Agenda Item 7

March 19, 2013

ITEM NAME: Amortization Periods and Smoothing Methods for Retirement Trust Funds (First Reading)

PROGRAM: Actuarial Office

ITEM TYPE: Action

RECOMMENDATION
Adopt amendments to the following existing actuarial policies as shown in the attachments:

- Board Resolution No. ACT-96-05E (Rev.) regarding amortization and smoothing policies
- Board Resolution No. 05-02-AESD (Rev.) regarding smoothing employer contribution rates
- Board Resolution No. 90-05C (Rev.) regarding actuarial asset valuation method effective with the June 30, 2013, actuarial valuation

Rescind the following actuarial policy:

- Board Resolution No. 05-01-AESD (Rev.) regarding employer rate stabilization policy

EXECUTIVE SUMMARY
This is the first reading of staff's proposal to change the California Public Employees' Retirement System (CalPERS) amortization and smoothing policies. The proposed changes would modify the approach used by CalPERS to achieve smoothing and would shorten smoothing and amortization periods. Currently, smoothing of employer contribution rates is achieved through the use of an asset smoothing method and an actuarial value of assets along with amortization methods. Going forward, staff proposes using a method known as "Direct Rate Smoothing" combined with amortization methods.

Overall, the proposed methods are expected to result in higher volatility in employer contribution rates in normal years but less volatility in employer contribution rates in years where extreme events occur. The proposed methods will result in an increased likelihood of high employer contribution levels in the future. The median employer contribution rate over the next five years is expected to be higher as well. Over time, the proposed methods are also expected to result in improved funding levels and help reduce the overall funding level risk.

This is a first reading; a second reading is scheduled in April for the final adoption of the proposed changes to the smoothing and amortization methods. The proposed changes would impact employer contribution rates for the State plans and the Schools pool in fiscal year 2014-2015 and impact local agencies starting with fiscal year 2015-2016.

STRATEGIC PLAN

This item supports the Strategic Goal A; to improve long-term pension and health benefit sustainability.

BACKGROUND

In October 2011, the Actuarial Office informed members of this Committee that the Actuarial Office would review all Board actuarial policies in a revolving three year cycle. The purpose of these reviews is to recommend changes, if necessary, to ensure all actuarial policies are current, that they are consistent with the Board's fiduciary duties and with CalPERS mission and core values.

Staffs' review comprised four phases. First, staff reviewed the policies regarding funding methods and assumptions. The review was completed in December 2011. Next, staff reviewed policies related to the risk pooling structure. The review was completed in June 2012. In the current phase, staff is reviewing all existing smoothing and amortization policies. A review of policies related to plan termination is scheduled for later this year.

From the mid-1990s through 2004, CalPERS smoothing and amortization methods used shorter asset smoothing periods and shorter amortization periods for actuarial gains and losses. This resulted in large changes in rates from year to year that made it difficult for employers to properly budget for the future. This volatility in employer contribution rates led to a review of smoothing methods in 2003 and 2004 with the goal of reducing volatility by at least 50 percent while still ensuring the preservation/advancement of the funding of the system.

As part of that review, over 34 different possible smoothing alternatives were studied and analyzed. The key criteria used at the time were:

- To minimize the impact on the funded status of the plans
- To minimize the volatility in the employer's contribution
- To minimize the average future employer contribution
- To be consistent with accounting standards

Using these criteria, new methods using longer asset smoothing period, wider actuarial value of assets corridor and longer amortization periods were selected.

Below is a table comparing the methods that were in place prior to 2004 and the methods in place today:

	Pre-2004	**2004 to Present**
Asset Smoothing Period	3 Years (Rolling)	15 Years (Rolling)
Actuarial Value of Assets Corridor	90%-110% of Market Value of Assets	80%-120% of Market Value of Assets
Amortization Period for Gains and Losses	10% each year (equivalent to 13 year rolling amortization)	30 years (Rolling)

The methods adopted in 2004 were selected with the primary goal of reducing volatility in employer contribution rates. For the first few years, the current methods accomplished exactly that goal. Over 70 percent of plans at CalPERS experienced changes in employer contribution rates that were less than 1 percent of payroll each year.

However, in 2008-2009, when CalPERS experienced a negative 24 percent investment return, the current methods were ineffective in reducing employer contribution rate volatility.

