



California Public Employees' Retirement System
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October 2014

**MISCELLANEOUS PLAN OF THE LOCAL AGENCY FORMATION COMMISSION OF MONTEREY COUNTY
 (CalPERS ID: 7449296272)
 Annual Valuation Report as of June 30, 2013**

Dear Employer,

As an attachment to this letter, you will find a copy of the June 30, 2013 actuarial valuation report of your pension plan. Because this plan is in a risk pool and the CalPERS Board approved structural changes to risk pooling on May 21, 2014 you will notice some changes between your last actuarial report and this one. An overview of the changes to pooling is provided below and we urge you to carefully review the information provided in this report.

Because this plan is in a risk pool, the following valuation report has been separated into two Sections:

- Section 1 contains specific information for your plan, including the development of your pooled employer contributions and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to your plan, as of June 30, 2013.

Section 2 can be found on the CalPERS website at (www.calpers.ca.gov) then select in order "Employers", "Actuarial, Risk Pooling & GASB 27 Information", "Risk Pooling", "Risk Pool Annual Valuation Reports", then select the appropriate pool report.

Your 2013 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your CalPERS staff actuary, whose signature appears in the Actuarial Certification Section on page 1, is available to discuss your report with you after October 31, 2014.

Future Contribution Rates

Fiscal Year	Employer Normal Cost Rate	+	Employer Payment of Unfunded Liability
2015-16	8.512%		\$ 3,958
2016-17 (projected)	8.9%		\$ 4,925

} Assumes 30-yr amortization

The exhibit above displays the Minimum Employer Contributions, before any cost sharing, for 2015-16 along with estimates of the contributions for 2016-17. The estimated contributions for 2016-17 are based on a projection of the most recent information we have available, including an estimated 18.0 percent investment return for fiscal 2013-14, the impact of the new amortization methods adopted by the CalPERS Board in April 2013 that will impact employer rates for the first time in 2015-16 and new actuarial assumptions adopted by the CalPERS Board in February 2014 that will impact rates for the first time in 2016-17. These new demographic assumptions include a 20-year projected improvement in mortality.

A projection of employer contributions beyond 2016-17 can be found in the Risk Analysis Section of this report, **"Analysis of Future Investment Return Scenarios"**, under a variety of investment return scenarios. Please disregard any projections provided to you in the past. Member contributions, other than cost sharing (whether paid by the employer or the employee), are in addition to the above amounts. The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees.

The estimate for 2016-17 also assumes that there are no future contract amendments and no liability gains or losses (such as larger than expected pay increases, more retirements than expected, etc.) This is a very important assumption because these gains and losses do occur and can have a significant effect on your contributions. Even for the largest plans or pools, such **gains and losses can impact the employer's contribution rate by one or two percent of payroll or even more** in some less common circumstances. These gains and losses cannot be predicted in advance so the projected employer contributions are estimates. Your actual employer contributions for 2016-17 **will be provided in next year's valuation report**.

Changes since the Prior Year's Valuation

On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and rate smoothing policies. Beginning with the June 30, 2013 valuations that set the 2015-16 rates, CalPERS will employ an amortization and smoothing policy that will pay for all gains and losses over a fixed 30-year period with the increases or decreases in the rate spread directly over a 5-year period. The impact of this new actuarial methodology is reflected in the **"Analysis of Future Investment Return Scenarios"** subsection of the **"Risk Analysis"** section of your report.

On January 1, **2013, the Public Employees' Pension Reform Act of 2013 (PEPRA) took effect**. In addition to creating new retirement formulas for newly hired members PEPRA also effectively closed all existing active risk pools to new employees. As such it is no longer appropriate to assume that the payroll of the risk pools for the classic formulas will continue to grow at 3 percent annually. Funding the promised pension benefits as a percentage of payroll would lead to the underfunding of the plans. In addition the current allocation of the existing unfunded liabilities based on payroll would create equity issues for employers within the risk pools. Furthermore the declining payroll of the classic formula risk pools will lead to unacceptable levels of employer rate volatility.

In order to address these issues the CalPERS Board of Administration approved at their May 21, 2014 meeting structural changes to the risk pools. All pooled plans will be combined into two active pools, one for all miscellaneous groups and one for all safety groups, effective with the 2013 valuations. By combining the pools this way the payroll of the risk pools and the employers within the pools can once again be expected to increase at the assumed 3 percent annual growth. However two important changes are being made which will affect employers.

1. Beginning with FY 2015-16 CalPERS will collect employer contributions toward your unfunded liability and side fund as dollar amounts instead of the prior method of a contribution rate. This change will address the funding issue that would still arise from the declining population of classic formula members. Although employers will be invoiced at the beginning of the fiscal year for their unfunded liability and side fund

payments the plan's normal cost contribution will continue to be collected as a percentage of payroll.

2. **The pool's unfunded liability will be allocated to each individual plan based on the plan's total liability rather than by plan individual payroll.** This will allow employers to track their own unfunded liability and pay it down faster if they choose. The change in the allocation of unfunded liabilities will result in some employers paying more towards their unfunded liability and some paying less.

On January 1, 2013, the Public Employees' Pension Reform Act of 2013 (PEPRA) took effect. The impact of the PEPRA changes are included in the rates and the benefit provision listings of the June 30, 2013 valuation for the 2015-16 rates. For more information on PEPRA, please refer to the CalPERS website.

In 2014 CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19, 2014 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns. The adopted asset allocation is expected to have a long-term blended return that continues to support a discount rate assumption of 7.5 percent. The Board also approved several changes to the demographic assumptions that more closely align with actual experience. The most significant of these is mortality improvement to acknowledge the greater life expectancies we are seeing in our membership and expected continued improvements. The new actuarial assumptions will be used to set the FY 2016-17 contribution rates for public agency employers. The increase in liability due to new actuarial assumptions will be calculated in the 2014 actuarial valuation and will be amortized over a 20-year period with a 5-year ramp-up/ramp-down in accordance with Board policy.

Besides the above noted changes, there may also be changes specific to your plan such as contract amendments and funding changes.

Further descriptions of general changes are included in the *"Highlights and Executive Summary"* section and in Appendix A, *"Statement of Actuarial Data, Methods and Assumptions"* of your section 2 report. We understand that you might have a number of questions about these results. While we are very interested in discussing these results with your agency, in the interest of allowing us to give every public agency their result, we ask that, you wait until after October 31 to contact us with actuarial related questions.

If you have other questions, please call our customer contact center at (888) CalPERS or (888-**225-7377**).

Sincerely,



ALAN MILLIGAN
Chief Actuary



ACTUARIAL VALUATION

as of June 30, 2013

**for the
MISCELLANEOUS PLAN
of the
LOCAL AGENCY FORMATION COMMISSION
OF MONTEREY COUNTY
(CalPERS ID: 7449296272)**

**REQUIRED CONTRIBUTIONS
FOR FISCAL YEAR
July 1, 2015 - June 30, 2016**

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Section 1

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Plan Specific Information
for the
MISCELLANEOUS PLAN
of the
LOCAL AGENCY FORMATION
COMMISSION OF MONTEREY COUNTY**

**(CalPERS ID: 7449296272)
(Rate Plan: 5580)**

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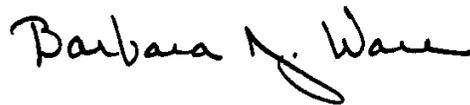
ACTUARIAL CERTIFICATION

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2013 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2013 provided by employers participating in the SAFETY risk pool to which your plan belongs and benefit provisions under the CalPERS contracts for those agencies.

As set forth in Section 2 of this report, the Pool Actuary has certified that, in their opinion, the valuation of the Risk Pool containing your MISCELLANEOUS PLAN has been performed in accordance with generally accepted actuarial principles consistent with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for the Risk Pool as of the date of this valuation and as prescribed by the CalPERS Board of Administration according to provisions set forth in the **California Public Employees' Retirement Law**.

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for your plan, it is my opinion as your Plan Actuary that the Side Fund and other Unfunded Accrued Liability bases as of June 30, 2013 and employer contribution rate as of July 1, 2015, have been properly and accurately determined in accordance with the principles and standards stated above.

The undersigned is an actuary for CalPERS, who is a member of both the American Academy of Actuaries and Society of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



BARBARA J. WARE, FSA, MAAA
Enrolled Actuary
Senior Pension Actuary, CalPERS
Plan Actuary

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HIGHLIGHTS AND EXECUTIVE SUMMARY

- **INTRODUCTION**
- **PURPOSE OF SECTION 1**
- **REQUIRED EMPLOYER CONTRIBUTION**
- **PLAN'S FUNDED STATUS**
- **PROJECTED CONTRIBUTIONS**

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Introduction

This report presents the results of the June 30, 2013 actuarial valuation of the MISCELLANEOUS PLAN of the LOCAL AGENCY FORMATION COMMISSION OF MONTEREY COUNTY of the **California Public Employees' Retirement System (CalPERS)**. This actuarial valuation was used to set the 2015-16 required employer contribution rates.

On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and rate smoothing policies. Beginning with the June 30, 2013 valuations that set the 2015-16 rates, CalPERS will employ an amortization and smoothing policy that will pay for all gains and losses over a fixed 30-year period with the increases or decreases in the rate spread directly over a 5-year period. The impact of this new actuarial methodology is reflected in the *"Analysis of Future Investment Return Scenarios"* subsection of the *"Risk Analysis"* section of your report.

On January 1, 2013, the Public Employees' Pension Reform Act of 2013 (PEPRA) took effect. In addition to creating new retirement formulas for newly hired members PEPRA also effectively closed all existing active risk pools to new employees. As such it is no longer appropriate to assume that the payroll of the risk pools for the classic formulas will continue to grow at 3 percent annually. Funding the promised pension benefits as a percentage of payroll would lead to the underfunding of the plans. In addition the current allocation of the existing unfunded liabilities based on payroll would create equity issues for employers within the risk pools. Furthermore the declining payroll of the classic formula risk pools will lead to unacceptable levels of employer rate volatility.

In order to address these issues the CalPERS Board of Administration approved at their May 21, 2014 meeting structural changes to the risk pools. All pooled plans will be combined into two active pools, one for all miscellaneous groups and one for all safety groups, effective with the 2013 valuations. By combining the pools this way the payroll of the risk pools and the employers within the pools can once again be expected to increase at the assumed 3 percent annual growth. However two important changes are being made which will affect employers.

1. Beginning with FY 2015-16 CalPERS will collect employer contributions toward your unfunded liability and side fund as dollar amounts instead of the prior method of a contribution rate. This change will address the funding issue that would still arise from the declining population of classic formula members. Although employers will be invoiced at the beginning of the fiscal year for their **unfunded liability and side fund payments the plan's normal cost contribution will continue to** be collected as a percentage of payroll.
2. **The pool's unfunded liability will be allocated to each individual plan based on the plan's total** liability rather than by the plan's individual payroll. This will allow employers to track their own unfunded liability and pay it down faster if they choose. The change in the allocation of unfunded liabilities will result in some employers paying more towards their unfunded liability and some paying less.

The impact of most of the PEPRA changes will first show up in the rates and the benefit provision listings of the June 30, 2013 valuation that sets the contribution rates for the 2015-16 fiscal year. For more detailed information on changes due to PEPRA, please refer to the CalPERS website.

In 2014 CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19, 2014 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns (see Appendix). The adopted asset allocation is expected to have a long-term blended return that continues to support a discount rate assumption of 7.5 percent. The Board also approved several changes to the demographic assumptions that more closely align with actual experience. The most significant of these is mortality improvement to acknowledge the greater life expectancies we are seeing in our membership and expected continued improvements. The new actuarial assumptions will be used to set the FY 2016-17 contribution rates for public agency employers. The increase in liability due to new actuarial assumptions will be calculated in the 2014 actuarial valuation and will be amortized over a 20-year period with a 5-year ramp-up/ramp-down in accordance with Board policy.

Purpose of Section 1

This section 1 report for the MISCELLANEOUS PLAN of the LOCAL AGENCY FORMATION COMMISSION OF MONTEREY COUNTY of the California Public Employees' Retirement System (CalPERS) was prepared by the Plan Actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2013;
- Determine the required employer contribution for this plan for the fiscal year July 1, 2015 through June 30, 2016;
- Provide actuarial information as of June 30, 2013 to the CalPERS Board of Administration and other interested parties; and
- Provide pension information as of June 30, 2013 to be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement Number 27 for a Cost Sharing Multiple Employer Defined Benefit Pension Plan.

The use of this report for any other purposes may be inappropriate. In particular, this report does not contain information applicable to alternative benefit costs. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 12.

Additionally, this report includes **the following "Enhanced Risk Disclosures"** also recommended by the CAAP in the Model Disclosure Elements document:

- A **"Deterministic Stress Test,"** projecting future results under different investment income scenarios
- A **"Sensitivity Analysis,"** showing the impact on current valuation results using a 1 percent plus or minus change in the discount rate.

Required Employer Contribution

Actuarially Determined Employer Contributions:	Fiscal Year 2014-15¹	Fiscal Year 2015-16
Employer Contributions (in Projected Dollars)		
Plan's Employer Normal Cost	\$ 21,395	\$ 21,884
Plan's Payment on Amortization Bases	8,772	3,958 ²
Surcharge for Class 1 Benefits ³		
a) FAC 1	1,340	1,392
Phase out of Normal Cost Difference ⁴	0	0
Amortization of Side Fund	0	0
Total Employer Contribution	\$ 31,507	\$ 27,234
Projected Payroll for the Contribution Fiscal Year	\$ 273,453	\$ 273,453
Required Employer Contributions (Percentage of Payroll)		
Plan's Net Employer Normal Cost	7.824%	8.003%
Plan's Payment on Amortization Bases	3.208%	1.447% ²
Surcharge for Class 1 Benefits ³		
a) FAC 1	0.490%	0.509%
Phase out of Normal Cost Difference ⁴	0.000%	0.000%
Amortization of Side Fund	0.000%	0.000%
Total Employer Contribution Rate	11.522%	9.959%

Required Employer Contribution for FY 2015-16	
Employer Contribution Rate⁵	8.512%
Plus Monthly Employer Dollar UAL Payment⁶	\$ 330
Annual Lump Sum Prepayment Option	\$ 3,817
<p><i>For FY 2015-16 the total minimum required employer contribution is the sum of the Plan's Employer Contribution Rate (expressed as a percentage of payroll) plus the Employer Unfunded Accrued Liability (UAL) Contribution Amount (in dollars). Whereas in prior years it was possible to prepay total employer contributions for the fiscal year, beginning with FY 2015-16 and beyond, only the UAL portion of the employer contribution can be prepaid.</i></p>	

¹ The results shown for FY 2014-15 reflect the prior year valuation and do not reflect any lump sum payment, side fund payoff or rate adjustment made after annual valuation report is completed.

² For FY 2015-16 the **Plan's Payment on Amortization Bases** reflects the sum of all UAL amortization bases including the **Plan's Side Fund** (where applicable).

³ Section 2 of this report contains a list of Class 1 benefits and corresponding surcharges for each benefit.

⁴ Risk pooling was implemented for most plans as of June 30, 2003. The normal cost difference was scheduled to be phased out over a five year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year.

⁵ The minimum employer contribution under PEPR is the greater of the required employer contribution or the total employer normal cost.

⁶ **The Plan's Payment on Amortization Bases** Contribution amount for FY 2015-16 will be billed as a level dollar amount monthly over the course of the year. Late payments will accrue interest at an annual rate of 7.5 percent. Lump sum payments may be made through my|CalPERS. Plan Normal Cost contributions will be made as part of the payroll reporting process. As a percentage of payroll your UAL contribution is 1.447 percent.

Plan's Funded Status

	June 30, 2012		June 30, 2013
1. Present Value of Projected Benefits (PVB)	\$ 706,845	\$	762,785
2. Entry Age Normal Accrued Liability	514,167		582,509
3. Plan's Market Value of Assets (MVA)	383,936		473,403
4. Unfunded Liability [(2) - (3)]	130,231		109,106
5. Funded Ratio [(3) / (2)]	74.7%		81.3%

Projected Contributions

The contribution rate and amount shown below is an estimate for the employer contribution for fiscal year 2016-17. The estimated contribution is based on a projection of the most recent information we have available, including an estimate of the investment return for fiscal year 2013-14, namely 18.0 percent. It also reflects implementation of the direct rate smoothing method and the impact of new actuarial assumptions.

Projected Employer Contribution Rate:	8.9%
Projected Plan UAL Contribution	\$ 4,925

The estimate also assumes that there are no liability gains or losses among the plans in your risk pool, that **your plan has no new amendments in the next year, and that your plan's and your risk pool's payrolls both increase exactly 3.0 percent in the 2013-14 fiscal year.** Therefore, the projected employer contribution for 2016-17 is strictly an estimate. Your actual rate for 2016-17 **will be provided in next year's** valuation report. A more detailed analysis of your projected employer contributions over the next five years can be found in the "Risk Analysis" section of this report.

ASSETS AND LIABILITIES

- **DEVELOPMENT OF PLAN'S SHARE OF POOL'S UAL**
- **DEVELOPMENT OF PLAN'S SHARE OF POOL'S MVA**
- **SCHEDULE OF PLAN'S SIDE FUND & OTHER AMORTIZATION BASES**
- **ALTERNATIVE AMORTIZATION SCHEDULES**
- **FUNDING HISTORY**
- **PLAN'S TOTAL NORMAL COST RATE**

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Development of the Plan's Share of Pool's Unfunded Accrued Liability

It is the policy of the CalPERS to ensure equity within the risk pools by allocating the pool's unfunded accrued liability in a manner that treats each employer fairly and that maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. Commencing with the June 30, 2013 actuarial valuations and for purposes of allocating the pool's unfunded accrued liability to all the individual plans within the pool, an individual plan's total unfunded accrued liability (Preliminary Plan UAL) on a specific valuation date will be set equal to the sum of the outstanding unamortized balances on the valuation date for the following:

- a) Side Fund
- b) Plan's share of Pool UAL due to benefit changes (including golden handshakes) provided to the members of that plan
- c) Plan's share of the Pool UAL created before the valuation date for reasons other than benefit changes

1.	Plan's Accrued Liability	\$	582,509
2.	Plan's Side Fund		0
3.	Increase in Plan's AL for amendments in FY 2012-13		0
4.	Pool's Accrued Liability	\$	4,434,848,248
5.	Sum of Pool's Individual Plan Side Funds		108,339,918
6.	Increase in Pool's AL for amendments in FY 2012-13		409,907
7.	Pre-2013 Pool's UAL	\$	371,706,237
8.	Plan's Share of Pre-2013 Pool's UAL $[(1)-(2)-(3)]/[(4)-(5)-(6)] * (7)$	\$	50,050
9.	Pool's 2013 Investment & Asset (Gain)/Loss		442,846,571
10.	Pool's 2013 Other (Gain)/Loss		(4,364,079)
11.	Plan's Share of Pool's Asset (Gain)/Loss $[(1)-(2)-(3)]/[(4)-(5)-(6)] * (9)$		59,629
12.	Plan's Share of Pool's Other (Gain)/Loss $[(1)]/[(4)] * (10)$		(573)
13.	Plan's UAL as of 6/30/2013 $[(2)+(8)+(11)+(12)]$	\$	109,106

Development of the Plan's Share of Pool's Market Value of Assets

1.	Plan's Accrued Liability	\$	582,509
2.	Plan's UAL	\$	109,106
3.	Plan's Share of Pool's MVA (1)-(2)	\$	473,403

Schedule of Plan's Side Fund and Other Amortization Bases

There is a two-year lag between the Valuation Date and the Contribution Fiscal Year.

