



# ACTUARIAL COST ANALYSIS

## California Public Employees' Pension Reform Act of 2013

### Executive Summary

This is an actuarial cost analysis of the California Public Employees' Pension Reform Act of 2013 (PEPRA). This cost analysis was prepared by CalPERS as part of its preliminary assessment of the PEPRA for the purpose of estimating the cost impact of the proposed benefit changes. It provides estimates only, based on the limited information available to CalPERS at the time it was prepared and the short timeframe which CalPERS had with the draft legislation, and for these reasons the cost analysis is subject to change. It is not intended to be relied upon as a complete analysis of the actuarial impact of the PEPRA. Further, this cost analysis does not attempt to address any design, implementation, administration or legal issues that may exist. It also only attempts to quantify the financial impact for employers whose pension plans are currently administered by CalPERS i.e. the State of California plans, the schools pool for non-teaching school employees and the more than 2,200 local agency plans.

General plan provisions provided by the PEPRA are a 2% at age 62 formula for non-safety members and non-teaching school employees. For safety members, PEPRA provides three formulas: 2% at age 57; 2.5% at age 57; and 2.7% at age 57. PEPRA also requires that final compensation be defined for all new employees as the highest average annual compensation over a three-year period.

PEPRA establishes a cap on the amount of compensation that can be used to calculate a retirement benefit for all new members of a public retirement system equal initially to the Social Security wage index limit for employees who participate in Social Security or 120% of that limit if they do not participate in Social Security.

PEPRA would require all new members to contribute at least 50 percent of the total annual normal cost of their pension benefit as determined by the actuary and aims to have all current members of CalPERS pay at least 50 percent of the total annual normal cost within the next five years.

Overall, PEPRA is expected to generate savings. These savings will gradually occur over time as new employees are hired. Over the next 30 years, the

savings are expected to range between \$42 and \$55 billion for all State, schools and local agency plans.

A very important thing to keep in mind is that reductions in one element of compensation – such as pensions – often results in salary or other compensation increases due to the competitive nature of the workforce. As was pointed out by the Legislative Analysts’ Office recently, if a one-time lowering of compensation occurs by reducing pensions, higher salaries and other benefits probably will need to be offered over the long term. These higher costs will offset an unknown portion of the savings disclosed in this analysis.

**Results and Analysis**

This is an actuarial cost analysis of the California Public Employees’ Pension Reform Act of 2013 (PEPRA). The purpose of this analysis is to provide information regarding the cost impact of the proposed benefit changes.

PEPRA would require that all new public employees in California be covered by one of the four benefit formulas created by PEPRA. PEPRA creates one formula for all miscellaneous (non-safety) members and 3 formulas for safety members as well as requiring all new hires be subject to a benefit based on 3 year final compensation.

The following table summarizes ranges of estimated savings as a percentage of payroll for the various state plans and the schools pool. Please refer to the full analysis below for **important disclosures** on how the estimated savings were derived.

**State Plans and Schools Plan**

<b>Plan</b>	<b>Estimated Employer Normal Cost <sup>1</sup> Savings for New hires</b>
State Miscellaneous (Non-CSU) (77% of current members)	1.1% of payroll
State Miscellaneous (CSU) (23% of current members)	2.6% of payroll
State Industrial	1.3% of payroll
State Safety (60% of current members)	0.6% of payroll
State Safety (40% of current members)	2.7% of payroll
POFF (90% of current members)	1.1% of payroll
POFF (10% of current members)	3.8% of payroll
CHP	2.9% of payroll
Schools	2.6% of payroll

<sup>1</sup> The plan total normal cost is the annual cost of providing benefits for the upcoming fiscal year. The employer normal cost is the employer’s share of the plan total normal cost.

The following table summarizes ranges of estimated savings as a percentage of payroll for the local agency plans broken down by existing benefit formula. These savings reflect only the impact of the new benefit formula provided under PEPRA. The estimated cost savings associated with the requirement that all new hires be subject to 3 year final compensation follows below.