The current methods use an actuarial value of assets corridor in combination with asset smoothing. A corridor was necessary due to the fact the asset smoothing period was increased to 15 years. When using an asset smoothing period as long as 15 years, it is necessary to use a corridor for the actuarial value of assets to ensure the proper long term funding of the system. Analysis performed by staff has demonstrated that the use of 15-year smoothing without a corridor would increase the funding risk of the system to an unacceptable level. Not using a corridor with our current 15-year asset smoothing period would also not comply with actuarial standards of practice.

The drawback of having a corridor for the actuarial value of assets is that it leads to additional volatility in years where we experience extreme events. This became apparent in 2008-2009 after the negative 24 percent investment return experience by CalPERS that year.

The loss was so great that the corridor would have prevented smoothing a large portion of the loss and resulted in large increases in employer contribution rates. To avoid these large increases at a time when the economy was having a devastating impact on employers' budgets, the Board approved a temporary widening of the corridor for the actuarial value of assets over a three year period. In effect, the temporary widening of the corridor phased in a significant portion of the 2008-2009 investment loss over a three year period. To compensate for the widening of the corridor and its impact on the long term funding of the system, the Board also approved amortizing the gains and losses during the three year phase-in period over a fixed 30-year period rather than the rolling 30-year period.

ANALYSIS

The Current Smoothing Methods

The smoothing and amortization methods adopted by the Board in 2004 were designed to reduce volatility in employer contribution rates. They have accomplished this goal very well in normal years since their adoption.

However, as was demonstrated in the 2008-2009 fiscal year, the use of an actuarial value of assets corridor can lead to significant amount of volatility in extreme years. This is one drawback of our current method.

The use of an actuarial value of assets also results in the disclosure of two different funded statuses and unfunded liabilities in actuarial valuation reports, which, in some cases, can lead to confusion and misuse even if the report properly explains the difference between the actuarial value of assets and market value of assets. Finding a smoothing method that does not rely on the use of an actuarial value of assets would eliminate this issue.

Another aspect of our existing methods that we would like to improve is that under our current policies, we are making slow (in some cases, very slow) progress toward being fully funded. This is due to our existing methods providing very stable rates in normal years. Furthering the progress toward being fully funded will only come, however, at the expense of additional volatility in rates.

Over the last two years, the Actuarial Office has made several enhancements to the actuarial valuation reports in an effort to increase transparency and provide additional information to all employers to help them budget for future years. The existing smoothing policies do not provide sufficient transparency and make it very difficult for employers to predict when contribution rates will peak even though our valuation reports provide for a five year projection of employer contribution rates. This lack of transparency is a result of the 15-year asset smoothing period currently in use. Even a five-year projection of rates is not long enough to properly display when we expect employer contribution rates to peak.

The last aspect of the existing smoothing methods that we would like to improve upon is the interaction with accounting standards. In June 2012, the Governmental Accounting Standards Board (GASB) issued two new Statements related to the financial reporting of governmental pension plans. The new standards require that a projection be performed for each plan assuming no new hires join the plan and that no contributions come in from new hires as well. If the projection shows that at any time in the future the assets are not sufficient to cover benefit payments under these rules, then the benefit payments from that point forward have to be discounted at a lower discount rate based on interest rates of 20-year municipal bonds. Projections performed on some of the plans at CalPERS have shown that the continued use of our existing smoothing and amortization methods would result in having to use a slightly different discount rate for financial reporting purposes. An analysis of the impact has shown that it would lead to accounting information that is not materially different than the information used for funding purposes. This is likely to lead to additional confusion and will require substantial amount of staff to perform the additional calculations.

Other Methods Being Considered
As part of the review of our current smoothing and amortization methods, we have analyzed our existing method and compared it to four other methods. The methods being compared either use an asset smoothing period along with an actuarial value of assets corridor or direct rate smoothing. The advantage of using a direct rate smoothing method is that the actuarial process uses the market value of assets rather than an actuarial value of assets to set contribution rates. Using a direct rate smoothing approach would result in only one funded status and one unfunded liability being disclosed each year.

Below is a table comparing the methods being considered as part of the review of smoothing and amortization policies.