- The assets, liabilities and funded status of the plan are measured as of the valuation date; June 30, 2013.
- The employer contribution determined by the valuation is for the fiscal year beginning two years after the valuation date; fiscal year 2015-16.

This two-year lag is necessary due to the amount of time needed to extract and test the membership and financial data, and due to the need to provide public agencies with their employer contribution well in advance of the start of the fiscal year.

The Unfunded Liability is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The Unfunded Liability is rolled forward each year by subtracting the expected Payment on the Unfunded Liability for the fiscal year and adjusting for interest. The Expected Payment on the Unfunded Liability for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution Rate for the first fiscal year is determined by the actuarial valuation two years ago and the rate for the second year is from the actuarial valuation one year ago. The Normal Cost Rate for each of the two fiscal years is assumed to be the same as the rate determined by the current valuation. All expected dollar amounts, with the exception of the Side Fund base, are determined by multiplying the rate by the expected payroll for the applicable fiscal year, based on payroll as of the valuation date.

Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-14	Balance 6/30/14	Expected Payment 2014-15	Amounts for Fiscal 2015-16		
							Balance 6/30/15	Scheduled Payment for 2015-16	Payment as Percentage of Payroll
SIDE FUND	06/30/13	3	\$0	\$0	\$0	\$0	\$0	\$0	0.000%
SHARE OF PRE-2013 POOL UAL	06/30/13	22	\$50,050	\$5,810	\$47,780	\$8,915	\$42,120	\$2,998	1.096%
ASSET (GAIN)/LOSS	06/30/13	30	\$59,629	\$0	\$64,101	\$0	\$68,909	\$969	0.354%
NON-ASSET (GAIN)/LOSS	06/30/13	30	\$(573)	\$0	\$(616)	\$0	\$(662)	\$(9)	(0.003%)
TOTAL			\$109,106	\$5,810	\$111,265	\$8,915	\$110,367	\$3,958	1.447%

Commencing with the June 30, 2013 actuarial valuations, the side fund will be treated as a liability as opposed to an asset. Prior to June 30, 2013, a positive side fund conveyed that a public agency had a surplus when risk pooling began June 30, 2003. Conversely, a negative side fund signified that a public agency had an unfunded liability that required elimination through an amortization payment schedule. After June 30, 2013 a positive side fund will signify that an agency has an unfunded liability while a negative side fund will indicate a surplus asset. The amortization schedule will remain unchanged, with the exception that a plan with a negative side fund may have its amortization period extended at the discretion of the plan actuary.

Your plan's allocated share of the risk's pool's unfunded accrued liability is based on your plan's accrued liability and is amortized over the average amortization period of the combined existing amortization bases prior to June 30, 2013. The payments on this base for Fiscal Year 2013-14 and 2014-15 are allocated by your plan's payroll.

The (gain)/loss base is your plan's allocated share of the risk pool's asset gain/loss for the Fiscal Year 2012-13, the change in unfunded accrued liability due to direct rate smoothing and your plan's allocated share of the risk pool's other liability gains and losses for fiscal year 2012-13. This base will be amortized according to Board policy over 30 years with a 5-year ramp-up.

Alternate Amortization Schedules

The amortization schedule shown on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze your current amortization schedule and illustrate the advantages of accelerating unfunded liability payments towards your plan's unfunded liability of \$110,367 as of June 30, 2015, which will require total payments of \$288,038.

30 year
amortization

Shown below are the level rate payments required to amortize your plan's unfunded liability assuming a fresh start over the various periods noted. Note that the payments under each scenario would increase by 3 percent for each year into the future.

Optional Period	2015-16 Payment	Level Rate		
		Total Payments	Total Interest	Savings
25 yr.	\$ 7,295	\$ 265,970	\$ 155,603	\$ 22,068
20 yr.	\$ 8,333	\$ 223,911	\$ 113,544	\$ 64,127

Current CalPERS Board policy calls for lump sum contributions in excess of the required employer contribution shall first be used to eliminate the side fund, if applicable, and then the plan's share of the pool's unfunded accrued liability - \$110,367.

} Recommended
option

Please contact your plan actuary before making such a payment to ensure that the payment is applied correctly.

Funding History

The Funding History below shows the actuarial accrued liability, the **plan's share of the pool's** market value of assets, **plan's share of the pool's unfunded liability**, funded ratio and the annual covered payroll.

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Plan's Share of Pool's Unfunded Liability	Funded Ratio	Annual Covered Payroll
06/30/2011	\$ 446,659	\$ 350,377	\$ 96,282	78.4%	\$ 249,306
06/30/2012	514,167	383,936	130,231	74.7%	250,248
06/30/2013	582,509	473,403	109,106	81.3%	250,248

Plan's Total Normal Cost Rate

The Public Employees' Pension Reform Act of 2013 requires that new employees pay at least 50 percent of the total annual normal cost and that current employees approach the same goal through collective bargaining. Please refer to the CalPERS website for more details.

Shown below are the total annual normal cost rates for your plan.

	Fiscal Year 2014-15	Fiscal Year 2015-16
Plan's Net Total Normal Cost Rate for 2% @ 55	14.711%	14.894%
Surcharge for Class 1 Benefits		
a) FAC 1	<u>0.490%</u>	<u>0.509%</u>
Plan's Total Normal Cost Rate	15.201%	15.403%

RISK ANALYSIS

- **VOLATILITY RATIOS**
- **PROJECTED EMPLOYER CONTRIBUTIONS**
- **ANALYSIS OF FUTURE INVESTMENT RETURN SCENARIOS**
- **ANALYSIS OF DISCOUNT RATE SENSITIVITY**
- **HYPOTHETICAL TERMINATION LIABILITY**

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Volatility Ratios

The actuarial calculations supplied in this communication are based on a number of assumptions about very long-term demographic and economic behavior. Unless these assumptions (terminations, deaths, disabilities, retirements, salary growth, and investment return) are exactly realized each year, there will be differences on a year-to-year basis. The year-to-year differences between actual experience and the **assumptions are called actuarial gains and losses and serve to lower or raise the employer's rates from one year to the next.** Therefore, the rates will inevitably fluctuate, especially due to the ups and downs of investment returns.

Asset Volatility Ratio (AVR)

Plans that have higher asset to payroll ratios produce more volatile employer rates due to investment return. For example, a plan with an asset to payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility, than a plan with an asset to payroll ratio of 4. Below we have **shown your asset volatility ratio, a measure of the plan's current rate volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.**

Liability Volatility Ratio (LVR)

Plans that have higher liability to payroll ratios produce more volatile employer rates due to investment return and changes in liability. For example, a plan with a liability to payroll ratio of 8 is expected to have twice the contribution volatility of a plan with a liability to payroll ratio of 4. The liability volatility ratio is also included in the table below. It should be noted that this ratio indicates a longer-term potential for contribution volatility and the asset volatility ratio, described above, will tend to move closer to this ratio as the plan matures.

Rate Volatility		As of June 30, 2013
1. Market Value of Assets	\$	473,403
2. Payroll		250,248
3. Asset Volatility Ratio (AVR = 1. / 2.)		1.9
4. Accrued Liability	\$	582,509
5. Liability Volatility Ratio (LVR = 4. / 2.)		2.3

Projected Employer Contributions

The estimated rate for 2016-17 is based on a projection of the most recent information we have available, including an estimated 18.0 percent investment return for fiscal 2013-14, the impact of the new smoothing methods adopted by the CalPERS Board in April 2013 that will impact employer rates for the first time in 2015-16 and new actuarial assumptions adopted by the CalPERS Board in February 2014. These new demographic assumptions include a 20-year projected improvement in mortality. A complete listing of the new demographic assumptions to be implemented with the June 30, 2014 annual actuarial valuation and incorporated in the projected rates for FY 2016-17 and beyond can be found on the CalPERS website at: <http://www.calpers.ca.gov/eip-docs/about/pubs/employer/actuarial-assumptions.xls>

The table below shows projected employer contribution rates (before cost sharing) for the next five Fiscal Years, **assuming CalPERS earns 18.0% for fiscal year 2013-14 and 7.50 percent every fiscal year thereafter**, and assuming that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur between now and the beginning of the fiscal year 2016-17.

	New Rate	Projected Future Employer Contribution Rates				
	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Normal Cost %:	8.512%	8.9%	8.9%	8.9%	8.9%	8.9%
UAL \$	\$ 3,958	\$ 4,925	\$ 5,946	\$ 7,024	\$ 8,162	\$ 8,249

Analysis of Future Investment Return Scenarios

In 2014 CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19, 2014 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns. The adopted asset allocation is expected to have a long- term blended return that continues to support a discount rate assumption of 7.5 percent. The newly adopted asset allocation has a lower expected investment volatility that will result in better risk characteristics than an equivalent margin for adverse deviation. The current asset allocation has an expected standard deviation of 12.45 percent while the newly adopted asset allocation has a lower expected standard deviation of 11.76 percent.

The investment return for fiscal year 2013-14 was announced July 14, 2014. The investment return in fiscal year 2013-14 is 18.42 percent before administrative expenses. This year, there will be no adjustment for real estate and private equities. For purposes of projecting future employer rates, we are assuming a 18.0 percent investment return for fiscal year 2013-14.

The investment return realized during a fiscal year first affects the contribution rate for the fiscal year 2 years later. Specifically, the investment return for 2013-14 will first be reflected in the June 30, 2014 actuarial valuation that will be used to set the 2016-17 employer contribution rates, the 2014-15 investment return will first be reflected in the June 30, 2015 actuarial valuation that will be used to set the 2017-18 employer contribution rates and so forth.

Based on a 18.0 percent investment return for fiscal year 2013-14, the April 17, 2013 CalPERS Board-approved amortization and rate smoothing method change, the February 18, 2014 new demographic assumptions including 20-year mortality improvement using Scale BB and assuming that all other actuarial assumptions will be realized, and that no further changes to assumptions, contributions, benefits, or funding will occur between now and the beginning of the fiscal year 2016-17, the effect on the 2016-17 Employer Rate is as follows:

	Estimated 2016-17 Employer Contribution	Estimated Increase in Employer Contribution between 2015-16 and 2016-17
Normal Cost %:	8.9%	0.4%
UAL \$	\$ 4,925	\$ 967

As part of this report, a sensitivity analysis was performed to determine the effects of various investment returns during fiscal years 2014-15, 2015-16 and 2016-17 on the 2017-18, 2018-19 and 2019-20 employer rates. Once again, the projected rate increases assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

Five different investment return scenarios were selected.

- The first scenario is what one would expect if the markets were to give us a 5th percentile return from July 1, 2014 through June 30, 2017. The 5th percentile return corresponds to a -3.8 percent return for each of the 2014-15, 2015-16 and 2016-17 fiscal years.
- The second scenario is what one would expect if the markets were to give us a 25th percentile return from July 1, 2014 through June 30, 2017. The 25th percentile return corresponds to a 2.8 percent return for each of the 2014-15, 2015-16 and 2016-17 fiscal years.
- The third scenario assumed the return for 2014-15, 2015-16, 2016-17 would be our assumed 7.5 percent investment return which represents about a 49th percentile event.
- The fourth scenario is what one would expect if the markets were to give us a 75th percentile return from July 1, 2014 through June 30, 2017. The 75th percentile return corresponds to a 12.0 percent return for each of the 2014-15, 2015-16 and 2016-17 fiscal years.
- Finally, the last scenario is what one would expect if the markets were to give us a 95th percentile return from July 1, 2014 through June 30, 2017. The 95th percentile return corresponds to a 18.9 percent return for each of the 2014-15, 2015-16 and 2016-17 fiscal years.

The table below shows the estimated projected contribution rates and the estimated increases for your plan under the five different scenarios.

2014-17 Investment Return Scenario	Estimated Employer UAL Contribution			Estimated Total Change in Employer UAL Contribution between 2016-17 and 2019-20
	2017-18	2018-19	2019-20	
-3.8% (5th percentile)	\$ 6,949	\$ 10,043	\$ 14,225	\$ 9,300
2.8% (25th percentile)	\$ 6,363	\$ 8,308	\$ 10,795	\$ 5,870
7.5%	\$ 5,946	\$ 7,024	\$ 8,162	\$ 3,237
12.0%(75th percentile)	\$ 5,547	\$ 5,759	\$ 0	\$ (4,925)
18.9%(95th percentile)	\$ 4,934	\$ 0	\$ 0	\$ (4,925)

In addition to the UAL Contribution amounts shown above the estimated employer normal cost of 8.9% of payroll will also be payable in each of the fiscal years shown above. The projected plan normal cost is expected to remain relatively stable over this time period.

Analysis of Discount Rate Sensitivity

The following analysis looks at the 2015-16 employer contributions under two different discount rate scenarios. Shown below are the employer contributions assuming discount rates that are 1 percent lower and 1 percent higher than the current valuation discount rate. This analysis gives an indication of the potential required employer contribution rates if the PERF were to realize investment returns of 6.50 percent or 8.50 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to the employer contributions.

2015-16 Employer Contribution			
As of June 30, 2013	6.50% Discount Rate (-1%)	7.50% Discount Rate (assumed rate)	8.50% Discount Rate (+1%)
Plan's Employer Normal Cost	12.0%	8.5%	5.8%
Accrued Liability	\$ 654,402	\$ 582,509	\$ 522,051
Unfunded Accrued Liability	\$ 180,999	\$ 109,106	\$ 48,648

Hypothetical Termination Liability

Below is an estimate of the financial position of your plan if you had terminated your contract with CalPERS as of June 30, 2013 using the discount rates shown below. Your plan liability on a termination basis is **calculated differently compared to the plan's ongoing funding liability**. For this hypothetical termination liability both compensation and service is frozen as of the valuation date and no future pay increases or service accruals are included. In December 2012, the CalPERS Board adopted a more conservative investment policy and asset allocation strategy for the Terminated Agency Pool. Since the Terminated Agency Pool has limited funding sources, expected benefit payments are secured by risk-free assets. With this change, CalPERS increased benefit security for members while limiting its funding risk. This asset allocation has a lower expected rate of return than the PERF. Consequently, the lower discount rate for the Terminated Agency pool results in higher liabilities for terminated plans.

In order to terminate your plan, you must first contact our Retirement Services Contract Unit to initiate a Resolution of Intent to Terminate. The completed Resolution will allow your plan actuary to give you a preliminary termination valuation with a more up-to-date estimate of your plan liabilities. CalPERS advises you to consult with your plan actuary before beginning this process.

Valuation Date	Hypothetical Termination Liability ¹	Market Value of Assets (MVA)	Unfunded Termination Liability	Termination Funded Ratio	Termination Liability Discount Rate ²
06/30/2011	\$ 637,308	\$ 350,377	\$ 286,931	55.0%	\$ 4.82%
06/30/2012	956,195	383,936	572,259	40.2%	2.98%
06/30/2013	951,043	473,403	477,640	49.8%	3.72%

¹ The hypothetical liabilities calculated above include a 7 percent mortality load contingency in accordance with Board policy. Other actuarial assumptions, such as wage and inflation assumptions, can be found in appendix A.

² The discount rate assumption used for termination valuations is a weighted average of the 10 and 30-year US Treasury yields in effect on the valuation date that equal the duration of the pension liabilities. For purposes of this hypothetical termination liability estimate, the discount rate used, is the yield on the 30-year US Treasury Separate Trading of Registered Interest and Principal of Securities (STRIPS). Note that as of June 30, 2014 the 30-year STRIPS rate is 3.55 percent.

Participant Data

The table below shows a summary of **your plan's** member data upon which this valuation is based:

	June 30, 2012	June 30, 2013
Projected Payroll for Contribution Purposes	\$ 273,453	\$ 273,453
Number of Members		
Active	2	2
Transferred	0	0
Separated	1	1
Retired	1	1

List of Class 1 Benefit Provisions

- One Year Final Compensation

Information for Compliance with GASB Statement No. 27 for Cost-Sharing Multiple-Employer Defined Benefit Plan

Disclosure under GASB 27 follows. However, note that effective for financial statements for fiscal years beginning after June 15, 2014, GASB 68 replaces GASB 27. Disclosure required under GASB 68 will require additional reporting. CalPERS is intending to provide GASB 68 disclosure information upon request for an additional fee. We urge you to start discussions with your auditors on how to implement GASB 68.

Your plan is part of the Miscellaneous Risk Pool, a cost-sharing multiple-employer defined benefit plan. Under GASB 27, an employer should recognize annual pension expenditures/expense equal to its contractually required contributions to the plan. Pension liabilities and assets result from the difference between contributions required and contributions made. The contractually required contribution for the period July 1, 2015 to June 30, 2016 has been determined by an actuarial valuation of the plan as of June 30, 2013. Your unadjusted contribution for the indicated period is a normal cost contribution of 8.512 percent of payroll and an unfunded accrued liability dollar amount of \$3,958. In order to calculate the dollar value of the contractually required contributions for inclusion in financial statements prepared as of June 30, 2016, this normal cost contribution rate, less any employee cost sharing, and as modified by any subsequent financing changes or contract amendments for the year, would be multiplied by the payroll of covered employees that was actually paid during the period July 1, 2015 to June 30, 2016 combined with the UAL amount of \$3,958. However, if this contribution is fully prepaid in a lump sum, then the dollar value of contractually required contributions is equal to the lump sum prepayment. The employer and the employer's auditor are responsible for determining the contractually required contributions. Further, the required contributions in dollars and the percentage of that amount contributed for the current year and each of the two preceding years is to be disclosed under GASB 27.

A summary of principal assumptions and methods used to determine the contractually required contributions is shown below for the cost-sharing multiple-employer defined benefit plan.

Valuation Date	June 30, 2013
Actuarial Cost Method	Entry Age Normal Cost Method
Amortization Method	Level Percent of Payroll
Asset Valuation Method	Market Value
Actuarial Assumptions	
Discount Rate	7.50% (net of administrative expenses)
Projected Salary Increases	3.30% to 14.20% depending on Age, Service, and type of employment
Inflation	2.75%
Payroll Growth	3.00%
Individual Salary Growth	A merit scale varying by duration of employment coupled with an assumed annual inflation growth of 2.75% and an annual production growth of 0.25%.