### Local Agency Plans (Formula Change Only)

Current Benefits for New Hires	Estimated Employer Normal Cost Savings for New Hires
<b>Miscellaneous</b>	
2% at Age 60	1.3% of payroll
2% at Age 55	2.5% of payroll
2.5% at Age 55	4.7% of payroll
2.7% at Age 55	5.8% of payroll
3% at Age 60	6.4% of payroll
<b>Safety</b>	
2% at Age 55	0.2% of payroll
2% at Age 50	2.0% of payroll
3% at Age 55	3.9% of payroll
3% at Age 50	6.2% of payroll

The tables below show the proportion of local agency miscellaneous new hires expected in each of the current miscellaneous formulas as well as the proportion of local agency safety new hires expected in each of the current safety formulas.

Miscellaneous Benefit Formula	Percentage of Local Agency Miscellaneous Membership
2% @ 60	16%
2% @ 55	35%
2.5% @ 55	22%
2.7% @ 55	18%
3% @ 60	9%

Safety Benefit Formula	Percentage of Local Agency Safety Membership
2% @ 55	1%
2% @ 50	10%
3% @ 55	37%
3% @ 50	52%

The employer normal cost savings due to reducing the benefit from one-year final compensation to three-year final compensation for miscellaneous plans range from 0.2% to 0.7% of payroll and from 0.4% to 1.0% of payroll for safety plans. Approximately 72% of local agency miscellaneous members and 74% of local agency safety members have one-year final compensation. The breakdown of local agency plans by benefit formula and final compensation was based on information as of June 2012.

The tables below provide the estimated future dollar savings over the next 30 years. See the disclosures about dollar savings in the Results and Analysis section for a description of how the “low” and “high” values were calculated.

## Main Savings<sup>2</sup>

### State Plans

	<b>Estimated Total Dollar Savings Over 30 Years</b>	<b>Estimated Present Value of the Dollar Savings</b>
Low	\$10.3 Billion	\$3.2 Billion
High	\$12.6 Billion	\$3.7 Billion

### Schools Plan

	<b>Estimated Total Dollar Savings Over 30 Years</b>	<b>Estimated Present Value of the Dollar Savings</b>
Low	\$8.6 Billion	\$2.3 Billion
High	\$10.8 Billion	\$2.9 Billion

### Local Agency Plans

	<b>Estimated Total Dollar Savings Over 30 Years</b>	<b>Estimated Present Value of the Dollar Savings</b>
Low	\$24.4 Billion	\$6.5 Billion
High	\$32.4 Billion	\$8.4 Billion

### Total Savings (State, Schools, Local Agency)

	<b>Estimated Total Dollar Savings Over 30 Years</b>	<b>Estimated Present Value of the Dollar Savings</b>
Low	\$43.3 Billion	\$12.0 Billion
High	\$55.8 Billion	\$15.0 Billion

<sup>2</sup> These savings include the effect of benefit formula changes, member contribution rate changes, change to final compensation period and imposition of a compensation cap. Savings due to contribution rate changes reflect contribution applicable to new members for all categories and existing State members. See caveats, methods and assumptions section for more additional information on savings due to contribution changes.

The savings in the tables above reflect savings over a 30-year period. See Attachment 1 for a display of how the estimated dollar savings would emerge over time. Attachment 2 includes a comparison of the current benefits and the proposed benefits for new hires.

### **Other Savings/Costs**

PEPRA implicitly provides for the elimination of the existing Alternate Retirement Program (ARP). The program was implemented by the State of California in 2004 to generate savings. The elimination of this program is expected to reduce the above savings by about \$0.5 billion to \$1 billion over the next 30 years.

PEPRA also provides for an improved industrial disability retirement (IDR) benefit for safety members. This benefit improvement is expected to reduce the above savings by about \$0.5 billion to \$1 billion over the next 30 years.

Under PEPRA, new Judges hired after January 1, 2013 would be required to contribute an additional 6.4% toward their pension benefit in order to contribute 50% of the plan total normal cost. This is expected to generate savings of \$0.6 billion over the next 30 years.

### **Overall Savings**

Overall, taking into account the information provided in the tables above and the other cost increases/savings from the elimination of ARP, the IDR benefit changes and the increase in Judges member contribution, the overall savings over the next 30 years for all employers in CalPERS are expected to be between \$42 and \$55 billion.