	Asset Smoothing Period	Actuarial Value of Assets Corridor	Direct Rate Smoothing Period	Amortization Period of Gains and Losses
Current Policy (Method 1)	15 Years (Rolling)	80%-120% of Market Value of Assets	N/A	30 years (Rolling)
Method 2	15 years (Fixed)	80%-120% of Market Value of Assets	N/A	30 Years (Fixed)
Method 3	5 Years (Fixed)	No Corridor	N/A	30 Years (Fixed)
Method 4	N/A	N/A	5 Years	30 Years (Fixed)
Method 5	N/A	N/A	5 Years	25 Years (Fixed)

In selecting methods that could replace the existing one, staff looked for methods that would help avoid large increases in employer contribution rates in extreme years while maintaining volatility in normal years to an acceptable level. Unfortunately, there are no perfect methods. Methods that provide for very stable rates in normal years require the use of an actuarial value of assets corridor which in turn lead to higher volatility in contribution rates in extreme years. Methods that do not use an actuarial value of assets corridor require the use of shorter asset smoothing period and result in more volatility in normal years.

Comparison of Smoothing Methods
The criteria used to evaluate each method are:

- The impact on the preservation/advancement of funded status
- The impact on the estimated volatility of the annual change in employer contribution rates
- The impact on the estimated average employer contribution rate
- The likelihood of high level of employer contribution rates in any given year
- The likelihood of large changes in employer contributions from year to year

To evaluate the five methods, staff selected six plans and performed 1,500 projections for 50 years each based on randomly simulated investment returns. The funded status and expected required employer contributions were estimated for each projection. A summary of the results of these projections and the impact of the five methods being analyzed can be found in attachments to this agenda item.

Attachment 1 compares the five methods and how they impact the funded status over time for each of the six selected plans. The first set of tables in Attachment 1 provide the projected median funded status in 10, 20 and 30 years for 6 different plans. The second set of tables in Attachment 1 provide the probability of each plan falling below a certain funding level once over the next 30 years. For purposes of comparing the five methods, 30 percent funded, 40 percent funded and 50 percent funded were selected for the comparison. As can be seen in Attachment 1, methods 3, 4 and 5, which use a short smoothing period do much better when looking at the impact on the funded status. Method 5 which also uses the shortest amortization of all five methods being analyzed does the best when it comes to improvements in funded status.

Attachment 2 compares the five methods and how they impact the estimated volatility of the employer contribution rates and the estimated average employer contribution rate for each of the six selected plans. The standard deviation of the expected annual change in employer contribution rate was used as a measure of rate volatility. As can be seen in Attachment 2, adopting methods that use shorter smoothing periods would result in slightly more volatility in rates compared to our current method. Method 5, which performed best when looking at funded status, now provides for the most volatility in contribution rates but not by a material difference.

Attachment 3 compares the five methods by looking at the likelihood of seeing high levels of employer contribution rates over the next 30 years. For purposes of comparing the five methods, contribution levels of 30 percent, 35 percent and 40 percent of payroll were selected for the comparison for miscellaneous plans and 50 percent, 55 percent and 60 percent of payroll were selected for safety plans. As can be seen in Attachment 3, the current method provides for the lowest probability of seeing high employer contribution rates. This is expected since the current method used long amortization and smoothing periods as well as relying on rolling rather than fixed periods.

Attachment 4 compares the five methods by looking at the likelihood of seeing large year to year increases in employer contribution rates over the next 30 years. For purposes of comparing the five methods, the likelihood of annual changes in employer contribution rates 3 percent of payroll, 5 percent of payroll and 7 percent of payroll were selected for the comparison for miscellaneous plans and 5 percent, 7 percent and 9 percent of payroll were selected for safety plans. As can be seen in Attachment 4, methods that use an actuarial value of asset corridor in combination with longer asset smoothing period have the highest probability of seeing large increases in contribution rates in a single year. As explained earlier, using an actuarial value of assets corridor makes it difficult to smooth employer contribution rates in extreme events. Methods 3, 4 and 5 have the lowest probabilities of seeing large year to year increases in rates due to the fact they do not require the use of an actuarial value of assets corridor.

Attachment 5 compares how the five methods would impact the employer contribution requirements short term by looking at the median employer contribution rate from the 1,500 projections performed by staff. As can be seen in Attachment 5, methods 3, 4 and 5, which rely on shorter smoothing periods, have a higher median contribution rates over the next five years. Method 5, which also uses the shortest amortization period for gains and losses of all the methods, results, as expected, in the highest median contribution rate short term.