Complete information on assumptions and methods is provided in Appendix A of the Section 2 report. Appendix B of the Section 2 report contains a description of benefits included in the Risk Pool Actuarial Valuation.

A Schedule of Funding for the Risk Pool's actuarial value of assets, accrued liability, their relationship, and the relationship of the unfunded liability (UL) to payroll for the risk pool(s) to which your plan belongs can be found in Section 2 of the report.

PLAN'S MAJOR BENEFIT OPTIONS

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SECTION 1 – PLAN SPECIFIC INFORMATION FOR THE MISCELLANEOUS PLAN OF THE LOCAL AGENCY FORMATION COMMISSION OF MONTEREY COUNTY

Plan’s Major Benefit Options

Shown below is a summary of the major optional benefits for which your agency has contracted. A description of principal standard and optional plan provisions is in Appendix B within Section 2 of this report.

Benefit Provision	Contract package	
	Receiving	Active Misc
Benefit Formula		2.0% @ 55
Social Security Coverage		no
Full/Modified		full
Final Average Compensation Period		12 mos.
Sick Leave Credit		yes
Non-Industrial Disability		standard
Industrial Disability		no
Pre-Retirement Death Benefits		
Optional Settlement 2W		yes
1959 Survivor Benefit Level		level 4
Special		no
Alternate (firefighters)		no
Post-Retirement Death Benefits		
Lump Sum	\$500	\$500
Survivor Allowance (PRSA)	no	no
COLA	2%	2%

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

**Section 2 may be found on the CalPERS website
(www.calpers.ca.gov) then selecting:**

- **Employers**
- **Actuarial & GASB 27 Information**
- **Risk Pooling**
- **Risk Pool Annual Valuation Report**



Section 2

ACTUARIAL VALUATION

as of June 30, 2013

for CalPERS

MISCELLANEOUS RISK POOL

REQUIRED CONTRIBUTIONS

FOR FISCAL YEAR

July 1, 2015 – June 30, 2016

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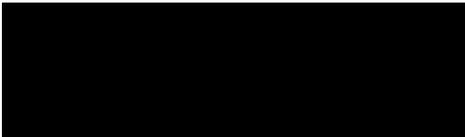
ACTUARIAL CERTIFICATION

To the best of our knowledge, this **Section 2** report is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the **newly joined** Miscellaneous Risk Pools. This valuation is based on the member and financial data as of June 30, 2013 provided by the various CalPERS databases and the benefits under this Risk Pool with CalPERS as of the date this report was produced. In the opinion of the actuaries whose signatures appear below the valuation has been performed in accordance with generally accepted actuarial principles, in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for this risk pool, as prescribed by the CalPERS Board of Administration according to provisions set forth in the **California Public Employees' Retirement Law**.

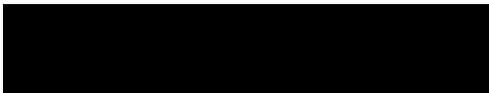
The undersigned are CalPERS staff actuaries who are members of the American Academy of Actuaries and the Society of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



SHELLY CHU, ASA, MAAA
Senior Pension Actuary, CalPERS
Risk Pool Actuary



KELLY STURM, ASA, MAAA
Senior Pension Actuary, CalPERS
Risk Pool Reviewing Actuary



FRITZIE ARCHULETA, ASA, MAAA
Senior Pension Actuary, CalPERS
Risk Pool Reviewing Actuary

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HIGHLIGHTS AND EXECUTIVE SUMMARY

- **PURPOSE OF SECTION 2**
- **RISK POOL'S REQUIRED EMPLOYER CONTRIBUTION**
- **DEVELOPMENT OF RISK POOL'S EMPLOYER NORMAL COST BY BENEFIT FORMULA**
- **FUNDED STATUS OF THE RISK POOL**
- **COST**
- **CHANGES SINCE THE PRIOR YEAR'S VALUATION**
- **SUBSEQUENT EVENTS**

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Purpose of Section 2

This Actuarial Valuation for the Miscellaneous Risk Pool of the California Public Employees' Retirement System (CalPERS) was performed by CalPERS' staff actuaries using data as of June 30, 2013 in order to:

- Set forth the assets and accrued liabilities of this risk pool as of June 30, 2013
- Determine the required contributions to the risk pool for the fiscal year July 1, 2015 through June 30, 2016
- Provide actuarial information as of June 30, 2013 to the CalPERS Board of Administration and other interested parties

The use of this report for any other purposes may be inappropriate. In particular, this report does not contain information applicable to alternative benefit costs. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Risk Pool's Required Employer Contribution

		Fiscal Year 2015-16
1) Contribution in Projected Dollars		
a)	Total Risk Pool's Normal Cost	\$ 349,701,728
b)	Employee Contribution	153,381,565
c)	Risk Pool's Employer Normal Cost [(1a) – (1b)]	\$ 196,320,163
d)	Payment on Risk Pool's Amortization Bases	160,711,302
e)	Total Required Employer Contribution* [(1c)+(1d)]	\$ 357,031,465
	* Total may not add up due to rounding	
2) Normal Cost Contribution as a Percentage of Projected Pay		
a)	Total Risk Pool's Normal Cost	16.758%
b)	Employee Contribution	7.350%
c)	Risk Pool's Employer Normal Cost [(2a) – (2b)]	9.408%

Development of Risk Pool's Employer Normal Cost by Benefit Formula

Benefit Formula	2% at 62	2% at 60	2% at 55	2.5% at 55	2.7% at 55	3% at 60
Normal Cost Contribution as Percentage of Projected Payroll for Fiscal Year 2015-16						
1) Total Employer Normal Cost Base Benefit	6.179%	6.179%	6.179%	6.179%	6.179%	6.179%
2) Class 0 Benefit	0.000%	0.530%	1.824%	2.888%	4.119%	4.886%
3) Class 1 Benefits	0.167%	0.240%	0.610%	0.773%	0.899%	1.193%
4) Expected Employee Contribution	6.308%	6.880%	6.891%	7.942%	7.947%	7.762%
5) Total Normal Cost Contribution [(1)+(2)+(3)+(4)]	12.654%	13.829%	15.504%	17.782%	19.144%	20.020%
6) Employer Normal Cost [(5)-(4)]	6.346%	6.949%	8.613%	9.840%	11.197%	12.258%

The normal costs shown above are averages for the benefit formula listed.

Funded Status of the Risk Pool

	June 30, 2013
1. Present Value of Projected Benefits	\$ 14,197,513,753
2. Entry Age Normal Accrued Liability	\$ 11,805,627,557
3. Market Value of Assets (MVA)	\$ 9,093,458,815
4. Unfunded Liability (MVA Basis) [(2) - (3)]	\$ 2,712,168,742
5. Funded Ratio (MVA Basis) [(3) / (2)]	77.0%

The funded status shown above is the average for all plans in the risk pool. The funded status of your plan can be found in Section 1.

Cost

Actuarial Cost Estimates in General

What will this plan or risk pool cost? Unfortunately, there is no simple answer. There are two major reasons for the complexity of the answer:

First, all actuarial calculations, including those in this report, are based on a number of assumptions about the future. These assumptions can be divided into two categories.

- Demographic assumptions include the percentage of employees that will terminate, die, become disabled, and retire in each future year.
- Economic assumptions include future salary increases for each active employee, and the assumption with the greatest impact, future asset returns at CalPERS for each year into the future until the last dollar is paid to current members of your plan.

While CalPERS has set these assumptions as our best estimate of the real future of your plan, it must be understood that these assumptions are very long term predictors and will surely not be realized in any one year. For example, while the asset earnings at CalPERS have averaged more than the assumed return of 7.5 percent over the past twenty year period ending June 30, 2013, returns for each fiscal year ranged from -24 percent to +21.7 percent.

Second, the very nature of actuarial funding produces the answer to the question of plan or risk pool cost as the sum of two separate pieces:

- The Normal Cost (i.e., the future annual premiums in the absence of surplus or unfunded liability) expressed as a percentage of total active payroll, and
- The Past Service Cost or Accrued Liability (i.e., representing the current value of the benefit for all credited past service of current members) which is expressed as a lump sum dollar amount.

Changes since the Prior Year's Valuation

Actuarial Methods and Assumptions

On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and rate smoothing policies. Beginning with the June 30, 2013 valuations that set the 2015-16 rates, CalPERS will employ an amortization and smoothing policy that will pay for all gains and losses over a fixed 30-year period with the increases or decreases in the rate spread directly over a 5-year period. The new amortization and smoothing policy is used in this valuation.

A change in the calculation of termination with vested benefits liability was made this year to better reflect the retirement experience. After termination with vested benefits, a miscellaneous member is assumed to retire at age 59 and a safety member at age 54 rather than at earliest retirement age. The higher benefit factors at these ages results in a higher liability and an increase in normal cost.

Public Employees' Pension Reform Act of 2013 (PEPRA)

On January 1, 2013, the Public Employees' Pension Reform Act of 2013 (PEPRA) took effect. In addition to creating new retirement formulas for newly hired members, PEPRA also effectively closed all existing active risk pools to new employees. As such, it is no longer appropriate to assume that the payroll of the risk pools for the classic formulas will continue to grow at 3 percent annually. Funding the promised pension benefits as a percentage of payrolls would lead to the underfunding of the plans. In addition the current allocation of the existing unfunded liabilities based on payroll would create equity issues for employers within the risk pools. Furthermore, the declining payroll of the classic formula risk pools will lead to unacceptable levels of employer rate volatility.

In order to address these issues the CalPERS Board of Administration approved at their May 21, 2014 meeting structural changes to the risk pools. All pooled plans will be combined into two active risk pools, one for all miscellaneous groups and one for all safety groups, effective with the 2013 valuations. By combining the risk pools

this way the payroll of the risk pools and the employers within the risk pools can once again be expected to increase at the assumed 3 percent annual growth. This change will allow the continuation of current level percent of payroll amortization schedule. However, two important changes are being made which will affect employers.

Beginning with FY 2015-16, CalPERS will collect employer contributions toward your unfunded liability and side fund as dollar amounts instead of the prior method of a contribution rate. This change will address the funding issue that would still arise from the declining population of classic formula members. Although employers will be invoiced at the beginning of the fiscal year for their unfunded liability and side fund payments, **the plan's normal cost contribution will continue to be collected as a percentage of payroll.**

The risk **pool's unfunded liability will be allocated to each individual plan based on the plan's total liability rather than by the plan's individual payroll.** This will allow employers to track their own unfunded liability and pay it down faster if they choose. The change in the allocation of unfunded liabilities will result in some employers paying more towards their unfunded liability and some paying less.

The impact of most of the PEPRA changes will first show up in the rates and the benefit provision listings of the June 30, 2013 valuation that sets the contribution rates for the 2015-16 fiscal year. For more detailed information on changes due to PEPRA, please refer to the CalPERS website.

Subsequent Events

Actuarial Methods and Assumptions

In 2014 CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns (see Appendix). The adopted asset allocation is expected to have a long- term blended return that continues to support a discount rate assumption of 7.5 percent.

The Board also approved several changes to the demographic assumptions that more closely align with actual experience. The most significant of these is mortality improvement to acknowledge the greater life expectancies we are seeing in our membership and expected continued improvements. The new actuarial assumptions will be used to set the FY 2016-17 contribution rates for public agency employers. The increase in liability due to new actuarial assumptions will be calculated in the 2014 actuarial valuation and will be amortized over a 20-year period with a 5-year ramp-up/ramp-down in accordance with Board policy. The impacts of assumption changes for your plan are **included in the "Projected Rates" subsection of the "Risk Analysis" discussion in Section 1 of your actuarial valuation report.**

ASSETS

- **RISK POOL'S MARKET VALUE OF ASSETS**
- **ASSET ALLOCATION**
- **CALPERS HISTORY OF INVESTMENT RETURNS**

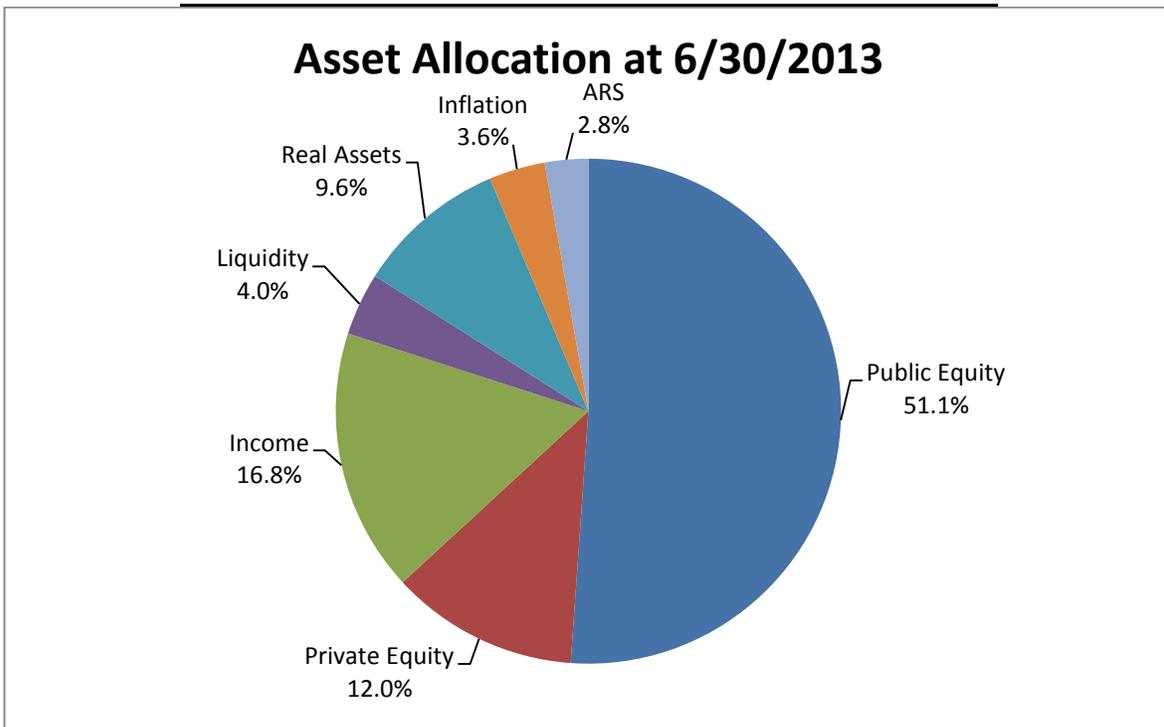
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Asset Allocation

CalPERS adheres to an Asset Allocation Strategy which establishes asset class allocation policy targets and ranges, and manages those asset class allocations within their policy ranges. CalPERS recognizes that over 90 percent of the variation in investment returns of a well-diversified pool of assets can typically be attributed to asset allocation decisions. On February 19, 2014 the CalPERS Board of Administration adopted changes to the current asset allocation as shown in the Policy Target Allocation below expressed as percentage of total assets. The asset allocation has an expected long term blended rate of return of 7.5%.

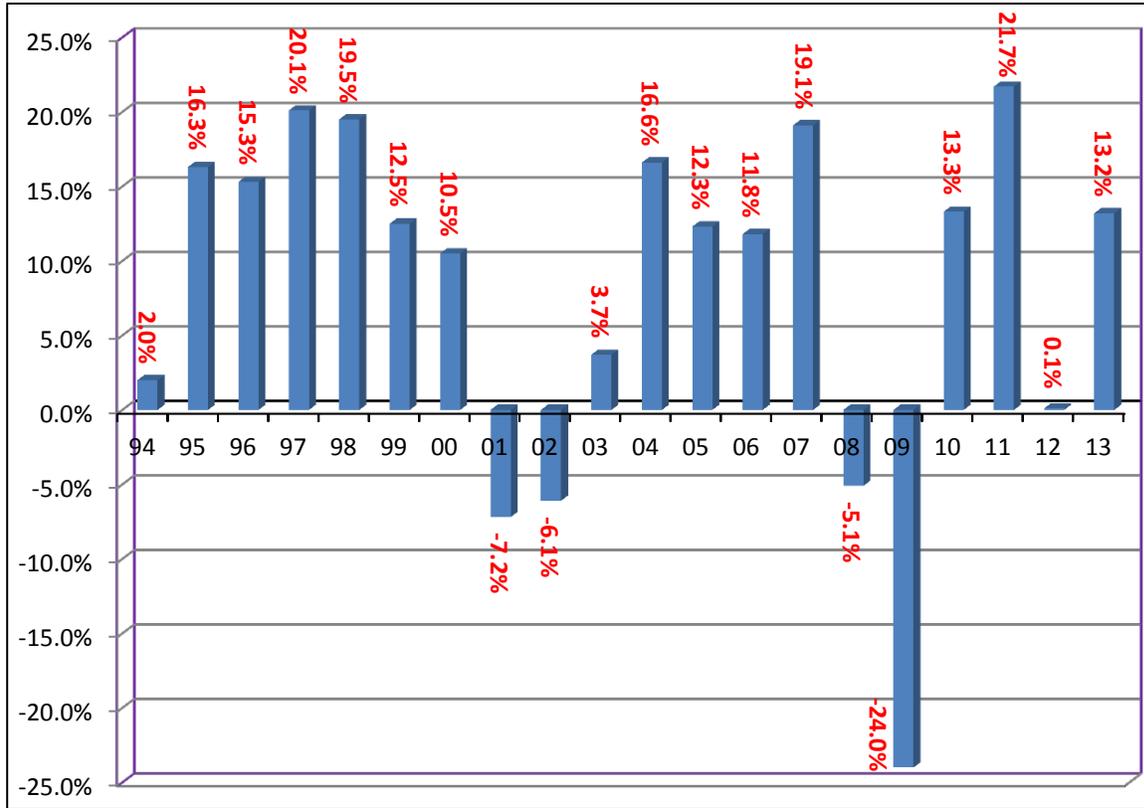
The asset allocation and market value of assets shown below reflect the values of the Public Employees Retirement Fund (PERF) in its entirety as of June 30, 2013. The assets for the risk pool are part of the Public Employees Retirement Fund (PERF) and are invested accordingly.

(A) Asset Class	(B) Market Value (\$ Billion)	(C) Policy Target Allocation
1) Public Equity	133.4	47.0%
2) Private Equity	31.4	12.0%
3) Fixed Income	43.9	19.0%
4) Cash Equivalents	10.5	4.0%
5) Real Assets	25.2	11.0%
6) Inflation Assets	9.4	3.0%
7) Absolute Return Strategy (ARS)	7.2	0.0%
Total Fund	\$261.0	100.0%



CalPERS History of Investment Returns

The following is a chart with the 20-year historical annual returns of the Public Employees Retirement Fund for each fiscal year ending on June 30. Beginning in 2002, the figures are reported as gross of fees.