### **Caveats, Methods and Assumptions**

This section includes important information about the methods and assumptions used for this actuarial cost analysis of PEPRA. Note that throughout this document, non-safety employees are referred to as miscellaneous employees.

#### **Methods and Assumptions**

The assumptions used in this analysis reflect those in place for the June 30, 2011 actuarial valuations unless noted below.

Generally, lower benefits would tend to increase the average retirement age. Retirement rates were adjusted to reflect this. See Attachment 3 for estimated retirement rates used for the proposed benefit formulas. To the extent the actual retirement experience is different than assumed in this cost analysis, the savings

could be higher or lower than shown in this analysis. All other demographics assumptions such as termination incidence and mortality remained unchanged.

For this analysis, we have assumed the incidence of application for disability retirements would remain unchanged. When retirement benefits are lowered, there is a potential for an increase in the incidence of application for disability retirements. If such increase were to occur, the cost savings presented in this analysis would be lower.

The present value of savings was calculated using a discount rate of 7.5% for all groups except Judges where 7% was used.

The Entry Age Normal Cost actuarial method was used to compare the cost of service accrual (i.e. normal cost) under the proposed benefits and the current benefits in place today. An important feature of this method is that the cost of service accrual is dependent on the age of hire for an employee. Younger hire ages allow for more time to prefund benefits and to accumulate investment earnings. Therefore, the younger the employee is at the time of hire the lower the cost of service accrual.

In performing this analysis, we assumed new hires will have an average age at hire similar to the average age at hire of current employees. We also assumed that all local agencies will behave similar to a sample local agency chosen for purposes of this analysis. Due to the fact that CalPERS administers over 2,200 separate plans for local agencies, actual savings will vary.

Below is a table comparing the average age at hire for the various groups valued in the analysis.

Groups	Average Age at Hire
State Miscellaneous	35
State Industrial	37
State Safety	40
California Peace Officer Fire Fighter (POFF)	30
California Highway Patrol (CHP)	27
Schools	37
Local Agency - Miscellaneous Plan	35
Local Agency - Safety Plan	30

See Attachment 4 for a comparison of the total normal cost for benefits currently applicable to new hires and for the proposed benefits.

The estimated dollar savings figures in this analysis are provided as a range of savings that may be achieved. These are indicated by a low and high savings value. The “low” savings represents the savings using the estimated number of new hires that would be expected if the active population was to remain stable

(0% growth). The “high” savings represents the savings using the estimated number of new hires that would be expected if the active population were to grow by 1% per year.

Calculations for local agency savings due to a benefit reduction from one-year final compensation to three-year final compensation were estimated using the average prevalence of one-year final compensation over all miscellaneous plans and safety plans. Note that the results may differ slightly had the analysis be performed using the prevalence of one-year final compensation by benefit formula.

### **Caveats and Other Information**

In several areas, assumptions were made about how to interpret provisions of PEPRA based on our current understanding and preliminary analysis of the draft legislation. These interpretations may change as we become more familiar with PEPRA and/or if the Legislature makes changes to the current draft. These interpretations can have a significant impact on the estimated savings. The first such interpretation was with respect to the member contribution rate for new member. For this cost analysis, it was assumed that new members will be required to contribute an amount equal to the greater of half the normal cost or the current contribution rate of existing members. If the intent of the legislation is to have new members only pay half the plan total normal cost, it would result in lower member contributions than we have assumed in our estimate and the savings would be reduced by \$13 to \$17 billion.

Another interpretation has to do with whether members contribute on earnings up to the compensation cap or on all of their compensation. It was assumed that members only contribute on earnings up to the cap. If members contribute on all earnings, the savings would be greater than provided in this analysis.

We have not included any savings with respect to the Legislators’ systems. By not including this system, we have understated the savings. Because this system is much smaller than the plans in the PERF, the impact would not be material.

The legislation includes some changes to the State Miscellaneous and Industrial second tier. We have not been able to assess how this will impact the savings that are to be expected. The impact is not expected to be material.

PEPRA targets having both current and new members pay half of the normal cost. For current State employees, the contribution increases are laid out in the legislation and have been included in the estimated savings. This cost analysis does not include any potential savings that would occur over time if current California State University (CSU) employees were to contribute more toward

pension benefits. Note that current CSU members pay less than 50% of the plan total normal cost toward pension benefits. To the extent current CSU employees begin contributing more toward pension, additional savings will occur.