As was illustrated by the results of the projections shown in the various attachments, when smoothing and amortization periods are selected, there is a compromise that must be made between having smooth contribution rates and how quickly a plan gets back to being fully funded. Our current methods do a very good job at keeping contribution rates stable in normal years. However, as shown in the analysis, the current method results in high rate volatility in extreme years and plans make slow progress toward being fully funded.

The decisions before the Board with regards to smoothing and amortization policies are:

- Should we use direct rate smoothing or continue to use asset smoothing

    - If asset smoothing is selected, should an actuarial value of assets corridor be used
- How long should the smoothing period be and should it be fixed or rolling
- How long should the amortization period for gains and losses be and should the amortization fixed or rolling

Staff recommends that the Board adopts a direct rate smoothing method instead of an asset smoothing method. Methods 4 and 5 both use direct rate smoothing to smooth employer contribution rates. This will reduce volatility in employer contribution rates in extreme years.

Staff recommends that the Board adopts a shorter smoothing period over a fixed period rather than rolling as provided by our current method. Methods 4 and 5 both use a five-year smoothing period. This will result in an increase in employer rate volatility in normal years but will improve funding over time.

Staff recommends that the Board adopts a shorter amortization period for gains and losses and that the period be fixed rather than rolling. Methods 4 and 5 both use a fixed period to amortize gains and losses. Method 4 would result in gains and losses to be amortized over 30 years while method 5 has a 25 year period for the amortization of gains and losses. Staff recommends 25 years.

When you combine the direct rate smoothing period with the amortization period, method 4 would result in gains and losses being fully amortized and paid for over a period of 35 years while method 5 would lower that period to 30 years. Under the current methods, because both the 15-year asset smoothing period and the 30-year amortization period are rolling, even after 45 years, gains and losses are not fully funded.

Staff recommends that the Board adopts method 5 to smooth employer contribution rates. Method 4 would be an acceptable alternative to method 5 resulting in a slightly longer time horizon for plans to be fully funded and slightly less volatility in contribution rates compared to method 5.

This is a first reading and a second reading is currently scheduled for April for the final adoption of the proposed changes to smoothing and amortization methods. Once new smoothing and amortization methods are adopted by the Board, these methods will be used for the first time to set employer contribution rates in the June 30, 2013, actuarial valuations that will be performed in 2014. These valuations will be used to set employer contribution rates for fiscal year 2014-2015 for State and School employers and for fiscal year 2015-2016 for local agencies. In the June 30, 2012, valuations that will be prepared this year, Actuarial Office staff will use the new methods for the calculation of the projected employer contribution rates that we provide in our valuation reports to help employer budget for the future.

Review of Policies
As part of the review of current smoothing and amortization methods, staff reviewed all existing policies to determine if any changes would be necessary other than the ones that would be needed if method 5 is adopted by the Board.

Below is a listing of the four existing policies that relate to smoothing and amortization methods. For each policy, we are proposing if necessary changes to ensure these policies are current, that they are consistent with the Board's fiduciary duties and with the CalPERS mission and core values.

Actuarial Policies – Employer Rate Stabilization Policy
Board Resolution No. 05-01-AESD (Rev) regarding the employer rate stabilization policy was adopted by the Board in April 2005. This is an umbrella policy referencing the other actuarial policies being reviewed in this agenda item.

Staff recommends rescinding this policy and combining some of the statements into Board Resolution No. 05-02-AESD (Rev). A copy of the policy can be found in Attachment 6.

Actuarial Policies – Smoothing Employer Contribution Rates
Board Resolution No. 05-02-AESD (Rev.) (Actuarial Policies – Smoothing Employer Contribution Rates) was adopted in April of 2005. This policy lists criteria the Board is to consider when modifying actuarial amortization and smoothing methods. Staff recommends adding two new criteria to the policy related to the likelihood of seeing high contribution rates and seeing large year to year changes in employer contribution rates.

Staff also recommends removing the criteria that smoothing and amortization methods be consistent with generally accepted accounting principles. CalPERS has always had a goal to set contribution requirements for funding purposes that are the same as the contribution requirements employers had to report in their financial statements.

In June 2012, GASB issued new accounting standards related to the financial reporting of governmental pension plans. The new accounting standards include rules that will make it impossible for funding and accounting information to be the same going forward. As a result, staff proposes to remove from the list of criteria the requirement to have smoothing and amortization methods for funding purposes that are consistent with accounting standards.

Finally, we are also proposing minor wording changes to clarify the language of the policy. A copy of the red line version of the proposed policy can be found in Attachment 7.

