



1301 Fifth Avenue  
Suite 3800  
Seattle, WA 98101-2605  
USA

Tel +1 206 624 7940  
Fax +1 206 623 3485

milliman.com

March 20, 2014

Teachers' Retirement Board  
CalSTRS

Re: Projection of SBMA Funding Sufficiency

Dear Members of the Board:

The purpose of this letter is to analyze whether the Supplemental Benefits Maintenance Account (SBMA) is projected to have sufficient funds, along with expected future contributions, to pay purchasing power benefits in the future. At the current 85% purchasing power level, the current SBMA account plus expected future contributions are projected to be sufficient to pay all expected benefits through June 30, 2089. Based on the relevant sections of the SBMA code and the regulations adopted by the Board, we recommend that the purchasing power level remain at 85% for payments in the fiscal year beginning July 1, 2014.

### Background

Legislation (AB 1389) was enacted in 2008 that included several changes to the SBMA. Specifically, Sections 22954, 22954.1 and 24415 of the Education Code were amended as follows:

- **Increased Purchasing Power Level** – Previously, the benefits paid from the SBMA maintained the purchasing power of current benefits to at least 80% of the member's original benefit. This was increased to 85%.
- **Flexible Purchasing Power Level** – The Board is now required to adjust the percentage of purchasing power protection maintained by the SBMA within a range of 80% to 85%. Previously the amount was fixed at 80%. This adjustment is based on an actuarial projection adopted by the Board that evaluates the sufficiency of resources available to pay the benefit over a period of time established by the Board. Board regulations regarding the actuarial projection of the SBMA include a period of sufficiency through 2089.
- **Adjustment in State Contributions** – The State appropriation to the SBMA is 2.5% of payroll in the fiscal year preceding the prior calendar year, reduced by \$72,000,000 in fiscal years 2011-12 and later.

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## Results

Using the assumptions discussed in this letter, there are projected to be sufficient funds to pay the SBMA benefits at the 85% level through the fiscal year ending in 2089. Therefore, we recommend that the purchasing power level remain at 85% for payments in the fiscal year beginning July 1, 2014. Our recommendation is based on the relevant sections of the Education Code and the SBMA regulations adopted by the Board.

The projected SBMA funding provides some margin over the expected purchasing power benefits at the 85% level. This margin is approximately equivalent to an additional 5% purchasing power benefit. In other words, the current SBMA balance plus expected future contributions would be projected to be sufficient to pay purchasing power benefits at the 90% level through the fiscal year ending in 2089.

The key provisions of the SBMA, upon which this analysis is based, are that benefits are restored at the 85% level and that the State contributes 2.5% of the two years' prior teachers' payroll (adjusted with reductions as discussed above).

The assumptions which most significantly impact the SBMA are the mortality assumption, the assumed future inflation of 3.00%, the annual investment return of 7.50%, and future annual increases in payroll of 3.75%. These assumptions are consistent with the Defined Benefit (DB) Program, except for the minor adjustment to the mortality assumption discussed in the "Assumptions" section of this letter. If any of these assumptions are changed, it could materially affect our findings.

As an example, whether the actual inflation is greater than or less than assumed is a significant factor on this projection. Under the SBMA program, a rate of inflation that is higher than the 3.00% assumption will result in purchasing power allowances that exceed our projections. On the other hand, a lower-than-expected rate of inflation will result in lower purchasing power allowances. For example, if inflation is 3.00% each year in the future (as currently assumed), the balance in the SBMA would be projected to last forever. If inflation is 3.50% each year in the future and the purchasing power level remained at 85%, the balance in the SBMA is projected to run out in approximately 40 years. Note that if the SBMA were projected to be depleted prior to 2089, a reduction in the purchasing power level would be recommended which would extend the period of sufficiency.

## Additional Analysis

The results are consistent with the previous study in that the current funding level is projected to be sufficient to maintain an 85% purchasing power level. There is more margin this year (5%, as compared with 3% in the last analysis); that is, the SBMA is better funded than in the previous projection. This improvement in the projected funding is mainly due to the fact that actual inflation for the 2011/2012 year was 1.93%, and the actual inflation for the 2012/2013 year was 1.74%, both of which are less than the 3.00% assumption. This resulted in a smaller-than-expected increase in purchasing power benefits.

### Assumptions and Methods

The actuarial assumptions and methods are the same as those used in the June 30, 2013 DB Program valuation, except for the following modifications:

- **New Entrants** – The projection of future purchasing power benefits includes anticipated new active members replacing those active members who are expected to leave active employment each year.
- **Equilibrium** – After 50 years, the population receiving purchasing power benefits is assumed to reach an equilibrium; that is, expected deaths from the group are replaced by the same number of new retirees eligible for the benefit. This is reflected in the projection with an increase in the purchasing power benefits paid of 3.75% each year starting in 50 years. This increase is equivalent to the assumed annual increase in pay and therefore the annual increase in the average DB Program benefit.
- **Mortality Improvement** – After 50 years, the mortality of the retired population is assumed to improve over current levels; that is, retirees and beneficiaries are assumed to live longer. This is reflected in an annual increase in purchasing power benefits of 0.25%, in addition to the 3.75% increase described above.
- **Form of Payment Adjustment** – In the DB Program valuation, all members who have not yet retired are assumed to receive their benefit in the unmodified (member's life only) form upon retirement. Since optional forms are assumed to be reduced on an actuarial equivalent basis, this assumption does not have a material impact on the DB Program valuation. However, this is not true for the actuarial projection of the SBMA. The value of a purchasing power benefit with a survivor continuance and an actuarial reduction made on the basis of the DB Program is usually greater than the value of a purchasing power benefit under the unmodified form. We have increased the projected purchasing power benefits for future retirements by 15.8% to account for the increased value of optional forms of payment. Similar to the DB Program, we have used the actual form of payment elected for current retirees and beneficiaries.
- **School Lands Revenue** – The projection does not assume any additional revenues from school lands in the future. Currently this makes up less than 1% of the total contributions received by the SBMA. If this were included, it would not materially impact the results of the actuarial projection.

### Actuarial Certification

The cost estimates presented in this letter reflect the SBMA benefit provisions in effect as of June 30, 2013 and the actuarial assumptions and methods used in the June 30, 2013 DB Program valuation, except where noted. These projections are subject to the uncertainties of a regular actuarial valuation; the projections 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, 2013 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

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information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

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 experience affecting CalSTRS. 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 under CalSTRS.

Future actuarial measurements may differ significantly from the current measurements presented in this report 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 the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix B of the DB Program valuation report. Modified assumptions specific to this actuarial projection are discussed in the "Assumptions and Methods" section of this letter.

Actuarial computations presented in this letter are for purposes of determining the projected funding sufficiency of the SBMA. The calculations in this letter report 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 product was prepared exclusively for the use or benefit of CalSTRS for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning CalSTRS' operations, and uses CalSTRS' data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. 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. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of my knowledge and belief, this cost study 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 Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the

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applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

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

We respectfully submit the following report, and we look forward to discussing it with you.

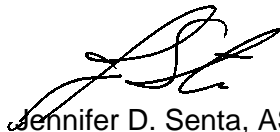
Respectfully submitted,



Nick J. Collier, ASA, EA, MAAA  
Consulting Actuary



Mark C. Olleman, FSA, EA, MAAA  
Consulting Actuary



Jennifer D. Senta, ASA, MAAA  
Consulting Actuary

NJC/MCO/JDS/sat

cc: Mr. Ed Derman  
Mr. Rick Reed