumption. The excess of 0.73% (3.48% less 2.75%) should be added to the catch-up account for future years when inflation is less than the valuation assumption. Assuming the board grants a 2.75% increase in the death benefit amount this year, the cumulative catch-up account is 0.73%, reflecting an adjustment for the current year excess.

Prior Year Catch-Up Account	Current Year CPI Increase	Inflation Assumption	Increase Under Board Policy	Updated Catch-Up Account
(a)	(b)	(c)	(d) = (a)+(b), not greater than (c)	(a)+(b)-(d), not less than 0%
N/A	3.48%	2.75%	2.75%	0.73%

The 2023 DB Program actuarial valuation reports a Funded Ratio of 75.9% which is ahead of the funded status threshold of 68.3% specified in the board policy for 2023. The projected Funded Ratio is ahead of the Funded Status Threshold in all future years and projected to reach a 100% Funded Ratio by 2046. Therefore, all criteria are met and granting an increase in the lump sum death benefit amount equal to 2.75% (the prior year’s inflation not to exceed the 2.75% valuation assumption) is consistent with board policy.

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The following table shows the projected Funded Ratios, assuming the board grants a 2.75% increase in the death benefit amount this year, compared to the Funded Status Threshold in the policy. Potential increases in the death benefit amount in future years are not reflected in the table below. Note that established board practice is to maintain the current state and employer contribution rates until the respective state and employer Unfunded Actuarial Obligations are paid off. Consistent with our valuation projections, we have assumed this approach will continue in the future.

Valuation Date (as of June 30)	Funded Status Threshold (Implementation)	Projected Funded Ratio (2023 Valuation)	Funded Ratio Greater than Threshold
2023	68.3%	75.9%	Yes
2024	69.2%	77.2%	Yes
2025	70.2%	78.6%	Yes
2026	71.1%	79.9%	Yes
2027	72.1%	81.2%	Yes
2028	73.1%	82.6%	Yes
2029	74.2%	84.0%	Yes
2030	75.3%	84.7%	Yes
2031	76.4%	85.5%	Yes
2032	77.5%	86.3%	Yes
2033	78.7%	87.0%	Yes
2034	79.9%	87.9%	Yes
2035	81.2%	88.8%	Yes
2036	82.5%	89.8%	Yes
2037	83.9%	90.9%	Yes
2038	85.3%	92.1%	Yes
2039	86.9%	93.3%	Yes
2040	88.5%	94.7%	Yes
2041	90.1%	96.1%	Yes
2042	91.9%	97.6%	Yes
2043	93.8%	99.1%	Yes
2044	95.7%	100.7%	Yes
2045	97.8%	102.4%	Yes
2046	100.0%	104.1%	Yes

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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 2024 for the board’s consideration assuming a 2.75% increase consistent with board policy.

Effective Date	Measurement Date	Lump Sum Death Benefit Amounts		
		Retired Members	Active Members	
			Coverage A	Coverage B
<u>Previously Adopted:</u>				
October, 1992	October, 1992	\$ 5,000	\$ 5,000	\$ 20,000
July, 1995	December, 1993	\$ 5,110	\$ 5,110	\$ 20,440
January, 1997	December, 1995	\$ 5,227	\$ 5,227	\$ 20,908
July, 1998	December, 1997	\$ 5,493	\$ 5,493	\$ 21,974
July, 1999	December, 1998	\$ 5,598	\$ 5,598	\$ 22,394
July, 2000	December, 1999	\$ 5,763	\$ 5,763	\$ 23,052
July, 2001	December, 2000	\$ 6,010	\$ 6,010	\$ 24,040
July, 2002	December, 2001	\$ 6,163	\$ 6,163	\$ 24,652
July, 2018	December, 2017	\$ 6,372	\$ 6,372	\$ 25,488
July, 2021	December, 2020	\$ 6,480	\$ 6,480	\$ 25,920
July, 2022	December, 2021	\$ 6,903	\$ 6,903	\$ 27,612
<u>Increase Consistent with Board Policy:</u>				
2.75% Increase				
July, 2024	December, 2023	\$ 7,093	\$ 7,093	\$ 28,372

The costs 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 was 23 years in the 2023 Actuarial Valuation.

Board Policy Option – 2.75% Increase

Under this option, the lump sum death benefit amounts would be expected to increase by 2.75%. The calculated amounts for this option were developed from the following formula:

$$\text{July 2024 Amount} = \$6,903 \times 1.0275 = \$7,093$$

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.

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For purposes of this analysis, we have assumed that the lump-sum amount would not be further increased by 2.75% each year as that would be a board decision each year.

Based on the results of the 2023 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 \$31 million, and the level percentage funding rate for the lump sum death benefits will increase by 0.010% of Earned Salaries.

2.75% Increase			
\$Millions	Before Adjustment	Cost of Increase	After Adjustment
Funded Status of DB Program as of June 30, 2023			
Present Value of Benefits	\$ 455,027	\$ 36	\$ 455,063
Present Value of Future Normal Costs	<u>95,286</u>	<u>5</u>	<u>95,291</u>
Actuarial Obligation	\$ 359,741	\$ 31	\$ 359,772
Actuarial Value of Assets	<u>273,155</u>	<u>-</u>	<u>273,155</u>
Unfunded Actuarial Obligation	\$ 86,586	\$ 31	\$ 86,617
Level Percentage Funding Rate for Lump Sum Death Benefits Only⁽¹⁾			
Normal Cost	0.038 %	0.001 %	0.039 %
Unfunded Actuarial Obligation	<u>0.179 ⁽²⁾</u>	<u>0.009</u>	<u>0.188 ⁽²⁾</u>
Total Level Percentage Funding Rate	0.217 %	0.010 %	0.227 %

1. The level percentage funding rate before adjustment is based on a 23-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.

If the board adopts the increase in the lump sum death benefit level, 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 creating an established framework for future increases to the lump sum death benefit with the associated increase in costs.

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Impact of Longer Amortization Period

CalSTRS funds its current Unfunded Actuarial Obligation (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 23-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	23-Year Amort
2.75% Increase	0.010%	0.006%

Risk Discussion

The results of any actuarial valuation or study are based on a set of assumptions. Although we believe the newly adopted assumptions used in this analysis 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:

- Inflation (to the extent the lump sum death benefit level is related to inflation)
- Demographic experience (primarily mortality, but also termination, disability, retirement from employment, etc.)
- Investment return
- Payroll variation

Variations in mortality, inflation and the investment return assumption are most likely to have the greatest impact on the ultimate cost of the lump sum death benefit. For example, a future annual investment return of just 0.25% lower than the 7.0% assumption would increase the anticipated cost of the 2.75% 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 ultimate cost of an increase in the lump sum death benefit amount. Conversely, if investment returns exceed 7.0%, this would reduce the cost.

Risks specific to the DB Program are discussed in Milliman’s 2023 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, 2023 Actuarial Valuation of the DB Program, except where noted. Please refer to that report for further details.

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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, 2023, 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, 2023 actuarial valuation upon which this letter is based, we relied, without audit, on information (some oral and some 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 and are expected to have no significant bias. 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 assumptions and methods to be used in the 2023 valuation as indicated in Appendix A-1 of the 2024 Experience Analysis.

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.

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The consultants who worked on this assignment are 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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Principal and Consulting Actuary

Scott D. Preppernau, FSA, EA, MAAA
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