Actuarial Policies – Actuarial Asset Valuation Method
Board Resolution No. 95-05C (Actuarial Policies – Actuarial Asset Valuation Method) was adopted in December 1998 and amended in April 2005.

As stated above, staff recommends the adoption of a direct rate smoothing method to smooth employer contribution rates rather than continue using an asset smoothing method that relies on an actuarial value of assets. For this reason, we are recommending changes to this policy to state that beginning with the June 30, 2013, actuarial valuations, CalPERS will no longer use an actuarial value of assets to set contribution rates and instead will use the market value of assets along with a direct rate smoothing approach. A copy of the red line version of the proposed policy can be found in Attachment 8.

Actuarial Policies – Amortization & Smoothing Policy
Board Resolution No. ACT-96-05E (Actuarial Policies – Amortization Methods) was adopted in October 1999 and amended in April 2005.

Staff recommends significant changes to this policy to reflect the recommendation to adopt method 5. This method would result in the use of a five-year direct rate smoothing period along with a 25-year amortization period for gains and losses, both over fixed periods of time rather than the rolling periods currently in place today. In addition to the necessary changes to implement method 5, staff is also proposing other changes to the existing policy.

Staff also recommends a change to the amortization method for changes in unfunded liability as a result of either method or actuarial assumption changes. The recommendation is to adopt a direct rate smoothing approach but over a shorter period than for gains and losses. Staff recommends that the impact of method and assumption changes be subject to a five-year direct rate smoothing period with the change in unfunded liability paid within 20 years as is the case with the current methods. Making this change will ensure that when the Board adopts changes in actuarial assumptions that the impact on employer is phased in over five years.

Staff recommends that CalPERS modify its existing amortization policy for one type of benefit improvement. Changes in unfunded liabilities are currently amortized over 20 years and we are not proposing a change except for golden handshakes. Current law allows employers to grant a golden handshake providing up to two years of additional service credit to members that retire within a designated time period. For local agencies, increases in liabilities as a result of a golden handshake are currently amortized and paid for over 20 years for local agencies. For school employers, the amortization period is five years, the longest period allowed by law for school employers. We recommend shortening the time period to five years for golden handshakes for local agencies.

In addition to these changes, staff proposes adding language to the current policy to help actuarial staff handle situations where a plan is closed to new hires and a declining or slower than expected payroll growth can be expected. With the passage of the Public Employees' Pension Reform Act of 2013 (PEPRA) last fall, the situation is expected to become more frequent and continuing to amortize the unfunded liability assuming the payroll of the plan will continue to increase in line with our payroll growth assumption of three percent could lead to insufficient funding for these plans.

A copy of the red line version of the proposed policy can be found in Attachment 9.

BENEFITS/RISKS

The adoption of method 5 will result in better funding of the system over time and will result in a lower probability of large increases in employer contribution rates. Adopting method 5 will result in higher peak contribution rates which may put more strain on employers' budgets.

Not adopting any method changes and keeping our existing methods in place has a higher probability of resulting in large increases in employer contribution rates which will put more strain on employer's budget when the increases will occur. When these large increases in contribution rates occur in the future as a result of an extreme event like 2008-2009, there will be a temptation to avoid the large increase in contribution rates by putting in place temporary measures to mitigate the impact on employer rates. Analysis performed by staff has shown that if every time an extreme event occurs the actuarial value of assets corridor is widened, temporary widening the corridor to reduce the impact on employer contribution rates will increase the risk to the funding of the system. Therefore, staff believes that keeping the current methods in place increases the funding risk of the system.

ATTACHMENTS

Attachment 1 – Impact on Funded Status
Attachment 2 – Impact on Employer Rate Volatility
Attachment 3 – Likelihood of High Contribution Levels
Attachment 4 – Likelihood of Large Year to Year Changes in Contribution Rates
Attachment 5 – Median Employer Contribution Rate for the Next Five Years
Attachment 6 – Actuarial Policy on Employer Rate Stabilization
Attachment 7 – Actuarial Policy on Smoothing Employer Contribution Rates
Attachment 8 – Actuarial Policy on the Actuarial Value of Assets
Attachment 9 – Actuarial Policy on Amortization and Smoothing Methods

____

ALAN MILLIGAN
Chief Actuary
Actuarial Office

____

ANN BOYNTON
Deputy Executive Officer
Benefit Programs Policy and Planning