The table below shows historical geometric mean annual returns of the Public Employees Retirement Fund for each fiscal year ending on June 30, 2013, (figures are reported as gross of fees). The geometric mean rate of return is the average rate per period compounded over multiple periods. It should be recognized that in any given year the rate of return is volatile. Although the expected rate of return on the recently adopted new asset allocation is 7.5 percent the portfolio has an expected volatility of 11.76 percent per year. Consequently when looking at investment returns it is more instructive to look at returns over longer time horizons.

History of CalPERS Geometric Mean Rates of Return and Volatilities					
	1 year	5 year	10 year	20 year	30 year
Geometric Return	13.2%	3.5%	7.0%	7.6%	9.4%
Volatility	-	17.9%	13.9%	11.8%	11.6%

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LIABILITIES AND RATES

- **DEVELOPMENT OF RISK POOL'S ACCRUED AND UNFUNDED LIABILITIES**
- **DEVELOPMENT OF RISK POOL'S ANNUAL REQUIRED BASE CONTRIBUTION**
- **RISK POOL'S CONTRIBUTION HISTORY**
- **FUNDING HISTORY**

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Development of Risk Pool's Accrued and Unfunded Liabilities

	June 30, 2013
1. Present Value of Projected Benefits	
a) Active Members	\$ 7,105,486,840
b) Transferred Members	881,896,195
c) Separated Members	392,962,999
d) Members and Beneficiaries Receiving Payments	<u>5,817,167,719</u>
e) Total	\$ 14,197,513,753
2. Present Value of Future Employer Normal Costs	\$ 1,291,890,320
3. Present Value of Future Employee Contributions	\$ 1,099,999,303
4. Entry Age Normal Accrued Liability	
a) Active Members [(1a) - (2) - (3)]	\$ 4,713,600,644
b) Transferred Members (1b)	881,896,195
c) Separated Members (1c)	392,962,999
d) Members and Beneficiaries Receiving Payments (1d)	<u>5,817,167,719</u>
e) Total	\$ 11,805,627,557
5. Market Value of Assets (MVA) Including Receivables	\$ 9,093,458,815
6. Unfunded Accrued Liability (MVA Basis) [(4e) - (5)]	2,712,168,742
7. Funded Ratio (MVA Basis) [(5) / (4e)]	77.0%

Development of Risk Pool's Annual Required Base Contribution

		Fiscal Year 2015-16
1. Contribution in Projected Dollars		
a) Total Normal Cost	\$	349,701,728
b) Employee Contribution		153,381,565
c) Risk Pool's Employer Normal Cost [(1a) - (1b)]		196,320,163
d) Payment on Risk Pool's Amortization Bases		<u>160,711,302</u>
e) Total Required Employer Contributions [(1c) + (1d)]	\$	357,031,465
2. Annual Covered Payroll as of Valuation Date	\$	1,909,639,449
3. Projected Payroll for Contribution Fiscal Year	\$	2,086,714,587
4. Normal Cost Contribution as a % of Projected Pay		
a) Total Normal Cost [(1a) / (3)]		16.758%
b) Employee Contribution [(1b) / (3)]		7.350%
c) Risk Pool's Employer Normal Cost [(1c) / (3)]		9.408%

Risk Pool's Contribution History

Fiscal Date	Total Employer Normal Cost	Payment on Risk Pool's Amortization Bases	Total Employer Contribution
06/30/2013	\$196,320,163	\$160,711,302	\$357,031,465

Funding History

Valuation Date	Accrued Liabilities (AL)	Market Value of Assets (MVA)	Unfunded Liabilities (UL)	Funded Ratio (MVA/AL)	Annual Covered Payroll	UL As a % of Payroll
06/30/2013	\$ 11,805,627,557	\$ 9,093,458,815	\$ 2,712,168,742	77.0%	\$ 1,909,639,449	142.0%

Information shown here is for compliance with GASB No. 27 for a cost-sharing multiple-employer defined benefit plan. However, note that beginning next year, GASB 68 will supersede GASB 27. Disclosure required under GASB 68 will require additional reporting which CalPERS intends to provide for an additional cost.

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APPENDICES

- **APPENDIX A - ACTUARIAL METHODS AND ASSUMPTIONS**
- **APPENDIX B – PRINCIPAL PLAN PROVISIONS**
- **APPENDIX C – CLASSIFICATION OF OPTIONAL BENEFITS**
- **APPENDIX D – SUMMARY OF AMORTIZATION BASES UNDER PRIOR RISK POOL STRUCTURE**
- **APPENDIX E - PARTICIPANT DATA**
- **APPENDIX F - GLOSSARY OF ACTUARIAL TERMS**

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APPENDIX A

ACTUARIAL METHODS AND ASSUMPTIONS

- **ACTUARIAL DATA**
- **ACTUARIAL METHODS**
- **ACTUARIAL ASSUMPTIONS**
- **MISCELLANEOUS**

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Actuarial Data

As stated in the Actuarial Certification, the data, which serves as the basis of this valuation, has been obtained from the various CalPERS databases. We have reviewed the valuation data and believe that it is reasonable and appropriate in aggregate. We are unaware of any potential data issues that would have a material effect on the results of this valuation, except that data does not always contain the latest salary information for former members now in reciprocal systems and does not recognize the potential for unusually large salary deviation in certain cases such as elected officials. Therefore, salary information in these cases may not be accurate. These situations are relatively infrequent, however, and when they do occur, they generally do not have a material impact on the employer contribution rates.

Actuarial Methods

Funding Method

The actuarial funding method used for the Retirement Program is the Entry Age Normal Cost Method. Under this method, projected benefits are determined for all members and the associated liabilities are spread in a manner that produces level annual cost as a percent of pay in each year from the age of hire (entry age) to the assumed retirement age. The cost allocated to the current fiscal year is called the normal cost.

The actuarial accrued liability for active members is then calculated as the portion of the total cost of the plan allocated to prior years. The actuarial accrued liability for members currently receiving benefits, for active members beyond the assumed retirement age, and for members entitled to deferred benefits, is equal to the present value of the benefits expected to be paid. No normal costs are applicable for these participants.

The excess of the total actuarial accrued liability over the actuarial value of plan assets is called the unfunded actuarial accrued liability. Funding requirements are determined by adding the normal cost and an amortization of the unfunded liability as a level percentage of assumed future payrolls. Commencing with the June 30, 2013 valuation all new gains or losses are tracked and amortized over a fixed 30-year period with a 5-year ramp up at the beginning and a 5-year ramp down at the end of the amortization period. All changes in liability due to plan amendments (other than golden handshakes), changes in actuarial assumptions, or changes in actuarial methodology are amortized separately over a 20-year period with a 5-year ramp up at the beginning and a 5-year ramp down at the end of the amortization period. Changes in unfunded accrued liability due to a Golden Handshake will be amortized over a period of 5-years. **If a plan's accrued liability exceeds the market value of assets, the annual contribution with respect to the total unfunded liability may not be less than the amount produced by a 30-year amortization of the unfunded liability.** An exception has been made for the change in asset value from actuarial to market value in this valuation. The CalPERS Board approved a 30-year amortization with a 5-year ramp-up/ramp-down for only this change in method.

Additional contributions will be required for any plan or risk pool if their cash flows hamper adequate funding progress by preventing the expected funded status on a market value of assets basis to either:

- Increase by at least 15 percent by June 30, 2043; or
- Reach a level of 75 percent funded by June 30, 2043

The necessary additional contribution will be obtained by changing the amortization period of the gains and losses, except for those occurring in the fiscal years 2008-2009, 2009-2010, and 2010-2011 to a period, which will result in the satisfaction of the above criteria. CalPERS actuaries will reassess the criteria above when performing each future valuation to determine whether or not additional contributions are necessary.

An exception to the funding rules above is used whenever the application of such rules results in inconsistencies. **In these cases, a "fresh start" approach is used. This simply means that the current unfunded actuarial liability is projected and amortized over a set number of years.** As mentioned above, if the annual contribution on the total unfunded liability was less than the amount produced by a 30-year amortization of the unfunded liability, the plan actuary would implement a 30-year fresh start. However, in the case of a 30-year fresh start, just the unfunded

liability not already in the (gain)/loss base (which is already amortized over 30 years), will go into the new fresh start base. In addition, a fresh start is needed in the following situations:

- 1) When a positive payment would be required on a negative unfunded actuarial liability (or conversely a negative payment on a positive unfunded actuarial liability); or
- 2) When there are excess assets, rather than an unfunded liability. In this situation, a 30-year fresh start is used, unless a longer fresh start is needed to avoid a negative total rate.

It should be noted that the actuary may choose to use a fresh start under other circumstances. In all cases, the fresh start period is set by the actuary at what is deemed appropriate; however, the period will not be less than five years, nor greater than 30 years.

Asset Valuation Method

It is the policy of the CalPERS Board of Administration to use professionally accepted amortization methods to eliminate unfunded accrued liabilities or surpluses in a manner that maintains benefit security for the members of the System while minimizing substantial variations in employer contribution rates. On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and rate smoothing policies. Beginning with the June 30, 2013 valuations that set the 2015-16 rates, CalPERS will employ an amortization and smoothing policy that will pay for all gains and losses over a fixed 30-year period with the increases or decreases in the rate spread directly over a 5-year period. CalPERS will no longer use an actuarial value of assets and will use the market value of assets. This direct rate smoothing method is equivalent to a method using a 5-year asset smoothing period with no asset corridor and a 25-year amortization period for gains and losses. The change in asset value will also be amortized over 30 years with a 5-year ramp-up/ramp-down.

Actuarial Assumptions

In 2014 CalPERS completed a 2-year asset liability management study incorporating actuarial assumptions and strategic asset allocation. On February 19, 2014 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns. The adopted asset allocation is expected to have a long-term blended return that continues to support a discount rate assumption of 7.5 percent. The Board also approved several changes to the demographic assumptions that more closely align with actual experience. The most significant of these is mortality improvement to acknowledge the greater life expectancies we are seeing in our membership and expected continued improvements. The new actuarial assumptions will be used to set the FY 2016-17 contribution rates for public agency employers. The increase in liability due to new actuarial assumptions will be calculated in the 2014 actuarial valuation and will be amortized over a 20-year period with a 5-year ramp-up/ramp-down in accordance with Board policy. For more details, please refer to the experience study report that can be found at the following link: <http://www.calpers.ca.gov/eip-docs/about/pubs/employer/2014-experience-study.pdf>

Economic Assumptions

Discount Rate

7.5 percent compounded annually (net of expenses). This assumption is used for all plans.

Termination Liability Discount Rate

The discount rate used for termination valuation is a weighted average of the 10 and 30-year US Treasury yields in effect on the valuation date that equal the duration of the pension liabilities. For purposes of this hypothetical termination liability estimate, the discount rate used, 3.72 percent is the yield on the 30-year US Treasury Separate Trading of Registered Interest and Principal of Securities (STRIPS) as of June 30, 2013. Please note, as of June 30, 2014 the 30-year STRIPS yield was 3.55 percent.

Salary Growth

Annual increases vary by category, entry age, and duration of service. A sample of assumed increases are shown below.

Public Agency Miscellaneous			
<u>Duration of Service</u>	<u>(Entry Age 20)</u>	<u>(Entry Age 30)</u>	<u>(Entry Age 40)</u>
0	0.1420	0.1240	0.0980
1	0.1190	0.1050	0.0850
2	0.1010	0.0910	0.0750
3	0.0880	0.0800	0.0670
4	0.0780	0.0710	0.0610
5	0.0700	0.0650	0.0560
10	0.0480	0.0460	0.0410
15	0.0430	0.0410	0.0360
20	0.0390	0.0370	0.0330
25	0.0360	0.0360	0.0330
30	0.0360	0.0360	0.0330

Salary Growth (continued)

Public Agency Fire

<u>Duration of Service</u>	<u>(Entry Age 20)</u>	<u>(Entry Age 30)</u>	<u>(Entry Age 40)</u>
0	0.1050	0.1050	0.1020
1	0.0950	0.0940	0.0850
2	0.0870	0.0830	0.0700
3	0.0800	0.0750	0.0600
4	0.0740	0.0680	0.0510
5	0.0690	0.0620	0.0450
10	0.0510	0.0460	0.0350
15	0.0410	0.0390	0.0340
20	0.0370	0.0360	0.0330
25	0.0350	0.0350	0.0330
30	0.0350	0.0350	0.0330

Public Agency Police

<u>Duration of Service</u>	<u>(Entry Age 20)</u>	<u>(Entry Age 30)</u>	<u>(Entry Age 40)</u>
0	0.1090	0.1090	0.1090
1	0.0930	0.0930	0.0930
2	0.0810	0.0810	0.0780
3	0.0720	0.0700	0.0640
4	0.0650	0.0610	0.0550
5	0.0590	0.0550	0.0480
10	0.0450	0.0420	0.0340
15	0.0410	0.0390	0.0330
20	0.0370	0.0360	0.0330
25	0.0350	0.0340	0.0330
30	0.0350	0.0340	0.0330

Public Agency County Peace Officers

<u>Duration of Service</u>	<u>(Entry Age 20)</u>	<u>(Entry Age 30)</u>	<u>(Entry Age 40)</u>
0	0.1290	0.1290	0.1290
1	0.1090	0.1060	0.1030
2	0.0940	0.0890	0.0840
3	0.0820	0.0770	0.0710
4	0.0730	0.0670	0.0610
5	0.0660	0.0600	0.0530
10	0.0460	0.0420	0.0380
15	0.0410	0.0380	0.0360
20	0.0370	0.0360	0.0340
25	0.0350	0.0340	0.0330
30	0.0350	0.0340	0.0330

Schools			
Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
0	0.1080	0.0960	0.0820
1	0.0940	0.0850	0.0740
2	0.0840	0.0770	0.0670
3	0.0750	0.0700	0.0620
4	0.0690	0.0640	0.0570
5	0.0630	0.0600	0.0530
10	0.0450	0.0440	0.0410
15	0.0390	0.0380	0.0350
20	0.0360	0.0350	0.0320
25	0.0340	0.0340	0.0320
30	0.0340	0.0340	0.0320

- The Miscellaneous salary scale is used for Local Prosecutors.
- The Police salary scale is used for Other Safety, Local Sheriff, and School Police.

Overall Payroll Growth

3.00 percent compounded annually (used in projecting the payroll over which the unfunded liability is amortized). This assumption is used for all plans.

Inflation

2.75 percent compounded annually. This assumption is used for all plans.

Non-valued Potential Additional Liabilities

The potential liability loss for a cost-of-living increase exceeding the 2.75 percent inflation assumption, and any potential liability loss from future member service purchases are not reflected in the valuation.

Miscellaneous Loading Factors

Credit for Unused Sick Leave

Total years of service is increased by 1 percent for those plans that have accepted the provision providing Credit for Unused Sick Leave.

Conversion of Employer Paid Member Contributions (EPMC)

Total years of service is increased by the Employee Contribution Rate for those plans with the provision providing for the Conversion of Employer Paid Member Contributions (EPMC) during the final compensation period.

Norris Decision (Best Factors)

Employees hired prior to July 1, 1982 have projected benefit amounts increased in order to reflect the use of "Best Factors" in the calculation of optional benefit forms. This is due to a 1983 Supreme Court decision, known as the Norris decision, which required males and females to be treated equally in the determination of benefit amounts. Consequently, anyone already employed at that time is given the best possible conversion factor when optional benefits are determined. No loading is necessary for employees hired after July 1, 1982.

Termination Liability

The termination liabilities include a 7 percent contingency load. This load is for unforeseen improvements in mortality.

Demographic Assumptions

Pre-Retirement Mortality

Non-Industrial Death Rates vary by age and gender. Industrial Death rates vary by age. See sample rates in table below. The non-industrial death rates are used for all plans. The industrial death rates are used for Safety Plans (except for Local Prosecutor safety members where the corresponding Miscellaneous Plan does not have the Industrial Death Benefit).

Age	Non-Industrial Death (Not Job-Related)		Industrial Death (Job-Related)
	Male	Female	Male and Female
20	0.00047	0.00016	0.00003
25	0.00050	0.00026	0.00007
30	0.00053	0.00036	0.00010
35	0.00067	0.00046	0.00012
40	0.00087	0.00065	0.00013
45	0.00120	0.00093	0.00014
50	0.00176	0.00126	0.00015
55	0.00260	0.00176	0.00016
60	0.00395	0.00266	0.00017
65	0.00608	0.00419	0.00018
70	0.00914	0.00649	0.00019
75	0.01220	0.00878	0.00020
80	0.01527	0.01108	0.00021

Miscellaneous Plans usually have Industrial Death rates set to zero unless the agency has specifically contracted for Industrial Death benefits. If so, each Non-Industrial Death rate shown above will be split into two components; 99 percent will become the Non-Industrial Death rate and 1 percent will become the Industrial Death rate.

Post-Retirement Mortality

Rates vary by age, type of retirement and gender. See sample rates in table below. These rates are used for all plans.

Age	Healthy Recipients		Non-Industrially Disabled (Not Job-Related)		Industrially Disabled (Job-Related)	
	Male	Female	Male	Female	Male	Female
50	0.00239	0.00125	0.01632	0.01245	0.00443	0.00356
55	0.00474	0.00243	0.01936	0.01580	0.00563	0.00546
60	0.00720	0.00431	0.02293	0.01628	0.00777	0.00798
65	0.01069	0.00775	0.03174	0.01969	0.01388	0.01184
70	0.01675	0.01244	0.03870	0.03019	0.02236	0.01716
75	0.03080	0.02071	0.06001	0.03915	0.03585	0.02665
80	0.05270	0.03749	0.08388	0.05555	0.06926	0.04528
85	0.09775	0.07005	0.14035	0.09577	0.11799	0.08017
90	0.16747	0.12404	0.21554	0.14949	0.16575	0.13775
95	0.25659	0.21556	0.31025	0.23055	0.26108	0.23331
100	0.34551	0.31876	0.45905	0.37662	0.40918	0.35165
105	0.58527	0.56093	0.67923	0.61523	0.64127	0.60135
110	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

The mortality assumptions are based on mortality rates resulting from the most recent CalPERS Experience Study adopted by the CalPERS Board, first used in the June 30, 2009 valuation. For purposes of the post-retirement mortality rates, those revised rates include 5 years of projected on-going mortality improvement using Scale AA published by the Society of Actuaries until June 30, 2010. There is no margin for future mortality improvement beyond the valuation date.

On February 19, 2014 the CalPERS Board adopted new recommended demographic assumption based on the most recent CalPERS Experience Study. These new actuarial assumptions will be implemented for the first time in the June 30, 2014 valuation. For purposes of the post-retirement mortality rates, the revised rates include 20 years of projected on-going mortality improvement using Scale BB published by the Society of Actuaries.

Marital Status

For active members, a percentage who are married upon retirement is assumed according to member category as shown in the following table.

