April 19, 2016

Item Name: State Actuarial Valuation and Employer/Employee Contribution Rates

Program: Actuarial Office

Item Type: Action

Recommendation
Staff recommends that the Board adopt the employer and member contribution rates for the period July 1, 2016 to June 30, 2017 as set forth in the table on page 2 of this agenda item and in Attachment 7.

Executive Summary
The recommended employer contribution rates for the State plans are going to increase from Fiscal Year 2015-16 to Fiscal Year 2016-17, but they are lower than was estimated in the June 30, 2014 annual valuation report. Overall the expected contribution amount for the State plans is estimated to increase by approximately $602.2 million. Note that as per Government Code Section 20683.2, the State is expected to contribute more than the contribution rates being recommended by staff to redirect savings that resulted from increases in member contribution rates. The following table summarizes the results of the valuation across all State plans.

Comparison of Current and Prior Year Results		
	June 30, 2014	June 30, 2015
Market Value of Assets	$ 111,982,394,718	$ 112,532,246,261
Accrued Liability	$ 155,247,428,178	$ 162,091,112,255
Unfunded Accrued Liability	$ 43,265,033,460	$ 49,558,865,994
Expected Employer Contributions based on Actuarially Determined Contribution Rates[1]	$ 4,751,425,458	$ 5,353,642,561
Expected Employer Contributions Including Additional Contributions Pursuant to G.C.Section 20683.2[1]	$ 4,855,191,623	$ 5,462,234,153

As a result of a provision in the Public Employees' Pension Reform Act of 2013 (PEPRA), PEPRA members working for the Legislature, California State University (CSU), or the judicial branch in the State Miscellaneous Tier 1 plan will have their contribution rate increased. The

[1]Expected employer contributions are calculated using the payroll as of the valuation date, incorporating the payroll growth assumption of 3 percent for two years.

member contribution rate for these PEPRA members will be set to 6.75 percent effective July 1, 2016. This is 0.75 percent higher than the current 6.00 percent.

Strategic Plan
This action item is being presented as part of the regular and ongoing workload of the Actuarial Office and supports the Strategic Plan Goal A: Improve long-term pension and health benefit stability.

Background
The five plans included in this valuation provide retirement benefits to members employed by the State of California. This includes employees of the California State University system but generally does not include employees of the University of California system. It also does not cover school employees or employees of local governments that have elected to contract with CalPERS.

This actuarial valuation sets forth the employer and employee contribution rates for the State plans for Fiscal Year July 1, 2016 through June 30, 2017.

Analysis

State Employer Contribution Rates for 2016-17
The Actuarial Office has completed the calculation of the employer contribution rates for the State plans for the Fiscal Year 2016-17. The full actuarial report is expected to be completed this summer and will be provided to the Board and posted online when complete. The additional information provided in the full actuarial report includes details on assumptions, methods, and participant data.

The table below compares the Fiscal Year 2016-17 actuarially required contribution rates and the dollar amounts these rates are anticipated to generate with the rates and contributions for the current Fiscal Year 2015-16.

	Fiscal Year 2015-16		**Fiscal Year 2016-17**	
	Expected Employer Contribution	**Employer Contribution Rate[1]**	**Expected Employer Contribution**	**Employer Contribution Rate[1]**
State Miscellaneous Tier 1	$2,649,621,776	25.068%	$3,010,002,279	26.646%
State Miscellaneous Tier 2	69,272,826	24.389%	68,229,526	26.095%
State Industrial	103,292,663	17.775%	116,880,314	18.365%
State Safety	368,444,080	18.082%	400,378,501	18.753%
State Peace Officers & Firefighters	1,197,159,805	37.338%	1,343,176,739	40.276%
California Highway Patrol	363,634,308	45.406%	414,975,202	48.719%
Total State	**$4,751,425,458**		**$5,353,642,561**	

