TEACHERS' RETIREMENT BOARD

REGULAR MEETING Item Number: 5d

SUBJECT: Adoption of June 30, 2015 Actuarial Analysis of the Supplemental Benefit Maintenance Account

CONSENT: ___ ATTACHMENT(S): 2

ACTION: _X__ MEETING DATE: April 7, 2016 / *30 mins.*

INFORMATION: __ PRESENTER: Rick Reed/David Lamoureux/Nick Collier, Milliman

PURPOSE

The purpose of this item is to present the June 30, 2015 Supplemental Benefit Maintenance Account (SBMA) Actuarial Analysis and to recommend that the board maintain the purchasing power benefit at 85 percent of the original purchasing power.

SUMMARY

Chapter 751, Statutes of 2008 (AB 1389) was enacted in connection with the Budget Act of 2008. Among its many provisions were those that increased the benefits paid from the SBMA from a level that maintained the purchasing power of current benefits to at least 80 percent of the member's original benefit, to a level that maintains at most 85 percent. The legislation also requires the board to adjust the percentage of purchasing power protection maintained by the SBMA within a range of 80 percent to 85 percent, based on an actuarial analysis adopted by the board that evaluates the sufficiency of resources available to pay the benefit over a period of time established by the board.

In 2009, the board adopted regulations to outline and implement the process to adjust the purchasing power protection provided by SBMA, including the timing and frequency of actuarial projections and adjustments to the target percentage of purchasing power. Under the regulations, an actuarial analysis is performed at least every two years. The last analysis was performed as of June 30, 2013. The actuarial analysis determines, based on the actuarial assumptions, whether the current purchasing power percentage can be maintained over the sustainability period established by the board, and makes a recommendation as to whether the current purchasing power percentage should remain at the current level. The sustainability period adopted by the board is through June 30, 2089.

Milliman has completed an actuarial analysis of the sustainability of the SBMA payments at the current level of 85 percent. The key result of their analysis is that based on the current SBMA provisions, and the actuarial assumptions adopted by the board, there are expected to be sufficient funds to pay the SBMA benefits at the current 85 percent level through June 30, 2089. Milliman projected that the current SBMA balance plus expected contributions would be sufficient to pay purchasing power benefits at a 91 percent level through 2089. Milliman recommends that the purchasing power level remain at 85 percent, the maximum benefit authorized under current law. This level of benefit would continue at least until the results of the next analysis which is scheduled to be the June 30, 2017 analysis. The CalSTRS Consulting Actuary, Nick J. Collier of Milliman is available to answer any questions about the SBMA actuarial analysis.

RECOMMENDATION

Staff recommends that the board adopt Milliman's SBMA actuarial analysis and Milliman's recommendation to maintain purchasing power level at 85 percent until at least the results of the next analysis.

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March 22, 2016

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 Education Code and the SBMA regulations, we recommend that the purchasing power level remain at 85% for payments in the fiscal year beginning July 1, 2016.

Background

Sections 22954, 22954.1, 24415, 24415.5 and 24416 of the Education Code apply to the SBMA and purchasing power benefits:

- **Purchasing Power Level** – The benefits paid from the SBMA maintain the purchasing power of current benefits to at least 80% of the member's original benefit. Currently the purchasing power level is set at 85%.
- **Flexible Purchasing Power Level** – The Board has the authority to adjust the percentage of purchasing power protection maintained by the SBMA within a range of 80% to 85%. 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.
- **State Contributions** – The annual state appropriation to the SBMA is 2.5% of payroll in the fiscal year preceding the prior calendar year, reduced by $72,000,000.

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, 2016. Our recommendation is based on the relevant sections of the Education Code and the SBMA regulations.

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 6% 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 91% 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 by the $72 million discussed above).

Sensitivity to Future Experience

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 3.75% 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.

We used a stochastic model to assess the likelihood of the SBMA paying all benefits at the 85% purchasing power level through 2089. Based on this analysis, there was a 26% probability of the funding being insufficient. This does not factor in the ability of the Board to lower the purchasing power level. Therefore, the probability of insufficiency at the 80% purchasing power would be less than 26%.

Comparison of Resources and Liabilities

Currently the SBMA has a projected funded surplus of $5.6 billion for current DB Program members as of June 30, 2015. That is, the value of the current resources (current assets plus projected future contributions on current member payroll) of $18.0 billion exceeds the projected value of future purchasing power benefits for current members of $12.4 billion. As with the projection of sufficiency, this estimate is based on assumptions, so future results will be sensitive to future experience, in particular future inflation experience.

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 (6%, as compared with 5% in the last analysis); that is, the SBMA is better funded than in the previous projection. The improvement in the projected funding is mainly due to the fact that actual inflation for the 2013-2014 year was 2.19%, and the actual inflation for the 2014-2015 year was 1.28%, 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, 2015 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.
- **Stochastic Model** – The model varies actual inflation in the future, based on a geometric average inflation of 3.0% with an annual standard deviation of 2.0% and an annual reversion to the mean of 25%.

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Actuarial Certification

The cost estimates presented in this letter reflect the SBMA benefit provisions in effect as of June 30, 2015 and the actuarial assumptions and methods used in the June 30, 2015 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, 2015 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. 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 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 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 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:

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(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.

(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 pension 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 letter is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices, including the relevant Actuarial Standards of Practice. 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 this letter and we look forward to discussing it with you.

Sincerely,

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

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

Julie D. Smith, FSA, EA, MAAA
Actuary

NJC/MCO/JDS/nlo

cc: Mr. Ed Derman
Mr. Rick Reed

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PROPOSED
RESOLUTION
OF THE
TEACHERS' RETIREMENT BOARD

SUBJECT: Adoption of SBMA Actuarial Projection for
Fiscal Year beginning July 1, 2016

RESOLUTION No. _____

WHEREAS, Section 22954 of the Education Code authorizes the Teachers' Retirement Board to adopt a periodic actuarial analysis of the Supplemental Benefit Maintenance Account of the California State Teachers' Retirement System; and

WHEREAS, Milliman has performed the necessary actuarial analyses as of June 30, 2015 based on actuarial assumptions adopted by the Teachers' Retirement Board and using the June 30, 2015 assets and the results of the June 30, 2015 Defined Benefit actuarial valuation of the California State Teachers' Retirement System; and

WHEREAS, based on the current Supplemental Benefit Maintenance Account provisions, the actuarial assumptions adopted by the Teachers' Retirement Board and Milliman's actuarial analysis, Milliman has determined that there are expected to be sufficient funds to pay the purchasing power benefits at a 91 percent level through the fiscal year ending in 2089 and recommends that the purchasing power level remain at 85 percent for payments for the fiscal year beginning July 1, 2016; and

WHEREAS, the Teachers' Retirement Board has reviewed the actuarial analysis of the Supplemental Benefit Maintenance Account as presented by Milliman; therefore, be it

RESOLVED that the Teachers' Retirement Board adopts the accompanying actuarial analysis of the Supplemental Benefit Maintenance Account from Milliman, and further

RESOLVED that the Teachers' Retirement Board declares that the purchasing power percentage will remain at 85 percent for purchasing power payments.

Adopted by:
Teachers' Retirement Board
On April 7, 2016

Reviewed by:

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JACK EHNES
Chief Executive Officer

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Brian J. Bartow
General Counsel