Member Category	Percent Married
Miscellaneous Member	85%
Local Police	90%
Local Fire	90%
Other Local Safety	90%
School Police	90%

Age of Spouse

It is assumed that female spouses are 3 years younger than male spouses. This assumption is used for all plans.

Terminated Members

It is assumed that terminated members refund immediately if non-vested. Terminated members who are vested are assumed to follow the same service retirement pattern as active members but with a load to reflect the expected higher rates of retirement, especially at lower ages. The following table shows the load factors that are applied to the service retirement assumption for active members to obtain the service retirement pattern for separated vested members:

Age	Load Factor
50	450%
51	250%
52 through 56	200%
57 through 60	150%
61 through 64	125%
65 and above	100% (no change)

Termination with Refund

Rates vary by entry age and service for Miscellaneous Plans. Rates vary by service for Safety Plans. See sample rates in tables below.

Public Agency Miscellaneous						
Duration of Service	Entry Age 20	Entry Age 25	Entry Age 30	Entry Age 35	Entry Age 40	Entry Age 45
0	0.1742	0.1674	0.1606	0.1537	0.1468	0.1400
1	0.1545	0.1477	0.1409	0.1339	0.1271	0.1203
2	0.1348	0.1280	0.1212	0.1142	0.1074	0.1006
3	0.1151	0.1083	0.1015	0.0945	0.0877	0.0809
4	0.0954	0.0886	0.0818	0.0748	0.0680	0.0612
5	0.0212	0.0193	0.0174	0.0155	0.0136	0.0116
10	0.0138	0.0121	0.0104	0.0088	0.0071	0.0055
15	0.0060	0.0051	0.0042	0.0032	0.0023	0.0014
20	0.0037	0.0029	0.0021	0.0013	0.0005	0.0001
25	0.0017	0.0011	0.0005	0.0001	0.0001	0.0001
30	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001
35	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Public Agency Safety

Duration of Service	Fire	Police	County Peace Officer
0	0.0710	0.1013	0.0997
1	0.0554	0.0636	0.0782
2	0.0398	0.0271	0.0566
3	0.0242	0.0258	0.0437
4	0.0218	0.0245	0.0414
5	0.0029	0.0086	0.0145
10	0.0009	0.0053	0.0089
15	0.0006	0.0027	0.0045
20	0.0005	0.0017	0.0020
25	0.0003	0.0012	0.0009
30	0.0003	0.0009	0.0006
35	0.0003	0.0009	0.0006

The Police Termination and Refund rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff and School Police.

Schools

Duration of Service	Entry Age 20	Entry Age 25	Entry Age 30	Entry Age 35	Entry Age 40	Entry Age 45
0	0.1730	0.1627	0.1525	0.1422	0.1319	0.1217
1	0.1585	0.1482	0.1379	0.1277	0.1174	0.1071
2	0.1440	0.1336	0.1234	0.1131	0.1028	0.0926
3	0.1295	0.1192	0.1089	0.0987	0.0884	0.0781
4	0.1149	0.1046	0.0944	0.0841	0.0738	0.0636
5	0.0278	0.0249	0.0221	0.0192	0.0164	0.0135
10	0.0172	0.0147	0.0122	0.0098	0.0074	0.0049
15	0.0115	0.0094	0.0074	0.0053	0.0032	0.0011
20	0.0073	0.0055	0.0038	0.0020	0.0002	0.0002
25	0.0037	0.0023	0.0010	0.0002	0.0002	0.0002
30	0.0015	0.0003	0.0002	0.0002	0.0002	0.0002
35	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002

Termination with Vested Benefits

Rates vary by entry age and service for Miscellaneous Plans. Rates vary by service for Safety Plans. See sample rates in tables below.

Public Agency Miscellaneous

Duration of Service	Entry Age 20	Entry Age 25	Entry Age 30	Entry Age 35	Entry Age 40
5	0.0656	0.0597	0.0537	0.0477	0.0418
10	0.0530	0.0466	0.0403	0.0339	0.0000
15	0.0443	0.0373	0.0305	0.0000	0.0000
20	0.0333	0.0261	0.0000	0.0000	0.0000
25	0.0212	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000

Public Agency Safety

Duration of Service	Fire	Police	County Peace Officer
5	0.0162	0.0163	0.0265
10	0.0061	0.0126	0.0204
15	0.0058	0.0082	0.0130
20	0.0053	0.0065	0.0074
25	0.0047	0.0058	0.0043
30	0.0045	0.0056	0.0030
35	0.0000	0.0000	0.0000

- When a member is eligible to retire, the termination with vested benefits probability is set to zero.
- After termination with vested benefits, a miscellaneous member is assumed to retire at age 59 and a safety member at age 54.
- The Police Termination with vested benefits rates are also used for Public Agency Local Prosecutors, Other Safety, Local Sheriff and School Police.

Schools

Duration of Service	Entry Age 20	Entry Age 25	Entry Age 30	Entry Age 35	Entry Age 40
5	0.0816	0.0733	0.0649	0.0566	0.0482
10	0.0629	0.0540	0.0450	0.0359	0.0000
15	0.0537	0.0440	0.0344	0.0000	0.0000
20	0.0420	0.0317	0.0000	0.0000	0.0000
25	0.0291	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000

Non-Industrial (Not Job-Related) Disability

Rates vary by age and gender for Miscellaneous Plans. Rates vary by age and category for Safety Plans.

Age	Miscellaneous		Fire	Police	County Peace Officer	Schools	
	Male	Female	Male and Female	Male and Female	Male and Female	Male	Female
20	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
25	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
30	0.0002	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001
35	0.0006	0.0009	0.0001	0.0003	0.0004	0.0006	0.0004
40	0.0015	0.0016	0.0001	0.0004	0.0007	0.0014	0.0009
45	0.0025	0.0024	0.0002	0.0005	0.0013	0.0028	0.0017
50	0.0033	0.0031	0.0005	0.0008	0.0018	0.0044	0.0030
55	0.0037	0.0031	0.0010	0.0013	0.0010	0.0049	0.0034
60	0.0038	0.0025	0.0015	0.0020	0.0006	0.0043	0.0024

- The Miscellaneous Non-Industrial Disability rates are used for Local Prosecutors.
- The Police Non-Industrial Disability rates are also used for Other Safety, Local Sheriff and School Police.

Industrial (Job-Related) Disability

Rates vary by age and category.

Age	Fire	Police	County Peace Officer
20	0.0002	0.0007	0.0003
25	0.0012	0.0032	0.0015
30	0.0025	0.0064	0.0031
35	0.0037	0.0097	0.0046
40	0.0049	0.0129	0.0063
45	0.0061	0.0161	0.0078
50	0.0074	0.0192	0.0101
55	0.0721	0.0668	0.0173
60	0.0721	0.0668	0.0173

- The Police Industrial Disability rates are also used for Local Sheriff and Other Safety.
- Fifty Percent of the Police Industrial Disability rates are used for School Police.
- One Percent of the Police Industrial Disability rates are used for Local Prosecutors.
- Normally, rates are zero for Miscellaneous Plans unless the agency has specifically contracted for Industrial Disability benefits. If so, each miscellaneous non-industrial disability rate will be split into two components: 50 percent will become the Non-Industrial Disability rate and 50 percent will become the Industrial Disability rate.

Service Retirement

Retirement rates vary by age, service, and formula, except for the safety ½ @ 55 and 2% @ 55 formulas, where retirement rates vary by age only.

Service Retirement

Public Agency Miscellaneous 1.5% @ 65

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.008	0.011	0.013	0.015	0.017	0.019
51	0.007	0.010	0.012	0.013	0.015	0.017
52	0.010	0.014	0.017	0.019	0.021	0.024
53	0.008	0.012	0.015	0.017	0.019	0.022
54	0.012	0.016	0.019	0.022	0.025	0.028
55	0.018	0.025	0.031	0.035	0.038	0.043
56	0.015	0.021	0.025	0.029	0.032	0.036
57	0.020	0.028	0.033	0.038	0.043	0.048
58	0.024	0.033	0.040	0.046	0.052	0.058
59	0.028	0.039	0.048	0.054	0.060	0.067
60	0.049	0.069	0.083	0.094	0.105	0.118
61	0.062	0.087	0.106	0.120	0.133	0.150
62	0.104	0.146	0.177	0.200	0.223	0.251
63	0.099	0.139	0.169	0.191	0.213	0.239
64	0.097	0.136	0.165	0.186	0.209	0.233
65	0.140	0.197	0.240	0.271	0.302	0.339
66	0.092	0.130	0.157	0.177	0.198	0.222
67	0.129	0.181	0.220	0.249	0.277	0.311
68	0.092	0.129	0.156	0.177	0.197	0.221
69	0.092	0.130	0.158	0.178	0.199	0.224
70	0.103	0.144	0.175	0.198	0.221	0.248

Public Agency Miscellaneous 2% @ 60

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.011	0.015	0.018	0.021	0.023	0.026
51	0.009	0.013	0.016	0.018	0.020	0.023
52	0.013	0.018	0.022	0.025	0.028	0.031
53	0.011	0.016	0.019	0.022	0.025	0.028
54	0.015	0.021	0.025	0.028	0.032	0.036
55	0.023	0.032	0.039	0.044	0.049	0.055
56	0.019	0.027	0.032	0.037	0.041	0.046
57	0.025	0.035	0.042	0.048	0.054	0.060
58	0.030	0.042	0.051	0.058	0.065	0.073
59	0.035	0.049	0.060	0.068	0.076	0.085
60	0.062	0.087	0.105	0.119	0.133	0.149
61	0.079	0.110	0.134	0.152	0.169	0.190
62	0.132	0.186	0.225	0.255	0.284	0.319
63	0.126	0.178	0.216	0.244	0.272	0.305
64	0.122	0.171	0.207	0.234	0.262	0.293
65	0.173	0.243	0.296	0.334	0.373	0.418
66	0.114	0.160	0.194	0.219	0.245	0.274
67	0.159	0.223	0.271	0.307	0.342	0.384
68	0.113	0.159	0.193	0.218	0.243	0.273
69	0.114	0.161	0.195	0.220	0.246	0.276
70	0.127	0.178	0.216	0.244	0.273	0.306

Service Retirement

Public Agency Miscellaneous 2% @ 55

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.015	0.020	0.024	0.029	0.033	0.039
51	0.013	0.016	0.020	0.024	0.027	0.033
52	0.014	0.018	0.022	0.027	0.030	0.036
53	0.017	0.022	0.027	0.032	0.037	0.043
54	0.027	0.034	0.041	0.049	0.056	0.067
55	0.050	0.064	0.078	0.094	0.107	0.127
56	0.045	0.057	0.069	0.083	0.095	0.113
57	0.048	0.061	0.074	0.090	0.102	0.122
58	0.052	0.066	0.080	0.097	0.110	0.131
59	0.060	0.076	0.092	0.111	0.127	0.151
60	0.072	0.092	0.112	0.134	0.153	0.182
61	0.089	0.113	0.137	0.165	0.188	0.224
62	0.128	0.162	0.197	0.237	0.270	0.322
63	0.129	0.164	0.199	0.239	0.273	0.325
64	0.116	0.148	0.180	0.216	0.247	0.294
65	0.174	0.221	0.269	0.323	0.369	0.439
66	0.135	0.171	0.208	0.250	0.285	0.340
67	0.133	0.169	0.206	0.247	0.282	0.336
68	0.118	0.150	0.182	0.219	0.250	0.297
69	0.116	0.147	0.179	0.215	0.246	0.293
70	0.138	0.176	0.214	0.257	0.293	0.349

Public Agency Miscellaneous 2.5% @ 55

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.026	0.033	0.040	0.048	0.055	0.062
51	0.021	0.026	0.032	0.038	0.043	0.049
52	0.021	0.026	0.032	0.038	0.043	0.049
53	0.026	0.033	0.040	0.048	0.055	0.062
54	0.043	0.054	0.066	0.078	0.089	0.101
55	0.088	0.112	0.136	0.160	0.184	0.208
56	0.055	0.070	0.085	0.100	0.115	0.130
57	0.061	0.077	0.094	0.110	0.127	0.143
58	0.072	0.091	0.111	0.130	0.150	0.169
59	0.083	0.105	0.128	0.150	0.173	0.195
60	0.088	0.112	0.136	0.160	0.184	0.208
61	0.083	0.105	0.128	0.150	0.173	0.195
62	0.121	0.154	0.187	0.220	0.253	0.286
63	0.105	0.133	0.162	0.190	0.219	0.247
64	0.105	0.133	0.162	0.190	0.219	0.247
65	0.143	0.182	0.221	0.260	0.299	0.338
66	0.105	0.133	0.162	0.190	0.219	0.247
67	0.105	0.133	0.162	0.190	0.219	0.247
68	0.105	0.133	0.162	0.190	0.219	0.247
69	0.105	0.133	0.162	0.190	0.219	0.247
70	0.125	0.160	0.194	0.228	0.262	0.296

Service Retirement

Public Agency Miscellaneous 2.7% @ 55

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.028	0.035	0.043	0.050	0.058	0.065
51	0.022	0.028	0.034	0.040	0.046	0.052
52	0.022	0.028	0.034	0.040	0.046	0.052
53	0.028	0.035	0.043	0.050	0.058	0.065
54	0.044	0.056	0.068	0.080	0.092	0.104
55	0.091	0.116	0.140	0.165	0.190	0.215
56	0.061	0.077	0.094	0.110	0.127	0.143
57	0.063	0.081	0.098	0.115	0.132	0.150
58	0.074	0.095	0.115	0.135	0.155	0.176
59	0.083	0.105	0.128	0.150	0.173	0.195
60	0.088	0.112	0.136	0.160	0.184	0.208
61	0.085	0.109	0.132	0.155	0.178	0.202
62	0.124	0.158	0.191	0.225	0.259	0.293
63	0.107	0.137	0.166	0.195	0.224	0.254
64	0.107	0.137	0.166	0.195	0.224	0.254
65	0.146	0.186	0.225	0.265	0.305	0.345
66	0.107	0.137	0.166	0.195	0.224	0.254
67	0.107	0.137	0.166	0.195	0.224	0.254
68	0.107	0.137	0.166	0.195	0.224	0.254
69	0.107	0.137	0.166	0.195	0.224	0.254
70	0.129	0.164	0.199	0.234	0.269	0.304

Public Agency Miscellaneous 3% @ 60

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.026	0.033	0.040	0.048	0.055	0.062
51	0.021	0.026	0.032	0.038	0.043	0.049
52	0.019	0.025	0.030	0.035	0.040	0.046
53	0.025	0.032	0.038	0.045	0.052	0.059
54	0.039	0.049	0.060	0.070	0.081	0.091
55	0.083	0.105	0.128	0.150	0.173	0.195
56	0.055	0.070	0.085	0.100	0.115	0.130
57	0.061	0.077	0.094	0.110	0.127	0.143
58	0.072	0.091	0.111	0.130	0.150	0.169
59	0.080	0.102	0.123	0.145	0.167	0.189
60	0.094	0.119	0.145	0.170	0.196	0.221
61	0.088	0.112	0.136	0.160	0.184	0.208
62	0.127	0.161	0.196	0.230	0.265	0.299
63	0.110	0.140	0.170	0.200	0.230	0.260
64	0.110	0.140	0.170	0.200	0.230	0.260
65	0.149	0.189	0.230	0.270	0.311	0.351
66	0.110	0.140	0.170	0.200	0.230	0.260
67	0.110	0.140	0.170	0.200	0.230	0.260
68	0.110	0.140	0.170	0.200	0.230	0.260
69	0.110	0.140	0.170	0.200	0.230	0.260
70	0.132	0.168	0.204	0.240	0.276	0.312

Service Retirement

Public Agency Miscellaneous 2% @ 62

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
51	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52	0.0103	0.0132	0.0160	0.0188	0.0216	0.0244
53	0.0131	0.0167	0.0202	0.0238	0.0273	0.0309
54	0.0213	0.0272	0.0330	0.0388	0.0446	0.0504
55	0.0440	0.0560	0.0680	0.0800	0.0920	0.1040
56	0.0303	0.0385	0.0468	0.0550	0.0633	0.0715
57	0.0363	0.0462	0.0561	0.0660	0.0759	0.0858
58	0.00465	0.0592	0.0718	0.0845	0.0972	0.1099
59	0.0578	0.0735	0.0893	0.1050	0.1208	0.1365
60	0.0616	0.0784	0.0952	0.1120	0.1288	0.1456
61	0.0888	0.0788	0.0956	0.1125	0.1294	0.1463
62	0.0941	0.1232	0.1496	0.1760	0.2024	0.2288
63	0.1287	0.1131	0.1373	0.1615	0.1857	0.2100
64	0.1045	0.1197	0.1454	0.1710	0.1967	0.2223
65	0.1045	0.1638	0.1989	0.2340	0.2691	0.3042
66	0.1045	0.1330	0.1615	0.1900	0.2185	0.2470
67	0.1045	0.1330	0.1615	0.1900	0.2185	0.2470
68	0.1045	0.1330	0.1615	0.1900	0.2185	0.2470
69	0.1045	0.1330	0.1615	0.1900	0.2185	0.2470
70	0.1254	0.1596	0.1938	0.2280	0.2622	0.9640

Service Retirement

Public Agency Fire 1/2 @ 55 and 2% @ 55

Age	Rate	Age	Rate
50	0.01588	56	0.11079
51	0.00000	57	0.00000
52	0.03442	58	0.09499
53	0.01990	59	0.04409
54	0.04132	60	1.00000
55	0.07513		

Public Agency Police 1/2 @ 55 and 2% @ 55

Age	Rate	Age	Rate
50	0.02552	56	0.06921
51	0.00000	57	0.05113
52	0.01637	58	0.07241
53	0.02717	59	0.07043
54	0.00949	60	1.00000
55	0.16674		

Service Retirement

Public Agency Police 2% @ 50						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.014	0.014	0.014	0.014	0.025	0.045
51	0.012	0.012	0.012	0.012	0.023	0.040
52	0.026	0.026	0.026	0.026	0.048	0.086
53	0.052	0.052	0.052	0.052	0.096	0.171
54	0.070	0.070	0.070	0.070	0.128	0.227
55	0.090	0.090	0.090	0.090	0.165	0.293
56	0.064	0.064	0.064	0.064	0.117	0.208
57	0.071	0.071	0.071	0.071	0.130	0.232
58	0.063	0.063	0.063	0.063	0.115	0.205
59	0.140	0.140	0.140	0.140	0.174	0.254
60	0.140	0.140	0.140	0.140	0.172	0.251
61	0.140	0.140	0.140	0.140	0.172	0.251
62	0.140	0.140	0.140	0.140	0.172	0.251
63	0.140	0.140	0.140	0.140	0.172	0.251
64	0.140	0.140	0.140	0.140	0.172	0.251
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