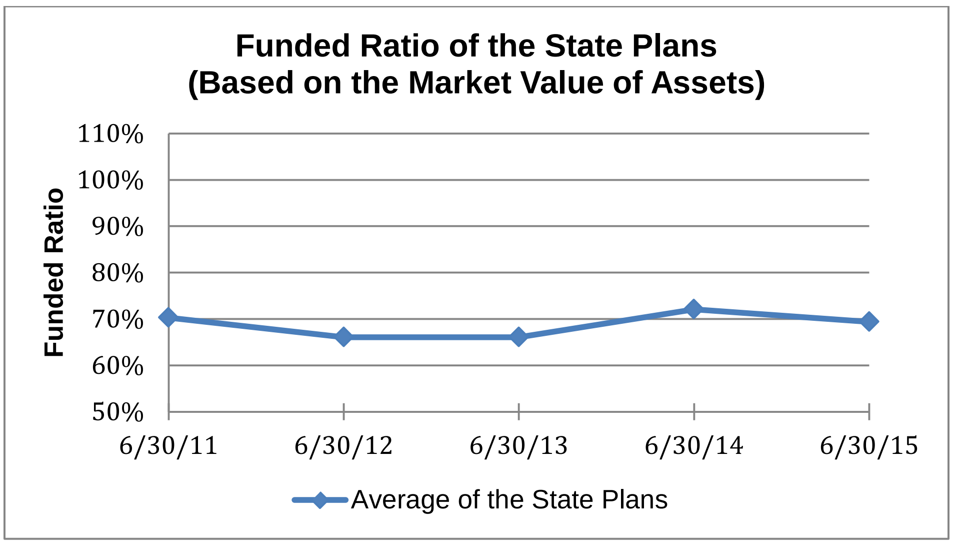
Note that the payroll used to calculate the expected dollar contributions is the payroll used in the valuation incorporating two years of payroll growth using the payroll growth assumption of 3 percent. To the extent that payroll in the contribution year is different than the projected payroll,

[1] Excludes additional contributions pursuant to Government Code Section 20683.2. See page 5 of the agenda item for more information about that requirement.

the actual contribution amounts will be different than the expected contributions shown in the table above. Please refer to Attachment 1 for the development of the employer rate for each plan.

Funded Status

The funded status of a pension plan is defined as the ratio of assets to a plan's accrued liabilities. Plans with a lower funded ratio are, all other things being equal, more at risk of not being able to meet their future benefit obligations. From June 30, 2014 to June 30, 2015 the funded status for the State plans, on average, decreased by 2.7 percent. This was due to the investment return for 2014-15 being less than expected. The graph below shows the average funded status for the past five years for the State plans.



Attachment 2 shows the funded status of the plans using the market value of assets on June 30, 2015 and the funded status for each of the plans for the last five years.

Reasons for Changes in Employer Contributions for the State Plans

Overall, the required contributions for the State plans have increased by $602.2 million between Fiscal Year 2015-16 and Fiscal Year 2016-17. This change is mainly driven by the factors listed below.

In February 2014 the CalPERS Board adopted new demographic actuarial assumptions to be used in the June 30, 2013 actuarial valuation for the State plans. The change in liability due to the new actuarial assumptions was amortized over twenty years and phased in over three years, beginning with the contribution requirement for Fiscal Year 2014-15. The rates for Fiscal Year 2016-17 reflect the impact of the third year of the phase-in of the change in accrued liability due to new actuarial assumptions.

CalPERS employs an amortization and smoothing policy that spreads rate increases or decreases over a 5-year period, and amortizes all experience gains and losses over a fixed 30-year period. This means that only one fifth of the total anticipated rate change caused by each gain or loss is realized in the first year, culminating in the full increase in the fifth year. As a result, the progression of these gain or loss amortization bases will affect contribution levels in increasing measure throughout the ramp period. A complete description of the actuarial methods used in the June 30, 2015 valuation will be shown in the valuation report that is expected to be released this summer.