School members (that is, non-teaching school employees) already pay approximately half of the plan total normal cost. Therefore, the requirement for members to pay at least 50% of the plan total normal cost does not result in any savings in respect of school members except to the extent that employers are picking up the member contribution.

For public agency employers the legislation provides the authority to impose contribution increases if collective bargaining has not resulted in members paying at least 50% of the plan total normal cost within five years. We have not included any savings in respect of changes to current member contribution rates for public agency members. To the extent that public agency employers impose higher member contribution rates under this provision for current members, there will be additional savings. We have estimated that, if **all** current local agency member start paying at least 50% of the plan normal cost (but no more than the 8% and 12% of member contribution rate maximum) in 2018, the savings over the next 30 years would amount to about \$1.9 Billion.

PEPRA will provide more flexibility for bargaining increased cost sharing between employers and existing employees. To the extent cost sharing agreements are reached between employees and employers, additional savings will emerge over time.

The legislation includes restrictions on what is included in pensionable compensation. This reflects, and appears to be modeled on, the restrictions on pensionable earnings that were included in the Public Employees' Retirement Law over a decade ago. The focus of these changes appears to be on other retirement systems covered by other laws that do not have these same restrictions. Nevertheless, the wording is not exactly the same and there may be additional restrictions included in the legislation that do not currently exist in the Public Employees' Retirement Law. We have not reviewed or been able to assess the potential impact of any such changes. To the extent that savings are realized as a result of additional restrictions on pensionable compensation, the savings will be greater than quoted in this analysis.

PEPRA permits employers to provide contributions to a defined contribution plan for earnings in excess of the compensation cap. To the extent employers contribute to a defined contribution plan for the excess earnings, the savings shown in this analysis will be less.

PEPRA also calls for the elimination of the Replacement Benefit Fund currently administered by CalPERS and prohibits the creation of any replacement plans in

the future. Due to the compensation cap included in PEPRA, this is not expected to result in any additional savings.

PEPRA prohibits the purchase of non-qualified time (“airtime”) on and after January 1, 2013. Such purchases are currently intended to be cost neutral to employers. The member pays the full present value cost of the additional service credit. That cost is an estimate that includes assumptions with respect to the age at retirement, salary at retirement, age at death, and the retirement system’s investment return. While service purchases on a present value method are not expected to increase employer contributions, they do increase the risk to employer in the form of higher volatility in employer rates if events do not occur as expected. As such, PEPRA would appear to create neither a cost nor savings to the employer. It would however result in a lowering of risk to employers.

## Certification

This actuarial cost analysis was based on the participant, benefits, and asset data used in the June 30, 2011 annual valuations for the State, Schools and Judges plans and June 30, 2010 annual valuation for the local agency plan selected for the analysis, with the exception of the benefits and assumptions that were modified for estimating the impact of the proposed changes in benefits. The valuation has been performed in accordance with standards of practice prescribed by the Actuarial Standards Board, and the assumptions and methods are internally consistent and reasonable for this analysis.



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## ATTACHMENT 1

The table below shows how the estimated dollar savings for the State and School Plans would emerge over the next 30 years beginning July 1, 2013 under the low and high savings scenarios. See the main document for descriptions of these scenarios.