Service Retirement

Public Agency Fire 2% @ 50						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.007	0.007	0.007	0.007	0.010	0.015
51	0.008	0.008	0.008	0.008	0.013	0.019
52	0.017	0.017	0.017	0.017	0.027	0.040
53	0.047	0.047	0.047	0.047	0.072	0.107
54	0.064	0.064	0.064	0.064	0.098	0.147
55	0.087	0.087	0.087	0.087	0.134	0.200
56	0.078	0.078	0.078	0.078	0.120	0.180
57	0.090	0.090	0.090	0.090	0.139	0.208
58	0.079	0.079	0.079	0.079	0.122	0.182
59	0.073	0.073	0.073	0.073	0.112	0.168
60	0.114	0.114	0.114	0.114	0.175	0.262
61	0.114	0.114	0.114	0.114	0.175	0.262
62	0.114	0.114	0.114	0.114	0.175	0.262
63	0.114	0.114	0.114	0.114	0.175	0.262
64	0.114	0.114	0.114	0.114	0.175	0.262
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement

Public Agency Police 3% @ 55						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.019	0.019	0.019	0.019	0.040	0.060
51	0.024	0.024	0.024	0.024	0.049	0.074
52	0.024	0.024	0.024	0.024	0.051	0.077
53	0.059	0.059	0.059	0.059	0.121	0.183
54	0.069	0.069	0.069	0.069	0.142	0.215
55	0.116	0.116	0.116	0.116	0.240	0.363
56	0.076	0.076	0.076	0.076	0.156	0.236
57	0.058	0.058	0.058	0.058	0.120	0.181
58	0.076	0.076	0.076	0.076	0.157	0.237
59	0.094	0.094	0.094	0.094	0.193	0.292
60	0.141	0.141	0.141	0.141	0.290	0.438
61	0.094	0.094	0.094	0.094	0.193	0.292
62	0.118	0.118	0.118	0.118	0.241	0.365
63	0.094	0.094	0.094	0.094	0.193	0.292
64	0.094	0.094	0.094	0.094	0.193	0.292
65	1.000	1.000	1.000	1.000	1.000	1.000

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

Service Retirement

Public Agency Fire 3% @ 55						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.012	0.012	0.012	0.018	0.028	0.033
51	0.008	0.008	0.008	0.012	0.019	0.022
52	0.018	0.018	0.018	0.027	0.042	0.050
53	0.043	0.043	0.043	0.062	0.098	0.114
54	0.057	0.057	0.057	0.083	0.131	0.152
55	0.092	0.092	0.092	0.134	0.211	0.246
56	0.081	0.081	0.081	0.118	0.187	0.218
57	0.100	0.100	0.100	0.146	0.230	0.268
58	0.081	0.081	0.081	0.119	0.187	0.219
59	0.078	0.078	0.078	0.113	0.178	0.208
60	0.117	0.117	0.117	0.170	0.267	0.312
61	0.078	0.078	0.078	0.113	0.178	0.208
62	0.098	0.098	0.098	0.141	0.223	0.260
63	0.078	0.078	0.078	0.113	0.178	0.208
64	0.078	0.078	0.078	0.113	0.178	0.208
65	1.000	1.000	1.000	1.000	1.000	1.000

Service Retirement

Public Agency Police 2% @ 57						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0110	0.0110	0.0110	0.0110	0.0202	0.0361
51	0.0086	0.0086	0.0086	0.0086	0.0158	0.0281
52	0.0183	0.0183	0.0183	0.0183	0.0336	0.0599
53	0.0366	0.0366	0.0366	0.0366	0.0670	0.1194
54	0.0488	0.0488	0.0488	0.0488	0.0893	0.1592
55	0.0629	0.0629	0.0629	0.0629	0.1152	0.2052
56	0.0447	0.0447	0.0447	0.0447	0.0816	0.1455
57	0.0640	0.0640	0.0640	0.0640	0.1170	0.2086
58	0.0471	0.0471	0.0471	0.0471	0.0862	0.1537
59	0.1047	0.1047	0.1047	0.1047	0.1301	0.1908
60	0.1047	0.1047	0.1047	0.1047	0.1289	0.1880
61	0.1047	0.1047	0.1047	0.1047	0.1289	0.1880
62	0.1047	0.1047	0.1047	0.1047	0.1289	0.1880
63	0.1047	0.1047	0.1047	0.1047	0.1289	0.1880
64	0.1047	0.1047	0.1047	0.1047	0.1289	0.1880
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.000

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

Service Retirement

Public Agency Fire 2% @ 57						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0052	0.0052	0.0052	0.0052	0.0081	0.0121
51	0.0057	0.0057	0.0057	0.0057	0.0088	0.0131
52	0.0121	0.0121	0.0121	0.0121	0.0187	0.0280
53	0.0326	0.0326	0.0326	0.0326	0.0501	0.0750
54	0.0447	0.0447	0.0447	0.0447	0.0688	0.1030
55	0.0608	0.0608	0.0608	0.0608	0.0935	0.1400
56	0.0545	0.0545	0.0545	0.0545	0.0840	0.1257
57	0.0811	0.0811	0.0811	0.0811	0.01248	0.1869
58	0.0593	0.0593	0.0593	0.0593	0.0913	0.1366
59	0.0547	0.0547	0.0547	0.0547	0.0842	0.1261
60	0.0851	0.0851	0.0851	0.0851	0.1310	0.1961
61	0.0852	0.0852	0.0852	0.0852	0.1312	0.1964
62	0.0852	0.0852	0.0852	0.0852	0.1312	0.1964
63	0.0852	0.0852	0.0852	0.0852	0.1312	0.1964
64	0.0852	0.0852	0.0852	0.0852	0.1312	0.1964
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Service Retirement

Public Agency Police 2.5% @ 57						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0138	0.0138	0.0138	0.0138	0.0253	0.0451
51	0.0117	0.0117	0.0117	0.0117	0.0215	0.0382
52	0.0249	0.0249	0.0249	0.0249	0.0456	0.0812
53	0.0471	0.0471	0.0471	0.0471	0.0861	0.1535
54	0.0627	0.0627	0.0627	0.0627	0.1148	0.2047
55	0.0764	0.0764	0.0764	0.0764	0.1398	0.2492
56	0.0542	0.0542	0.0542	0.0542	0.0991	0.1767
57	0.0711	0.0711	0.0711	0.0711	0.1300	0.2318
58	0.0565	0.0565	0.0565	0.0565	0.1034	0.1844
59	0.1256	0.1256	0.1256	0.1256	0.1562	0.2290
60	0.1256	0.1256	0.1256	0.1256	0.1547	0.2255
61	0.1256	0.1256	0.1256	0.1256	0.1547	0.2255
62	0.1256	0.1256	0.1256	0.1256	0.1547	0.2255
63	0.1256	0.1256	0.1256	0.1256	0.1547	0.2255
64	0.1256	0.1256	0.1256	0.1256	0.1547	0.2255
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.000

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

Service Retirement

Public Agency Fire 2.5% @ 57						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0065	0.0065	0.0065	0.0065	0.0101	0.0151
51	0.0077	0.0077	0.0077	0.0077	0.0119	0.0178
52	0.0164	0.0164	0.0164	0.0164	0.0254	0.0380
53	0.0419	0.0419	0.0419	0.0419	0.0644	0.0965
54	0.0574	0.0574	0.0574	0.0574	0.0885	0.1324
55	0.0738	0.0738	0.0738	0.0738	0.1136	0.1700
56	0.0662	0.0662	0.0662	0.0662	0.1020	0.2077
57	0.0901	0.0901	0.0901	0.0901	0.1387	0.1639
58	0.0711	0.0711	0.0711	0.0711	0.1095	0.1513
59	0.0656	0.0656	0.0656	0.0656	0.1011	0.2354
60	0.1022	0.1022	0.1022	0.1022	0.1572	0.2356
61	0.1022	0.1022	0.1022	0.1022	0.1574	0.2356
62	0.1022	0.1022	0.1022	0.1022	0.1574	0.2356
63	0.1022	0.1022	0.1022	0.1022	0.1574	0.2356
64	0.1022	0.1022	0.1022	0.1022	0.1574	0.2356
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Service Retirement

Public Agency Police 2.7% @ 57						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0138	0.0138	0.0138	0.0138	0.0253	0.0451
51	0.0123	0.0123	0.0123	0.0123	0.0226	0.0402
52	0.0249	0.0249	0.0249	0.0249	0.0456	0.0812
53	0.0497	0.0497	0.0497	0.0497	0.0909	0.1621
54	0.0662	0.0662	0.0662	0.0662	0.1211	0.2160
55	0.0854	0.0854	0.0854	0.0854	0.1563	0.2785
56	0.0606	0.0606	0.0606	0.0606	0.1108	0.1975
57	0.0711	0.0711	0.0711	0.0711	0.1300	0.2318
58	0.0628	0.0628	0.0628	0.0628	0.1149	0.2049
59	0.1396	0.1396	0.1396	0.1396	0.1735	0.2544
60	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
61	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
62	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
63	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
64	0.1396	0.1396	0.1396	0.1396	0.1719	0.2506
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

- These rates also apply to Local Prosecutors, Local Sheriff, School Police and Other Safety.

Service Retirement

Public Agency Fire 2.7% @ 57						
Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.0065	0.0065	0.0065	0.0065	0.0101	0.0151
51	0.0081	0.0081	0.0081	0.0081	0.0125	0.0187
52	0.0164	0.0164	0.0164	0.0164	0.0254	0.0380
53	0.0442	0.0442	0.0442	0.0442	0.0680	0.1018
54	0.0606	0.0606	0.0606	0.0606	0.0934	0.1397
55	0.0825	0.0825	0.0825	0.0825	0.1269	0.1900
56	0.0740	0.0740	0.0740	0.0740	0.1140	0.1706
57	0.0901	0.0901	0.0901	0.0901	0.1387	0.2077
58	0.0790	0.0790	0.0790	0.0790	0.1217	0.1821
59	0.0729	0.0729	0.0729	0.0729	0.1123	0.1681
60	0.1135	0.1135	0.1135	0.1135	0.1747	0.2615
61	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
62	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
63	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
64	0.1136	0.1136	0.1136	0.1136	0.1749	0.2618
65	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Service Retirement

Schools 2% @ 55

Age	Duration of Service					
	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
50	0.005	0.009	0.013	0.015	0.016	0.018
51	0.005	0.010	0.014	0.017	0.019	0.021
52	0.006	0.012	0.017	0.020	0.022	0.025
53	0.007	0.014	0.019	0.023	0.026	0.029
54	0.012	0.024	0.033	0.039	0.044	0.049
55	0.024	0.048	0.067	0.079	0.088	0.099
56	0.020	0.039	0.055	0.065	0.072	0.081
57	0.021	0.042	0.059	0.070	0.078	0.087
58	0.025	0.050	0.070	0.083	0.092	0.103
59	0.029	0.057	0.080	0.095	0.105	0.118
60	0.037	0.073	0.102	0.121	0.134	0.150
61	0.046	0.090	0.126	0.149	0.166	0.186
62	0.076	0.151	0.212	0.250	0.278	0.311
63	0.069	0.136	0.191	0.225	0.251	0.281
64	0.067	0.133	0.185	0.219	0.244	0.273
65	0.091	0.180	0.251	0.297	0.331	0.370
66	0.072	0.143	0.200	0.237	0.264	0.295
67	0.067	0.132	0.185	0.218	0.243	0.272
68	0.060	0.118	0.165	0.195	0.217	0.243
69	0.067	0.133	0.187	0.220	0.246	0.275
70	0.066	0.131	0.183	0.216	0.241	0.270

Miscellaneous

Superfunded Status

Prior to enactment of the Public Employees’ Pension Reform Act (PEPRA) that became effective January 1, 2013, a plan in superfunded status (actuarial value of assets exceeding present value of benefits) would normally pay a zero employer contribution rate while also being permitted to use its superfunded assets to pay its employees’ normal member contributions.

However, Section 7522.52(a) of PEPRA states, “In any fiscal year a public employer’s contribution to a defined benefit plan, in combination with employee contributions to that defined benefit plan, shall not be less than the total normal cost rate...” This means that not only must employers pay their employer normal cost regardless of plan surplus, but also, employers may no longer use superfunded assets to pay employee normal member contributions.

Internal Revenue Code Section 415

The limitations on benefits imposed by Internal Revenue Code Section 415 are taken into account in this valuation. Each year the impact of any changes in this limitation since the prior valuation is included and amortized as part of the actuarial gain or loss base. This results in lower contributions for those employers contributing to the Replacement Benefit Fund and protects CalPERS from prefunding expected benefits in excess of limits imposed by federal tax law.

Internal Revenue Code Section 401(a)(17)

The limitations on compensation imposed by Internal Revenue Code Section 401(a)(17) are taken into account in this valuation. Each year, the impact of any changes in the compensation limitation since the prior valuation is included and amortized as part of the actuarial gain or loss base.

PEPRA Assumptions

The Public Employees' Pension Reform Act of 2013 (PEPRA) mandated new benefit formulas and new member contributions for new members (as defined by PEPRA) hired after January 1, 2013. For non-pooled plans, these new members will first be reflected in the June 30, 2013 non-pooled plan valuations. New members in pooled plans will first be reflected in the new Miscellaneous and Safety risk pools created by the CalPERS Board in November 2012 in response to the passage of PEPRA, also beginning with the June 30, 2013 valuation. Different assumptions for these new PEPRA members are disclosed above.

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APPENDIX B

PRINCIPAL PLAN PROVISIONS

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The following is a description of the principal plan provisions used in calculating costs and liabilities. We have indicated whether a plan provision is standard or optional. Standard benefits are applicable to all members while optional benefits vary among employers. Optional benefits that apply to a single period of time, such as Golden Handshakes, have not been included. Many of the statements in this summary are general in nature, and are intended to provide an easily understood summary of the complex Public Employees' Retirement Law. The law itself governs in all situations.

PEPRA Benefit Changes

The Public Employees' Pension Reform Act of 2013 (PEPRA) requires new benefits and member contributions for new members as defined by PEPRA, that are hired after January 1, 2013. These PEPRA members are reflected in your June 30, 2013 actuarial valuation. Members in pooled plans are reflected in the new Miscellaneous and Safety risk pools created by the CalPERS Board in response to the passage of PEPRA, beginning with the June 30, 2013 valuation.

Service Retirement

Eligibility

A classic CalPERS member or PEPRA Safety member becomes eligible for Service Retirement upon attainment of age 50 with at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements). For employees hired into a plan with the 1.5% at 65 formula, eligibility for service retirement is age 55 with at least 5 years of service. PEPRA miscellaneous members become eligible for Service Retirement upon attainment of age 52 with at least 5 years of service.

Benefit

The Service Retirement benefit is a monthly allowance equal to the product of the *benefit factor*, *years of service*, and *final compensation*.

- The *benefit factor* depends on the benefit formula specified in your agency's contract. The table below shows the factors for each of the available formulas. Factors vary by the member's age at retirement. Listed are the factors for retirement at whole year ages:

Miscellaneous Plan Formulas

Retirement Age	1.5% at 65	2% at 60	2% at 55	2.5% at 55	2.7% at 55	3% at 60	PEPRA 2% at 62
50	0.5000%	1.092%	1.426%	2.000%	2.000%	2.000%	N/A
51	0.5667%	1.156%	1.522%	2.100%	2.140%	2.100%	N/A
52	0.6334%	1.224%	1.628%	2.200%	2.280%	2.200%	1.000%
53	0.7000%	1.296%	1.742%	2.300%	2.420%	2.300%	1.100%
54	0.7667%	1.376%	1.866%	2.400%	2.560%	2.400%	1.200%
55	0.8334%	1.460%	2.000%	2.500%	2.700%	2.500%	1.300%
56	0.9000%	1.552%	2.052%	2.500%	2.700%	2.600%	1.400%
57	0.9667%	1.650%	2.104%	2.500%	2.700%	2.700%	1.500%
58	1.0334%	1.758%	2.156%	2.500%	2.700%	2.800%	1.600%
59	1.1000%	1.874%	2.210%	2.500%	2.700%	2.900%	1.700%
60	1.1667%	2.000%	2.262%	2.500%	2.700%	3.000%	1.800%
61	1.2334%	2.134%	2.314%	2.500%	2.700%	3.000%	1.900%
62	1.3000%	2.272%	2.366%	2.500%	2.700%	3.000%	2.000%

63	1.3667%	2.418%	2.418%	2.500%	2.700%	3.000%	2.100%
64	1.4334%	2.418%	2.418%	2.500%	2.700%	3.000%	2.200%
65	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.300%
66	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.400%
67 & up	1.5000%	2.418%	2.418%	2.500%	2.700%	3.000%	2.500%

Safety Plan Formulas

Retirement Age	½ at 55 *	2% at 55	2% at 50	3% at 55	3% at 50
50	1.783%	1.426%	2.000%	2.400%	3.000%
51	1.903%	1.522%	2.140%	2.520%	3.000%
52	2.035%	1.628%	2.280%	2.640%	3.000%
53	2.178%	1.742%	2.420%	2.760%	3.000%
54	2.333%	1.866%	2.560%	2.880%	3.000%
55 & Up	2.500%	2.000%	2.700%	3.000%	3.000%

* For this formula, the benefit factor also varies by entry age. The factors shown are for members with an entry age of 35 or greater. If entry age is less than 35, then the age 55 benefit factor is 50 percent divided by the difference between age 55 and entry age. The benefit factor for ages prior to age 55 is the same proportion of the age 55 benefit factor as in the above table.

PEPRA Safety Plan Formulas

Retirement Age	2% at 57	2.5% at 57	2.7% at 57
50	1.426%	2.000%	2.000%
51	1.508%	2.071%	2.100%
52	1.590%	2.143%	2.200%
53	1.672%	2.214%	2.300%
54	1.754%	2.286%	2.400%
55	1.836%	2.357%	2.500%
56	1.918%	2.429%	2.600%
57 & Up	2.000%	2.500%	2.700%

- The *years of service* is the amount credited by CalPERS to a member while he or she is employed in this group (or for other periods that are recognized under the employer's contract with CalPERS). For a member who has earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance. An agency may contract for an optional benefit where any unused sick leave accumulated at the time of retirement will be converted to credited service at a rate of 0.004 years of service for each day of sick leave.
- The *final compensation* is the monthly average of the member's highest 36 or 12 consecutive months' full-time equivalent monthly pay (no matter which CalPERS employer paid this compensation). The standard benefit is 36 months. Employers have the option of providing a final compensation equal to the highest 12 consecutive months. Final compensation must be defined by the highest 36 consecutive months' pay under the 1.5% at 65 formula. PEPRA members have a cap on the annual salary that can be used to calculate final compensation for all new members based on the Social Security Contribution and Benefit Base. For employees that participate in

Social Security this cap is \$113,700 for 2013 and for those employees that do not participate in social security the cap for 2013 is \$136,440, the equivalent of 120 percent of the 2013 Contribution and Benefit Base. Adjustments to the caps are permitted annually based on changes to the CPI for All Urban Consumers.