The total payroll over all State plans increased by 6 percent from the prior year. This is greater than the payroll growth assumption of 3 percent used in our valuation. This is caused by an increase in active counts in many of the plans and also is due to individual salary increases. PEPRA closed the Alternate Retirement Program (ARP) to new entrants effective July 1, 2013. For the June 30, 2015 valuation, the active counts in State Miscellaneous and State Industrial increased due to new entrants hired between July 1, 2014 and June 30, 2015 as well as those who attained two years of service under the ARP.

The Public Employees' Pension Reform Act of 2013 (PEPRA) requires lower benefits for new members as defined by PEPRA, that are hired after January 1, 2013. The normal cost for all of the plans is lower than in the prior year due to the enrollment of new hires into the lower benefit level.

The net return on plan assets for the year ending June 30, 2015 was less than the assumed return of 7.5 percent. This has led to an experience loss that must be amortized with additional contributions over the next 30 years.

The table below highlights all major contributors to the change in required contributions.

Reason for Change	**Change in Required Contribution (millions)**
Third year of phase-in of change in assumptions	$266.7
Change due to normal progression of existing amortization bases	176.4
Change due to increase in overall payroll	109.4
Decrease in normal cost due to new hires in lower benefit level	(33.3)
First installment of the 5-year phased-in 30-year amortization of the following gains and losses:	
• Impact of investment experience	89.5
• Impact of greater than expected contributions received in 2014-15	(5.2)
• Net effect of all other gains and losses	(1.3)
Total Change in Required Contributions	$602.2

Additional Detailed Information
Please refer to Attachment 3 for a reconciliation of employer contribution rates and expected employer contributions.

Attachment 4 shows the development of the accrued and unfunded liabilities as well as the funded ratio.

Additional Contribution Pursuant to G.C. Section 20683.2
One of the provisions of pension reform added Government Code Section 20683.2 which changed the contribution rates of many State members that were effective July 1, 2013, July 1, 2014, and July 1, 2015. Government Code Section 20683.2 also requires that the "savings realized by the state employer as a result of the employee contribution rate increases required by this section shall be allocated to any unfunded liability, subject to appropriation in the annual Budget Act." Under the California Constitution, the Board has "plenary" authority over the actuarial function at CalPERS consistent with the fiduciary duties of a trustee. This includes authority to set employer contribution rates. By statute, the State may pay additional contributions in addition to the actuarially-required contribution rates set by the Board and, of course, CalPERS will generally accept these payments. AB 340 effectively augments the contributions of the State when increased employee contributions result in a savings to the employer.

The table below shows the:

- Actuarially required contributions (these are the rates that staff is recommending that the Board set for the State plans),
- Additional contributions that the State is to make to offset the savings due to the increased member contributions, and
- Total contributions that the State is to make for each plan.

Plan	Actuarially Required Employer Contribution for 2016-17	Additional Statutory Contribution to Offset Increased Member Contributions	Total Contribution 2016-17
State Miscellaneous Tier 1	26.646%	0.082%	26.728%
State Miscellaneous Tier 2	26.095%	0.889%	26.984%
State Industrial	18.365%	0.881%	19.246%
State Safety	18.753%	1.182%	19.935%
State Peace Officers & Firefighters	40.276%	1.647%	41.923%
California Highway Patrol	48.719%	1.319%	50.038%

In all cases, the savings are less than the actual increase in member contributions. This is because the additional member contributions increase the value of the benefit in some circumstances. The obvious example is when the member terminates and takes a refund. A less obvious example is for Tier 2 members where the members are assumed to elect to receive a Tier 1 benefit with an actuarial equivalent reduction to offset the missed Tier 1 contributions. Because the members will make additional contributions, a smaller reduction will apply in the future.

Please refer to Attachment 5 for the expected dollar contributions the additional statutory contribution rates are expected to generate.