Fiscal Year	State Plans \$ (millions)		School Plan \$ (millions)	
	Low Savings	High Savings	Low Savings	High Savings
2013-2014	\$74.7	\$ 76.7	\$16.1	\$18.2
2014-2015	\$131.9	\$136.2	\$32.2	\$36.5
2015-2016	\$144.8	\$151.6	\$48.5	\$55.3
2016-2017	\$158.0	\$167.6	\$65.4	\$75.0
2017-2018	\$171.8	\$184.4	\$83.0	\$95.6
2018-2019	\$185.8	\$201.7	\$101.2	\$117.0
2019-2020	\$200.2	\$219.6	\$119.8	\$139.1
2020-2021	\$214.9	\$238.2	\$138.8	\$161.9
2021-2022	\$229.9	\$257.3	\$158.2	\$185.2
2022-2023	\$245.4	\$277.3	\$177.8	\$209.1
2023-2024	\$261.2	\$297.8	\$197.5	\$233.4
2024-2025	\$277.4	\$318.9	\$217.5	\$258.2
2025-2026	\$293.6	\$340.5	\$237.5	\$283.4
2026-2027	\$310.2	\$362.8	\$257.5	\$308.9
2027-2028	\$326.9	\$385.6	\$277.5	\$334.7
2028-2029	\$343.7	\$408.9	\$297.5	\$360.8
2029-2030	\$360.9	\$432.8	\$317.2	\$387.1
2030-2031	\$378.1	\$457.2	\$336.8	\$413.5
2031-2032	\$395.5	\$482.3	\$356.3	\$440.2
2032-2033	\$413.2	\$508.0	\$375.6	\$467.2
2033-2034	\$431.0	\$534.3	\$394.8	\$494.5
2034-2035	\$449.0	\$561.4	\$413.9	\$522.1
2035-2036	\$467.2	\$589.1	\$433.0	\$550.1
2036-2037	\$485.6	\$617.5	\$451.9	\$578.5
2037-2038	\$504.1	\$646.5	\$470.9	\$607.4
2038-2039	\$522.9	\$676.4	\$489.8	\$636.8
2039-2040	\$541.8	\$707.0	\$508.8	\$666.8
2040-2041	\$561.0	\$738.5	\$527.9	\$697.4
2041-2042	\$580.4	\$770.9	\$547.0	\$728.6
2042-2043	\$600.0	\$804.1	\$566.2	\$760.5

The table below shows how the estimated dollar savings for local agency plans would emerge over the next 30 years beginning July 1, 2013 under the low and high savings scenarios. See the main document for descriptions of these scenarios.

**Local Agency Plans  
\$ (millions)**

Fiscal Year	Low Savings	High Savings
2013-2014	\$ 43.6	\$ 51.5
2014-2015	\$ 87.9	\$ 104.5
2015-2016	\$ 133.4	\$ 159.6
2016-2017	\$ 180.4	\$ 216.9
2017-2018	\$ 229.0	\$ 276.8
2018-2019	\$ 279.0	\$ 338.9
2019-2020	\$ 330.2	\$ 403.0
2020-2021	\$ 382.3	\$ 468.8
2021-2022	\$ 435.1	\$ 536.3
2022-2023	\$ 488.8	\$ 605.5
2023-2024	\$ 543.1	\$ 676.3
2024-2025	\$ 598.1	\$ 748.7
2025-2026	\$ 653.7	\$ 822.7
2026-2027	\$ 710.0	\$ 898.4
2027-2028	\$ 766.9	\$ 975.9
2028-2029	\$ 824.4	\$1,055.1
2029-2030	\$ 882.4	\$1,136.0
2030-2031	\$ 940.9	\$1,218.6
2031-2032	\$ 999.9	\$1,303.0
2032-2033	\$1,059.6	\$1,389.4
2033-2034	\$1,119.4	\$1,477.2
2034-2035	\$1,179.5	\$1,566.9
2035-2036	\$1,239.5	\$1,657.9
2036-2037	\$1,299.5	\$1,750.6
2037-2038	\$1,359.4	\$1,844.6
2038-2039	\$1,418.8	\$1,939.8
2039-2040	\$1,478.0	\$2,036.5
2040-2041	\$1,536.7	\$2,134.6
2041-2042	\$1,595.0	\$2,234.1
2042-2043	\$1,653.0	\$2,335.2

For local agencies, the timing of the savings remains unclear and could be delayed with the first savings occurring in fiscal year 2015-2016 for some local agencies.

## ATTACHMENT 2

The following tables provide a comparison of the benefits currently in place for new hires and those under the proposed benefit formula for Scenario 2. The table below is for the State Plans and Schools.