- Employees must be covered by Social Security with the 1.5% at 65 formula. Social Security is optional for all other benefit formulas. For employees covered by Social Security, the Modified formula is the standard benefit. Under this type of formula, the final compensation is offset by \$133.33 (or by one third if the final compensation is less than \$400). Employers may contract for the Full benefit with Social Security that will eliminate the offset applicable to the final compensation. For employees not covered by Social Security, the Full benefit is paid with no offsets. Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is \$317 if members are not covered by Social Security or \$513 if members are covered by Social Security.
- The Miscellaneous Service Retirement benefit is not capped. The Safety Service Retirement benefit is capped at 90 percent of final compensation.

Vested Deferred Retirement

Eligibility for Deferred Status

A CalPERS member becomes eligible for a deferred vested retirement benefit when he or she leaves employment, keeps his or her contribution account balance on deposit with CalPERS, **and** has earned at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements).

Eligibility to Start Receiving Benefits

The CalPERS classic members and Safety PEPRA members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for Deferred Status and upon attainment of age 50 (55 for employees hired into a 1.5% @ 65 plan). PEPRA Miscellaneous members become eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for Deferred Status and upon attainment of age 52.

Benefit

The vested deferred retirement benefit is the same as the Service Retirement benefit, where the benefit factor is **based on the member's age at allowance commencement. For members who have earned service with multiple CalPERS employers, the benefit from each employer is calculated separately according to each employer's contract, and then added together for the total allowance.**

Non-Industrial (Non-Job Related) Disability Retirement

Eligibility

A CalPERS member is eligible for Non-Industrial Disability Retirement if he or she becomes *disabled* and has at least 5 years of credited service (total service across all CalPERS employers, and with certain other Retirement Systems with which CalPERS has reciprocity agreements). There is no special age requirement. *Disabled* means the member is unable to perform his or her job because of an illness or injury, which is expected to be permanent or to last indefinitely. The illness or injury does not have to be job related. A CalPERS member must be actively employed by any CalPERS employer at the time of disability in order to be eligible for this benefit.

Standard Benefit

The standard Non-Industrial Disability Retirement benefit is a monthly allowance equal to 1.8 percent of final compensation, multiplied by *service*, which is determined as follows:

- *Service* is CalPERS credited service, for members with less than 10 years of service or greater than 18.518 years of service; or

- *Service* is CalPERS credited service plus the additional number of years that the member would have worked until age 60, for members with at least 10 years but not more than 18.518 years of service. The maximum benefit in this case is 33 1/3 percent of Final Compensation.

Improved Benefit

Employers have the option of providing the improved Non-Industrial Disability Retirement benefit. This benefit provides a monthly allowance equal to 30 percent of final compensation for the first 5 years of service, plus 1 percent for each additional year of service to a maximum of 50 percent of final compensation.

Members who are eligible for a larger service retirement benefit may choose to receive that benefit in lieu of a disability benefit. Members eligible to retire, and who have attained the normal retirement age determined by their service retirement benefit formula, will receive the same dollar amount for disability retirement as that payable for service retirement. For members who have earned service with multiple CalPERS employers, the benefit attributed to each employer is the total disability allowance multiplied by the ratio of service with a particular employer to the total CalPERS service.

Industrial (Job Related) Disability Retirement

All safety members have this benefit. For miscellaneous members, employers have the option of providing this benefit. An employer may choose to provide the increased benefit option or the improved benefit option.

Eligibility

An employee is eligible for Industrial Disability Retirement if he or she becomes disabled while working, where disabled means the member is unable to perform the duties of the job because of a work-related illness or injury, which is, expected to be permanent or to last indefinitely. A CalPERS member who has left active employment within this group is not eligible for this benefit, except to the extent described below.

Standard Benefit

The standard Industrial Disability Retirement benefit is a monthly allowance equal to 50 percent of final compensation.

Increased Benefit (75 percent of Final Compensation)

The increased Industrial Disability Retirement benefit is a monthly allowance equal to 75 percent final compensation for total disability.

Improved Benefit (50 percent to 90 percent of Final Compensation)

The improved Industrial Disability Retirement benefit is a monthly allowance equal to the Workman's Compensation Appeals Board permanent disability rate percentage (if 50 percent or greater, with a maximum of 90 percent) times the final compensation.

For a CalPERS member not actively employed in this group who became disabled while employed by some other CalPERS employer, the benefit is a return of accumulated member contributions with respect to employment in this group. With the standard or increased benefit, a member may also choose to receive the annuitization of the accumulated member contributions.

If a member is eligible for Service Retirement and if the Service Retirement benefit is more than the Industrial Disability Retirement benefit, the member may choose to receive the larger benefit.

Post-Retirement Death Benefit

Standard Lump Sum Payment

Upon the death of a retiree, a one-time lump sum payment of \$500 will be made to the retiree's designated survivor(s), or to the retiree's estate.

Improved Lump Sum Payment

Employers have the option of providing an improved lump sum death benefit of \$600, \$2,000, \$3,000, \$4,000 or \$5,000.

Form of Payment for Retirement Allowance

Standard Form of Payment

Generally, the retirement allowance is paid to the retiree in the form of an annuity for as long as he or she is alive. The retiree may choose to provide for a portion of his or her allowance to be paid to any designated beneficiary after the retiree's death. CalPERS provides for a variety of such benefit options, which the retiree pays for by taking a reduction in his or her retirement allowance. Such reduction takes into account the amount to be provided to the beneficiary and the probable duration of payments (based on the ages of the member and beneficiary) made subsequent to the member's death.

Improved Form of Payment (Post Retirement Survivor Allowance)

Employers have the option to contract for the post retirement survivor allowance.

For retirement allowances with respect to service subject to the modified formula, 25 percent of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. For retirement allowances with respect to service subject to the full or supplemental formula, 50 percent of the retirement allowance will automatically be continued to certain statutory beneficiaries upon the death of the retiree, without a reduction in the retiree's allowance. This additional benefit is often referred to as post retirement survivor allowance (PRSA) or simply as survivor continuance.

In other words, 25 percent or 50 percent of the allowance, the continuance portion, is paid to the retiree for as long as he or she is alive, and that same amount is continued to the retiree's spouse (or if no eligible spouse, to unmarried children until they attain age 18; or, if no eligible children, to a qualifying dependent parent) for the rest of his or her lifetime. This benefit will not be discontinued in the event the spouse remarries.

The remaining 75 percent or 50 percent of the retirement allowance, which may be referred to as the option portion of the benefit, is paid to the retiree as an annuity for as long as he or she is alive. Or, the retiree may choose to provide for some of this option portion to be paid to any designated beneficiary after the retiree's death. Benefit options applicable to the option portion are the same as those offered with the standard form. The reduction is calculated in the same manner but is applied only to the option portion.

Pre-Retirement Death Benefits

Basic Death Benefit

This is a standard benefit.

Eligibility

An employee's beneficiary (or estate) may receive the Basic Death benefit if the member dies while actively employed. A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Basic Death benefit.

Benefit

The Basic Death Benefit is a lump sum in the amount of the member's accumulated contributions, where interest is currently credited at 7.5 percent per year, plus a lump sum in the amount of one month's salary for each completed year of current service, up to a maximum of six months' salary. For purposes of this benefit, one month's salary is defined as the member's average monthly full-time rate of compensation during the 12 months preceding death.

1957 Survivor Benefit

This is a standard benefit.

Eligibility

An employee's *eligible survivor(s)* may receive the 1957 Survivor benefit if the member dies while actively employed, has attained at least age 50 for Classic and Safety PEPRA members and age 52 for Miscellaneous PEPRA members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other Retirement Systems with which CalPERS has reciprocity agreements). A CalPERS member must be actively employed with the CalPERS employer providing this benefit to be eligible for this benefit. An eligible survivor means the surviving spouse to whom the member was married at least one year before death or, if there is no **eligible spouse, to the member's unmarried children under age 18. A member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this 1957 Survivor benefit.**

Benefit

The 1957 Survivor benefit is a monthly allowance equal to one-half of the unmodified Service Retirement benefit that the member would have been entitled to receive if the member had retired on the date of his or her death. If the benefit is payable to the spouse, the benefit is discontinued upon the death of the spouse. If the benefit is payable to a dependent child, the benefit will be discontinued upon death or attainment of age 18, unless the child is disabled. The total amount paid will be at least equal to the Basic Death benefit.

Optional Settlement 2W Death Benefit

This is an optional benefit.

Eligibility

An employee's *eligible survivor* may receive the Optional Settlement 2W Death benefit if the member dies while actively employed, has attained at least age 50 for Classic and Safety PEPRA members and age 52 for Miscellaneous PEPRA members, and has at least 5 years of credited service (total service across all CalPERS employers and with certain other Retirement Systems with which CalPERS has reciprocity agreements). A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married at least one year before death. A **member's survivor who is eligible for any other pre-retirement death benefit may choose to receive that death benefit instead of this Optional Settlement 2W Death benefit.**

Benefit

The Optional Settlement 2W Death benefit is a monthly allowance equal to the Service Retirement benefit that the member would have received had the member retired on the date of his or her death and elected Optional Settlement 2W. (A retiree who elects Optional Settlement 2W receives an allowance that has been reduced so that it will continue to be paid after his or her death to a surviving beneficiary.) The allowance is payable as long as the surviving spouse lives, at which time it is continued to any unmarried children under age 18, if applicable. The total amount paid will be at least equal to the Basic Death Benefit.

Special Death Benefit

This is a standard benefit for safety members. An employer may elect to provide this benefit for miscellaneous members.

Eligibility

An employee's *eligible survivor(s)* may receive the Special Death benefit if the member dies while actively employed and the death is job-related. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was

married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried children under age 22. An eligible survivor who chooses to receive this benefit will not receive any other death benefit.

Benefit

The Special Death benefit is a monthly allowance equal to 50 percent of final compensation, and will be increased whenever the compensation paid to active employees is increased but ceasing to increase when the member would have attained age 50. The allowance is payable to the surviving spouse until death at which time the allowance is continued to any unmarried children under age 22. There is a guarantee that the total amount paid will at least equal the Basic Death Benefit.

If the member's death is the result of an accident or injury caused by external violence or physical force incurred in the performance of the member's duty, and there are *eligible* surviving children (*eligible* means unmarried children under age 22) in addition to an eligible spouse, then an **additional monthly allowance** is paid equal to the following:

1.	if 1 eligible child:	12.5 percent of final compensation
2.	if 2 eligible children:	20.0 percent of final compensation
3.	if 3 or more eligible children:	25.0 percent of final compensation

Alternate Death Benefit for Local Fire Members

This is an optional benefit available only to local fire members.

Eligibility

An employee's *eligible survivor(s)* may receive the Alternate Death benefit in lieu of the Basic Death Benefit or the 1957 Survivor Benefit if the member dies while actively employed and has at least 20 years of total CalPERS service. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. An *eligible survivor* means the surviving spouse to whom the member was married prior to the onset of the injury or illness that resulted in death. If there is no eligible spouse, an eligible survivor means the member's unmarried children under age 18.

Benefit

The Alternate Death benefit is a monthly allowance equal to the Service Retirement benefit that the member would have received had the member retired on the date of his or her death and elected Optional Settlement 2W. (A retiree who elects Optional Settlement 2W receives an allowance that has been reduced so that it will continue to be paid after his or her death to a surviving beneficiary.) If the member has not yet attained age 50, the benefit is equal to that which would be payable if the member had retired at age 50, based on service credited at the time of death. The allowance is payable as long as the surviving spouse lives, at which time it is continued to any unmarried children under age 18, if applicable. The total amount paid will be at least equal to the Basic Death Benefit.

Cost-of-Living Adjustments (COLA)

Standard Benefit

Beginning the second calendar year after the year of retirement, retirement and survivor allowances will be annually adjusted on a compound basis by 2 percent.

Improved Benefit

Employers have the option of providing any of these improved cost-of-living adjustments by contracting for any one of these Class 1 optional benefits. An improved COLA is not available in conjunction with the 1.5% at 65 formula.

Beginning the second calendar year after the year of retirement, retirement and survivor allowances will be annually adjusted on a compound basis by either 3 percent, 4 percent or 5 percent. However, the cumulative adjustment may not be greater than the cumulative change in the Consumer Price Index since the date of retirement.

Purchasing Power Protection Allowance (PPPA)

Retirement and survivor allowances are protected against inflation by PPPA. PPPA benefits are cost-of-living adjustments that are intended to maintain an individual's allowance at 80 percent of the initial allowance at retirement adjusted for inflation since retirement. The PPPA benefit will be coordinated with other cost-of-living adjustments provided under the plan.

Employee Contributions

Each employee contributes toward his or her retirement based upon the retirement formula. The standard employee contribution is as described below.

The percent contributed below the monthly compensation breakpoint is 0 percent.

The monthly compensation breakpoint is \$0 for full and supplemental formula members and \$133.33 for employees covered by the modified formula.

The percent contributed above the monthly compensation breakpoint depends upon the benefit formula, as shown in the table below.

Benefit Formula	Percent Contributed above the Breakpoint
Miscellaneous, 1.5% at 65	2%
Miscellaneous, 2% at 60	7%
Miscellaneous, 2% at 55	7%
Miscellaneous, 2.5% at 55	8%
Miscellaneous, 2.7% at 55	8%
Miscellaneous, 3% at 60	8%
Miscellaneous, 2% at 62	50% of the Total Normal Cost
Safety, 1/2 at 55	Varies by entry age
Safety, 2% at 55	7%
Safety, 2% at 50	9%
Safety, 3% at 55	9%
Safety, 3% at 50	9%
Safety, 2% at 57	50% of the Total Normal Cost
Safety, 2.5% at 57	50% of the Total Normal Cost
Safety, 2.7% at 57	50% of the Total Normal Cost

The employer may choose to "pick-up" these contributions for the employees (Employer Paid Member Contributions or EPMC). EPMC is prohibited for new PEPRAs members.

An employer may also include Employee Cost Sharing in the contract, where employees agree to share the cost of the employer contribution with or without a change in benefit. These contributions are paid in addition to the member contribution.

Auxiliary organizations of the CSUC system may elect reduced contribution rates, in which case the offset is \$317 and the contribution rate is 6 percent if members are not covered by Social Security. If members are covered by Social Security, the offset is \$513 and the contribution rate is 5 percent.

Refund of Employee Contributions

If the member's service with the employer ends, and if the member does not satisfy the eligibility conditions for any of the retirement benefits above, the member may elect to receive a refund of his or her employee contributions, which are credited annually with 6 percent interest.

1959 Survivor Benefit

This is a pre-retirement death benefit available only to members not covered by Social Security. Any agency joining CalPERS subsequent to 1993 was required to provide this benefit if the members were not covered by Social Security. The benefit is optional for agencies joining CalPERS prior to 1994. Levels 1, 2 and 3 are now closed. Any new agency or any agency wishing to add this benefit or increase the current level must choose the 4th or Indexed Level.

This benefit is not included in the results presented in this valuation. More information on this benefit is available on the CalPERS website at www.calpers.ca.gov.

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APPENDIX C

CLASSIFICATION OF OPTIONAL BENEFITS

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Classification of Optional Benefits

Below is the list of the available optional benefit provisions and their initial classification upon establishment of risk pools. When new benefits become available as a result of legislation, the Chief Actuary will determine their classification in accordance with the criteria established in the Board policy.

Class 0

Class 0 benefit surcharge is the increase in normal cost for a given benefit formula above the baseline PEPRA 2% at 57 benefit formula.

Class 1

Class 1 benefits have been identified to be additional benefits which have a significant, ongoing effect on the total plan cost. In some cases, a Class 1 benefit may be an alternate benefit formula. These benefits vary by employer across the risk pool. Agencies contracting for a Class 1 benefit will be responsible for the past service liability associated with such benefit and will be required to pay a surcharge established by the actuary to cover the ongoing cost (normal cost) of the Class 1 benefit.

The table below shows the list of Class 0 and Class 1 benefits and their applicable surcharge for each benefit formula in the Miscellaneous Risk Pool.

Optional Benefit	2% at 62	2% at 60	2% at 55	2.5% at 55	2.7% at 55	3% at 60
Class 0 Benefit	0.000%	0.530%	1.824%	2.888%	4.119%	4.886%
One Year Final Compensation	N/A	0.454%	0.509%	0.604%	0.660%	0.653%
EPMC by contract, 7%	N/A	0.850%	0.932%	1.077%	1.097%	1.178%
EPMC by contract, 8%	N/A	0.971%	1.065%	1.230%	1.305%	1.346%
25% PRSA	0.743%	0.801%	0.841%	0.941%	1.034%	1.046%
50% PRSA	0.743%	0.801%	0.841%	0.941%	1.034%	1.046%
3% Annual COLA	0.737%	0.821%	0.942%	1.124%	1.251%	1.231%
4% Annual COLA	0.737%	0.821%	0.942%	1.124%	1.251%	1.231%
5% Annual COLA	0.737%	0.821%	0.942%	1.124%	1.251%	1.231%
IDR For Local Miscellaneous Members	0.473%	0.474%	0.476%	0.461%	0.520%	0.461%
Increased IDR Allowance to 75% of Compensation	0.833%	0.833%	0.832%	0.814%	0.830%	0.807%
Employee Cost Sharing	varies	varies	varies	varies	varies	varies
Employee Contribution Rate for CSUC Auxiliary Organizations Reduced to State Member Level - Covered by Social Security	N/A	2.000%	2.000%	2.000%	2.000%	2.000%
Employee Contribution Rate for CSUC Auxiliary Organizations Reduced to State Member Level - Not Covered by Social Security	N/A	1.000%	1.000%	1.000%	1.000%	1.000%
1.5%@65	N/A	(1.010%)	N/A	N/A	N/A	N/A

For employers contracting for more than one Class 1 benefit, the surcharges listed in this table will be added together

Employee cost sharing had been eliminated as a surcharge from some of the June 30, 2010 valuations and from all of the June 30, 2011 and later valuations. It is now shown on my | CalPERS as a rate adjustment.

Class 2

Class 2 benefits have been identified to be the ancillary benefits providing one-time increases in benefits. These benefits vary by employer across the risk pool. Agencies contracting for a Class 2 benefit will be responsible for the past service liability associated with such benefit.