PEPRA Member Contribution Rates
With the enactment of PEPRA, new PEPRA members are required to contribute at least 50 percent of the total annual normal cost of their pension benefit as determined by the actuary. As per Government Code Section 7522.30, State employees are excluded from this requirement except for employees of the Legislature, California State University (CSU), and the judicial branch. PEPRA contains a provision that states when the total normal cost has changed by more than 1 percent of payroll the member contribution rate must be adjusted to ensure the member pays half the normal cost. For Fiscal Year 2016-17, the normal cost for State Miscellaneous PEPRA members has changed by more than 1 percent of payroll from the base total normal cost. As a result, the member contribution rate for these PEPRA members will be set to 6.75 percent effective July 1, 2016. This is 0.75 percent higher than the current 6.00 percent.

Please refer to Attachment 6 for a summary of total normal cost by plan by benefit formula and Attachment 7 for details of the member contribution rates for certain PEPRA members.

Expected Future Changes
The amortization and smoothing policy approved by the Board on April 17, 2013 spreads rate increases or decreases over a 5-year period, and amortizes all experience gains and losses over a fixed 30-year period. This inherently builds in future rate changes due to the progression of the amortization schedule. The table below shows the expected cumulative future employer contribution rate changes due to the 5-year phase-in of gains and losses as per the amortization policy. After Fiscal Year 2020-21 no further rate changes are currently projected.

Expected Employer Contribution Rate Change from 2016-17 Due to the Progression of Amortization Bases				
Plan	**2017-18**	**2018-19**	**2019-20**	**2020-21**
State Miscellaneous Tier 1	1.0%	1.9%	2.9%	3.3%
State Miscellaneous Tier 2	1.0%	1.9%	2.9%	3.3%
State Industrial	0.6%	1.3%	1.9%	2.2%
State Safety	0.4%	0.8%	1.1%	1.4%
State Peace Officers and Firefighters	1.2%	2.4%	3.7%	4.3%
California Highway Patrol	1.5%	3.0%	4.5%	5.3%

A more comprehensive projection will be included in the report that will include the expected impacts of the investment return for 2015-16 as well as the anticipated decrease in normal cost due to new hires entering into lower benefit formulas due to PEPRA.

Budget and Fiscal Impacts
Not applicable.

Benefits and Risks

Volatility Ratios
The Actuarial Office presented the Annual Review of Funding Levels and Risks to the Board on November 17, 2015. One of the risk measures identified in that report was the Volatility Ratios (assets/payroll ratio, liability/payroll ratio). Plans that have higher volatility ratios produce more

volatile employer rates due to investment return and changes in liability. The volatility ratios for the plans as of June 30, 2015 are displayed in the table below.

Plan	Market Value of Assets without Receivables	Annual Covered Payroll	Asset Volatility Ratio	Accrued Liability	Liability Volatility Ratio
	(1)	(2)	(1)/(2)	(3)	(3)/(2)
State Miscellaneous	$67,743,769,228	$10,894,384,630	6.2	$97,831,157,779	9.0
State Industrial	2,869,576,652	599,908,510	4.8	3,669,191,968	6.1
State Safety	7,835,225,482	2,012,401,157	3.9	10,255,010,865	5.1
POFF	26,881,891,226	3,143,530,530	8.6	39,393,965,231	12.5
CHP	6,721,056,891	802,876,775	8.4	10,941,786,412	13.6

Additional information about the risks associated with the funding of these plans will be included in the valuation report that is expected to be released this summer.

ATTACHMENTS

Attachment 1 – Development of Employer Contribution Rates
Attachment 2 – Funded Status and History of Funded Status
Attachment 3a – Reconciliation of Employer Contribution Rates
Attachment 3b – Reconciliation of Employer Contributions
Attachment 4 – Development of Accrued and Unfunded Liabilities
Attachment 5 – Additional Contribution Pursuant to G.C. Section 20683.2
Attachment 6 – Normal Cost Chart
Attachment 7 – Development of PEPRA Member Contribution Rates

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