Plan	Minimum Retirement	Benefit Multiplier								Final Average Compensation	
	Age	Age 50	Age 52	Age 55	Age 57	Age 60	Age 62	Age 65	Age 67		
<b><u>State Miscellaneous Tier 1</u></b>	Proposed:	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	1.092%	1.224%	1.460%	1.650%	2.000%	2.272%	2.418%	2.418%	3 year
<b><u>State Industrial</u></b>	Proposed:	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	1.092%	1.224%	1.460%	1.650%	2.000%	2.272%	2.418%	2.418%	3 year
<b><u>State Safety (60% of Plan)</u></b>	Proposed	50	1.426%	1.590%	1.836%	2.000%	2.000%	2.000%	2.000%	2.000%	3 year
	Current	50	1.426%	1.628%	2.000%	2.000%	2.000%	2.000%	2.000%	2.000%	3 year
<b><u>State Safety (40% of Plan)</u></b>	Proposed	50	1.426%	1.590%	1.836%	2.000%	2.000%	2.000%	2.000%	2.000%	3 year
	Current	50	1.426%	1.628%	2.000%	2.200%	2.500%	2.500%	2.500%	2.500%	3 year
<b><u>Peace Officers and Firefighters (90% of Plan)</u></b>	Proposed	50	2.000%	2.143%	2.357%	2.500%	2.500%	2.500%	2.500%	2.500%	3 year
	Current	50	2.000%	2.200%	2.500%	2.500%	2.500%	2.500%	2.500%	2.500%	3 year
<b><u>Peace Officers and Firefighters (10% of Plan)</u></b>	Proposed	50	2.000%	2.200%	2.500%	2.700%	2.700%	2.700%	2.700%	2.700%	3 year
	Current	50	2.400%	2.640%	3.000%	3.000%	3.000%	3.000%	3.000%	3.000%	3 year
<b><u>California Highway Patrol</u></b>	Proposed	50	2.000%	2.200%	2.500%	2.700%	2.700%	2.700%	2.700%	2.700%	3 year
	Current	50	2.400%	2.640%	3.000%	3.000%	3.000%	3.000%	3.000%	3.000%	3 year
<b><u>Schools</u></b>	Proposed	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	1.100%	1.460%	2.000%	2.126%	2.314%	2.438%	2.500%	2.500%	1 year

The table below shows a benefit comparison for local agencies.

Local Agency	Minimum Retirement	Benefit Multiplier								Final Average Compensation	
	Age	Age 50	Age 52	Age 55	Age 57	Age 60	Age 62	Age 65	Age 67		
<b><u>Currently 2% @ 60</u></b>	Proposed:	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	1.092%	1.224%	1.460%	1.650%	2.000%	2.272%	2.418%	2.418%	1 or 3 year
<b><u>Currently 2% @ 55 Miscellaneous</u></b>	Proposed:	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	1.426%	1.628%	2.000%	2.104%	2.262%	2.366%	2.418%	2.418%	1 or 3 year
<b><u>Currently 2.5% @ 55</u></b>	Proposed	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	2.000%	2.200%	2.500%	2.500%	2.500%	2.500%	2.500%	2.500%	1 or 3 year
<b><u>Currently 2.7% @ 55</u></b>	Proposed	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	2.000%	2.280%	2.700%	2.700%	2.700%	2.700%	2.700%	2.700%	1 or 3 year
<b><u>Currently 3% @ 60</u></b>	Proposed	52	-	1.000%	1.300%	1.500%	1.800%	2.000%	2.300%	2.500%	3 year
	Current	50	2.000%	2.200%	2.500%	2.700%	3.000%	3.000%	3.000%	3.000%	1 or 3 year
<b><u>Currently 2% @ 55 Safety</u></b>	Proposed	50	1.426%	1.590%	1.836%	2.000%	2.000%	2.000%	2.000%	2.000%	3 year
	Current	50	1.426%	1.628%	2.000%	2.000%	2.000%	2.000%	2.000%	2.000%	1 or 3 year
<b><u>Currently 2% @ 50</u></b>	Proposed	50	2.000%	2.200%	2.500%	2.700%	2.700%	2.700%	2.700%	2.700%	3 year
	Current	50	2.000%	2.280%	2.700%	2.700%	2.700%	2.700%	2.700%	2.700%	1 or 3 year
<b><u>Currently 3% @ 55</u></b>	Proposed	50	2.000%	2.200%	2.500%	2.700%	2.700%	2.700%	2.700%	2.700%	3 year
	Current	50	2.400%	2.640%	3.000%	3.000%	3.000%	3.000%	3.000%	3.000%	1 or 3 year
<b><u>Currently 3% @ 50</u></b>	Proposed	50	2.000%	2.200%	2.500%	2.700%	2.700%	2.700%	2.700%	2.700%	3 year
	Current	50	3.000%	3.000%	3.000%	3.000%	3.000%	3.000%	3.000%	3.000%	1 or 3 year

## ACTUARIAL DISCLOSURE

### **Membership Data**

The membership data used to determine the normal cost analysis is identical to the data used in the June 30, 2011 State and Schools actuarial valuation and data used for a sample of June 30, 2010 Local Agency annual valuations.

### **Actuarial Methods and Assumptions**

The assumptions used in this analysis reflect those in place for the June 30, 2011 actuarial valuations with the exception of the service retirement assumption as noted below.

The service retirement rates were modified to estimate the cost under the proposed benefit formula. Generally, lower benefits would tend to increase the average retirement age. Retirement rates were adjusted to reflect this assumption that to reflect that by reducing the retirement benefits for new hires, these new hires would be expected to work longer before electing to file for service retirement.

To the extent the actual retirement experience is different than assumed in this cost analysis, the savings could be higher or lower than shown in this analysis.

### **Miscellaneous Plans**

New Estimated Assumptions for the Proposed 2% at Age 62 Formula

#### **State Miscellaneous Tier 1**

##### ***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.0126	0.0336	0.0469	0.0574	0.0707	0.0826	0.0952
60	0.0208	0.0560	0.0784	0.0968	0.1184	0.1384	0.1600
65	0.0486	0.1305	0.1836	0.2250	0.2763	0.3231	0.3735
70	0.0500	0.1340	0.1880	0.2310	0.2840	0.3310	0.3830

**State Industrial**

***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.0196	0.0364	0.0567	0.0840	0.0987	0.1050	0.1246
60	0.0304	0.0560	0.0872	0.1296	0.1528	0.1616	0.1920
65	0.0747	0.1377	0.2142	0.3177	0.3744	0.3978	0.4707
70	0.0890	0.1630	0.2540	0.3760	0.4440	0.4720	0.5590

**Schools**

***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.0168	0.0336	0.0469	0.0553	0.0616	0.0693	0.0812
60	0.0296	0.0584	0.0816	0.0968	0.1072	0.1200	0.1408
65	0.0819	0.1620	0.2259	0.2673	0.2979	0.3330	0.3915
70	0.0660	0.1310	0.1830	0.2160	0.2410	0.2700	0.3160

**Public Agencies**

***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
55	0.0440	0.0560	0.0680	0.0800	0.0920	0.1040	0.1160
60	0.0616	0.0784	0.0952	0.1120	0.1288	0.1456	0.1624
65	0.1287	0.1638	0.1989	0.2340	0.2691	0.3042	0.3393
70	0.1254	0.1596	0.1938	0.2280	0.2622	0.2964	0.3306

## **Safety Plans**

New Estimated Assumptions for State Plans and Public Agency Plans

### **CHP – Safety Option Plan 2 (2.7%@57)**

#### ***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0030	0.0030	0.0030	0.0030	0.00924	0.0175	0.0201
52	0.0108	0.0108	0.0108	0.0108	0.03262	0.0618	0.0712
54	0.0242	0.0242	0.0242	0.0242	0.07272	0.1380	0.1590
56	0.0230	0.0230	0.0230	0.0230	0.06910	0.1310	0.1510
58	0.0206	0.0206	0.0206	0.0206	0.06174	0.1170	0.1349
60	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

### **POFF – Safety Option Plan 1 (2.5%@57)**

#### ***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0042	0.0140	0.0189	0.0217	0.0364	0.0574	0.0665
52	0.0056	0.0182	0.0245	0.0287	0.0469	0.0742	0.0861
54	0.0120	0.0405	0.0548	0.0630	0.1043	0.1643	0.1905
56	0.0168	0.0560	0.0752	0.0872	0.1448	0.2272	0.2640
58	0.0180	0.0594	0.0801	0.0927	0.1530	0.2403	0.2790
60	0.0190	0.0637	0.0865	0.0998	0.1653	0.2594	0.3012

### **POFF – Safety Option Plan 2 (2.7%@57)**

#### ***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0042	0.0140	0.0189	0.0217	0.0364	0.0574	0.0665
52	0.0060	0.0195	0.0263	0.0308	0.0503	0.0795	0.0923
54	0.0128	0.0432	0.0584	0.0672	0.1112	0.1752	0.2032
56	0.0179	0.0595	0.0799	0.0927	0.1539	0.2414	0.2805
58	0.0200	0.0660	0.0890	0.1030	0.1700	0.2670	0.3100
60	0.0200	0.0670	0.0910	0.1050	0.1740	0.2730	0.3170

**State Safety – Basic Safety Plan (2%@57)**

***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0102	0.0179	0.0238	0.0281	0.0315	0.0408	0.0485
52	0.0068	0.0119	0.0162	0.0196	0.0213	0.0281	0.0332
54	0.0180	0.0308	0.0413	0.0480	0.0540	0.0698	0.0833
56	0.0285	0.0480	0.0645	0.0758	0.0848	0.1095	0.1305
58	0.0320	0.0544	0.0736	0.0856	0.0960	0.1240	0.1472
60	0.0387	0.0648	0.0882	0.1035	0.1152	0.1494	0.1773

**Public Agencies**

**Safety Option Plan 2 (2.7%@57)**

***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0138	0.0138	0.0138	0.0138	0.0253	0.0451	0.0535
52	0.0249	0.0249	0.0249	0.0249	0.0456	0.0812	0.0963
54	0.0662	0.0662	0.0662	0.0662	0.1211	0.2160	0.2559
56	0.0606	0.0606	0.0606	0.0606	0.1108	0.1975	0.2340
58	0.0628	0.0628	0.0628	0.0628	0.1149	0.2049	0.2427
60	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506	0.2969

**Basic Safety Plan (2%@57)**

***Service Retirement***

Rates vary by age and service. See sample rates in table below.

<b>Attained Age</b>	<b>Years of Service</b>						
	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>
50	0.0110	0.0110	0.0110	0.0110	0.0202	0.0361	0.0428
52	0.0183	0.0183	0.0183	0.0183	0.0336	0.0599	0.0710
54	0.0488	0.0488	0.0488	0.0488	0.0893	0.1592	0.1886
56	0.0447	0.0447	0.0447	0.0447	0.0816	0.1455	0.1724
58	0.0471	0.0471	0.0471	0.0471	0.0862	0.1537	0.1820
60	0.1047	0.1047	0.1047	0.1047	0.1289	0.1880	0.2227

ATTACHMENT 4

The tables below show a comparison of the total normal cost as a percentage of payroll for benefits applicable to current new hires and for the proposed benefits.

	<b>Total Normal Cost for current new hire</b>	<b>Total Normal Cost for proposed benefit</b>
State Misc (Non-CSU) (77% of current members)	13.2%	12.1%
State Misc (CSU) (23% of current members)	13.2%	12.1%
Industrial	15.5%	14.4%
State Safety (60% of current members)	18.2%	18.1%
State Safety (40% of current members)	20.8%	18.1%
POFF (90% of current members)	21.1%	20.8%
POFF (10% of current members)	24.3%	21.8%
CHP	21.6%	19.4%
Schools	14.4%	11.9%

<b>Current Local Agency Benefit Formula</b>	<b>Proposed Local Agency Benefit Formula</b>	<b>Total Normal Cost for current new hire*</b>	<b>Total Normal Cost for proposed benefit</b>
2% at age 60	2% at age 62	13.2%	11.9%
2% at age 55	2% at age 62	14.4%	11.9%
2.5% at age 55	2% at age 62	16.5%	11.9%
2.7% at age 55	2% at age 62	17.7%	11.9%
3% at age 60	2% at age 62	18.3%	11.9%
2% at age 50	2.7% at age 57	21.5%	21.0%
2% at age 55	2.0% at age 57	17.0%	16.8%
3% at age 55	2.7% at age 57	23.4%	21.0%
3% at age 50	2.7% at age 57	25.7%	21.0%

\*Normal Costs for local agencies vary. The normal costs presented above are based on a large local agency.