The following benefits shall be classified as Class 2:

- One-time 1% to 6% Ad Hoc COLA Increases for members who retired or died prior to January 1, 1998 (Section 21328)
- "Golden Handshakes" – Section 20903 Two Years Additional Service Credit
- Credit for Prior Service Paid for by the Employer
- Military Service Credit (Section 20996)
- Credit for Local Retirement System Service for Employees of Agencies Contracted on a Prospective basis (Section 20530.1)
- Prior Service Credit for Employees of an Assumed Agency Function (Section 20936)
- Limit Prior Service to Members Employed on Contract Date (Section 20938)
- Public Service Credit for Limited Prior Service (Section 21031)
- Public Service Credit for Employees of an Assumed Agency or Function (Section 21025)

Class 3

Class 3 benefits have been identified to be additional benefits which have a minimal effect on the total plan cost. Class 3 benefits may vary by rate plan within each risk pool. However, the employer contribution rate will not vary within the risk pool due to the Class 3 benefits.

The following benefits shall be classified as Class 3:

- Full formula plus social security
- Post Retirement Lump Sum Death Benefit
- \$600 lump sum retired death benefit (Section 21622)
- \$2,000 lump sum retired death benefit (Section 21623.5)
- \$3,000 lump sum retired death benefit (Section 21623.5)
- \$4,000 lump sum retired death benefit (Section 21623.5)
- \$5,000 lump sum retired death benefit (Section 21623.5)
- Improved non-industrial disability allowance (Section 21427)
- Special death benefit for local safety members (Section 21540.5)
- Service Credit Purchased by Member
- Partial Service Retirement (Section 21118)
- Optional Membership for Part Time Employees (Section 20325)
- Extension of Reciprocity Rights for Elective Officers (Section 20356)
- Removal of Contract Exclusions Prospectively Only (Section 20503)
- Alternate Death Benefit for Local Fire Members credited with 20 or more years of service (Section 21547.7)

APPENDIX D

**SUMMARY OF AMORTIZATION BASES UNDER PRIOR
RISK POOL STRUCTURE**

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Summary of Amortization Bases Under Prior Risk Pool Structure

At the CalPERS Board of Administration meeting in May, 2014 the Board adopted changes to the existing risk pooling structure and a new policy for allocating the risk pool's unfunded accrued liability. These policy changes were necessary to ensure the proper funding of the risk pools after passage of the Public Employees' Pension Reform Act of 2013 (PEPRA). The changes ensure equity within the risk pools by allocating the risk pool's unfunded accrued liability in a manner that treats each employer fairly and that maintains benefit security for the members of the System while minimizing substantial variations in employer contributions.

Shown below are the Pre-2013 Risk Pool's UALs used in allocating liability on a proportional basis to each individual risk pooled plan. The allocation of your plan's share of the UAL is developed in Section 1 of your report. More detail on the CalPERS Board's actuarial policies regarding changes to risk pooling can be found at the CalPERS website <http://www.calpers.ca.gov/index.jsp?bc=/about/board/actuarial-policies.xml>

Pre-2013 Miscellaneous 2.0% at 62 Risk Pool

			June 30, 2013
1.	Accrued Liabilities	\$	1,063,294
2.	Side Funds and Amendments		-
3.	Payroll		48,743,702

Reason for Base	Date Established	Amorti- zation Period	Balance 6/30/13	Expected Payment 2013-2014	Balance 6/30/14	Expected Payment 2014-2015	Balance 6/30/15	Scheduled Payment for 2015-2016
(GAIN)/LOSS	06/30/2013	30	(363,303)	-	(390,551)	-	(419,842)	(5,905)
TOTAL			(363,303)	-	(390,551)	-	(419,842)	(5,905)

Pre-2013 Miscellaneous 2.0% at 60 Risk Pool

June 30, 2013

1.	Accrued Liabilities	\$	798,282,602
2.	Side Funds and Amendments		(13,531,120)
3.	Payroll		223,990,047

Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-2014	Balance 6/30/14	Expected Payment 2014-2015	Balance 6/30/15	Scheduled Payment for 2015-2016
SHARE OF PRE-2013 POOL'S UAL	06/30/2013	18	38,656,564	2,040,348	39,440,327	3,081,966	39,202,900	3,169,349
ASSET (GAIN)/LOSS	06/30/2013	30	87,757,387	-	94,339,191	-	101,414,630	1,426,400
NON-ASSET (GAIN)/LOSS	06/30/2013	30	898,610	-	966,006	-	1,038,456	14,606
TOTAL			127,312,561	2,040,348	134,745,524	3,081,966	141,655,986	4,610,355

Pre-2013 Miscellaneous 2.0% at 55 Risk Pool

June 30, 2013

1.	Accrued Liabilities	\$	4,434,848,248
2.	Side Funds and Amendments		108,749,825
3.	Payroll		744,915,865

Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-2014	Balance 6/30/14	Expected Payment 2014-2015	Balance 6/30/15	Scheduled Payment for 2015-2016
SHARE OF PRE-2013 POOL'S UAL	06/30/2013	22	371,706,237	17,293,436	381,653,988	26,537,022	382,763,866	27,248,644
ASSET (GAIN)/LOSS	06/30/2013	30	442,846,571	-	476,060,064	-	511,764,569	7,197,987
NON-ASSET (GAIN)/LOSS	06/30/2013	30	(4,364,079)	-	(4,691,385)	-	(5,043,239)	(70,933)
TOTAL			810,188,729	17,293,436	853,022,667	26,537,022	889,485,196	34,375,698

Pre-2013 Miscellaneous 2.5% at 55 Risk Pool

June 30, 2013

1.	Accrued Liabilities	\$	2,389,797,201
2.	Side Funds and Amendments		84,538,467
3.	Payroll		325,503,255

Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-2014	Balance 6/30/14	Expected Payment 2014-2015	Balance 6/30/15	Scheduled Payment for 2015-2016
SHARE OF PRE-2013 POOL'S UAL	06/30/2013	21	319,504,744	17,573,392	325,247,117	23,126,761	325,662,315	23,850,771
ASSET (GAIN)/LOSS	06/30/2013	30	231,453,080	-	248,812,061	-	267,472,966	3,762,017
NON-ASSET (GAIN)/LOSS	06/30/2013	30	(2,213,098)	-	(2,379,080)	-	(2,557,511)	(35,971)
TOTAL			548,744,726	17,573,392	571,680,098	23,126,761	590,577,770	27,576,817

Pre-2013 Miscellaneous 2.7% at 55 Risk Pool

June 30, 2013

1.	Accrued Liabilities	\$	2,858,732,321
2.	Side Funds and Amendments		111,918,929
3.	Payroll		406,940,099

Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-2014	Balance 6/30/14	Expected Payment 2014-2015	Balance 6/30/15	Scheduled Payment for 2015-2016
SHARE OF PRE-2013 POOL'S UAL	06/30/2013	21	383,806,899	20,236,049	391,611,235	27,737,854	392,222,859	28,725,514
ASSET (GAIN)/LOSS	06/30/2013	30	254,938,544	-	274,058,935	-	294,613,355	4,143,747
NON-ASSET (GAIN)/LOSS	06/30/2013	30	1,004,755	-	1,080,112	-	1,161,120	16,331
TOTAL			639,750,198	20,236,049	666,750,282	27,737,854	687,997,334	32,885,592

Pre-2013 Miscellaneous 3.0% at 60 Risk Pool

June 30, 2013

1.	Accrued Liabilities	\$	1,149,488,509
2.	Side Funds and Amendments		40,940,096
3.	Payroll		149,246,052

Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-2014	Balance 6/30/14	Expected Payment 2014-2015	Balance 6/30/15	Scheduled Payment for 2015-2016
SHARE OF PRE-2013 POOL'S UAL	06/30/2013	21	133,387,408	6,979,020	136,155,460	9,618,337	136,394,614	9,989,233
ASSET (GAIN)/LOSS	06/30/2013	30	102,935,378	-	110,655,531	-	118,954,696	1,673,102
NON-ASSET (GAIN)/LOSS	06/30/2013	30	(6,811,175)	-	(7,322,013)	-	(7,871,164)	(110,708)
TOTAL			229,511,611	6,979,020	239,488,978	9,618,337	247,478,146	11,551,627

Pre-2013 Inactive Agency Risk Pool

June 30, 2013

1.	Accrued Liabilities	\$	852,436,337
2.	Side Funds and Amendments		(4,579,822)
3.	Payroll		-

Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-2014	Balance 6/30/14	Expected Payment 2014-2015	Balance 6/30/15	Scheduled Payment for 2015-2016
SHARE OF PRE-2013 POOL'S UAL	06/30/2013	24	94,820,185	4,905,216	96,845,862	8,351,316	95,450,472	8,382,126
ASSET (GAIN)/LOSS	06/30/2013	30	102,114,148	-	109,772,709	-	118,005,662	2,315,890
NON-ASSET (GAIN)/LOSS	06/30/2013	30	2,873,489	-	3,089,001	-	3,320,676	65,169
TOTAL			199,807,822	4,905,216	209,707,572	8,351,316	216,776,810	10,763,185

APPENDIX E

PARTICIPANT DATA

- **SOURCE OF THE PARTICIPANT DATA**
- **DATA VALIDATION TESTS AND ADJUSTMENTS**
- **SUMMARY OF VALUATION DATA**
- **ACTIVE MEMBERS**
- **TRANSFERRED AND TERMINATED MEMBERS**
- **RETIRED MEMBERS AND BENEFICIARIES**

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Source of the Participant Data

The data was extracted from various databases within CalPERS and placed in a database by a series of extract programs. Included in this data are:

- Individual member and beneficiary information,
- Employment and payroll information,
- Accumulated contributions with interest,
- Service information,
- Benefit payment information,
- Information about the various organizations which contract with CalPERS, and
- Detailed information about the plan provisions applicable to each group of members.

Data Validation Tests and Adjustments

Once the information is extracted from the various computer systems into the database, update queries are then run against this data to correct for flaws found in the data. This part of the process is intended to validate the participant data for all CalPERS plans. The data is then checked for reasonableness and consistency with data from the prior valuation.

Checks on the data include:

- A reconciliation of the membership of the plans,
- Comparisons of various member statistics (average attained age, average entry age, average salary, etc.) for each plan with those from the prior year valuation,
- Comparisons of pension amounts for each retiree and beneficiary receiving payments with those from the prior year valuation,
- Checks for invalid ages and dates, and
- Reasonableness checks on various key data elements such as service and salary

As a result of the tests on the data, a number of adjustments were determined to be necessary. These included:

- Dates of hire and dates of entry were adjusted where necessary to be consistent with the service fields, the date of birth and each other.

Summary of Valuation Data

June 30, 2013

1. Number of Plans in the Risk Pool		1,764
2. Active Members		
a) Counts		29,196
b) Average Attained Age		45.96
c) Average Entry Age		36.44
d) Average Years of Service		9.52
e) Average Annual Covered Pay	\$	65,408
f) Annual Covered Payroll	\$	1,909,639,449
g) Projected Annual Payroll for Contribution Year	\$	2,086,714,587
h) Present Value of Future Payroll	\$	14,999,028,486
3. Transferred Members		13,017
4. Terminated Members		17,325
5. Retired Members and Beneficiaries		
a) Counts*		26,606
b) Average Annual Benefits*	\$	18,320
6. Active to Retired Ratio [(2a) / (5a)]		1.10

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

* Values may not match those on pages E-5 and E-6 due to inclusion of community property settlements.

Active Members

Counts of members included in the valuation are counts of the records processed by the valuation. Multiple records may exist for those who have service in more than one valuation group. This does not result in double counting of liabilities.

Distribution of Active Members by Age and Service

Attained Age	Years of Service at Valuation Date						Total	Payroll
	0-4	5-9	10-14	15-19	20-24	25+		
15-24	630	20	0	0	0	0	650	20,913,167
25-29	1,562	577	12	0	0	0	2,151	94,364,653
30-34	1,568	1,397	319	15	0	0	3,299	180,155,375
35-39	1,235	1,343	686	167	12	0	3,443	211,667,630
40-44	1,089	1,296	725	346	120	18	3,594	241,877,386
45-49	1,035	1,305	841	483	324	180	4,168	301,954,420
50-54	1,103	1,240	948	577	505	495	4,868	360,009,210
55-59	783	1,007	796	455	393	503	3,937	287,710,984
60-64	408	585	453	291	210	268	2,215	156,847,761
65 and Over	174	249	190	109	75	74	871	54,138,864
Total	9,587	9,019	4,970	2,443	1,639	1,538	29,196	\$ 1,909,639,449

Distribution of Average Annual Salaries by Age and Service

Attained Age	Years of Service at Valuation Date						Average Salary
	0-4	5-9	10-14	15-19	20-24	25+	
15-24	31,850	42,380	0	0	0	0	\$32,174
25-29	41,630	49,724	53,973	0	0	0	43,870
30-34	50,259	57,790	61,508	66,331	0	0	54,609
35-39	57,814	62,055	64,872	68,355	84,156	0	61,478
40-44	61,821	66,303	71,162	75,944	77,320	82,059	67,300
45-49	68,978	70,580	72,866	77,892	78,294	78,811	72,446
50-54	66,221	71,389	74,388	80,397	80,582	82,511	73,954
55-59	67,139	71,132	70,643	76,673	83,598	78,606	73,079
60-64	64,164	67,599	70,966	72,792	78,504	79,506	70,812
65 and Over	51,682	65,050	57,110	71,104	69,517	69,373	62,157
Average	\$55,784	\$65,145	\$69,898	\$76,347	\$79,868	\$79,640	\$65,408

Transferred and Terminated Members

Distribution of Transfers to Other CalPERS Plans by Age and Service

Attained Age	Years of Service at Valuation Date						Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25+		
15-24	49	1	0	0	0	0	50	43,151
25-29	418	27	2	0	0	0	447	54,338
30-34	961	122	7	0	0	0	1,090	66,072
35-39	1,151	233	39	4	0	0	1,427	72,739
40-44	1,377	305	96	20	4	0	1,802	80,033
45-49	1,588	472	151	61	12	2	2,286	86,410
50-54	1,772	552	192	86	31	5	2,638	86,526
55-59	1,253	443	159	69	21	8	1,953	84,597
60-64	654	216	98	26	5	8	1,007	85,281
65 and Over	228	56	20	7	4	2	317	81,481
Total	9,451	2,427	764	273	77	25	13,017	80,602

Distribution of Terminated Participants with Funds on Deposit by Age and Service

Attained Age	Years of Service at Valuation Date						Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25+		
15-24	249	1	0	0	0	0	250	26,636
25-29	1,197	56	0	0	0	0	1,253	33,511
30-34	1,980	191	14	0	0	0	2,185	37,411
35-39	1,917	267	44	6	0	0	2,234	41,999
40-44	1,928	367	93	32	4	0	2,424	44,462
45-49	1,847	477	153	61	30	7	2,575	48,853
50-54	1,768	514	179	74	26	7	2,568	49,123
55-59	1,419	363	94	49	11	6	1,942	45,567
60-64	989	193	62	20	4	6	1,274	42,436
65 and Over	510	78	16	8	4	4	620	36,346
Total	13,804	2,507	655	250	79	30	17,325	43,234

Retired Members and Beneficiaries

Distribution of Retirees and Beneficiaries by Age and Retirement Type*

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	0	0	0	1	0	29	30
30-34	0	6	0	0	0	13	19
35-39	0	14	9	0	0	11	34
40-44	0	24	20	1	1	28	74
45-49	3	69	48	4	0	28	152
50-54	781	143	53	16	1	71	1,065
55-59	3,232	222	81	28	1	113	3,677
60-64	5,099	265	74	42	1	195	5,676
65-69	5,502	196	48	31	2	301	6,080
70-74	3,275	159	37	30	0	349	3,850
75-79	1,977	88	6	12	0	367	2,450
80-84	1,286	62	3	6	0	429	1,786
85 and Over	1,118	41	4	17	0	533	1,713
Total	22,273	1,289	383	188	6	2,467	26,606

Distribution of Total Annual Amounts for Retirees and Beneficiaries by Age and Retirement Type*

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 30	\$0	\$0	\$0	\$18,397	\$0	\$5,767	\$6,188
30-34	0	8,394	0	0	0	6,739	7,262
35-39	0	10,982	3,278	0	0	4,943	6,989
40-44	0	9,098	480	11,007	178	14,094	8,565
45-49	13,548	10,346	4,249	10,498	0	7,627	7,987
50-54	14,748	12,158	3,160	12,180	1,217	11,992	13,588
55-59	21,677	11,899	5,053	13,995	2,015	14,043	20,422
60-64	22,312	11,680	4,364	12,922	184	17,852	21,355
65-69	20,708	11,854	6,943	13,896	41	15,342	20,007
70-74	18,217	10,266	6,448	13,537	0	14,932	17,441
75-79	16,806	11,111	2,467	5,936	0	14,529	16,172
80-84	15,063	11,194	1,198	4,881	0	13,107	14,401
85 and Over	12,312	10,412	14,001	7,689	0	10,736	11,734
Total	\$19,546	\$11,378	\$4,671	\$12,069	\$613	\$13,516	\$18,320

Retired Members and Beneficiaries (continued)

Distribution of Retirees and Beneficiaries by Years Retired and Retirement Type*

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Yrs	8,906	201	68	77	1	133	9,386
5-9	5,990	202	112	44	1	295	6,644
10-14	3,259	314	66	27	0	335	4,001
15-19	2,038	287	63	20	2	457	2,867
20-24	1,095	127	35	7	0	488	1,752
25-29	620	77	22	3	0	383	1,105
30 and Over	365	81	17	10	2	376	851
Total	22,273	1,289	383	188	6	2,467	26,606

Distribution of Total Annual Amounts for Retirees and Beneficiaries by Years Retired and Retirement Type*

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Average
Under 5 Yrs	\$22,980	\$12,975	\$3,728	\$14,049	\$178	\$17,833	\$22,478
5-9	20,680	13,211	5,076	13,343	14	15,912	19,927
10-14	16,581	11,220	4,766	11,412	0	16,619	15,934
15-19	14,387	11,101	6,587	7,544	1,616	15,541	14,014
20-24	13,040	9,475	2,900	8,210	0	14,245	12,896
25-29	10,588	10,394	4,173	7,436	0	10,588	10,438
30 and Over	7,150	8,354	2,594	6,131	126	6,919	7,043
Average	\$19,546	\$11,378	\$4,671	\$12,069	\$613	\$13,516	\$18,320

Retired Members and Beneficiaries (continued)

Distribution of Retirees and Beneficiaries by Years Retired and Retirement Type Annual Amounts do not Include PPPA Payments

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	\$0	\$0	\$0	\$18,397	\$0	\$167,241	\$185,638
30-34	0	50,364	0	0	0	87,610	137,974
35-39	0	153,743	29,506	0	0	54,376	237,625
40-44	0	218,356	9,605	11,007	178	394,638	633,784
45-49	40,643	713,902	203,968	41,991	0	213,558	1,214,062
50-54	11,518,054	1,738,594	167,492	194,883	1,217	851,463	14,471,703
55-59	70,060,551	2,641,622	409,281	391,853	2,015	1,586,901	75,092,223
60-64	113,770,086	3,095,158	322,967	542,733	184	3,481,155	121,212,283
65-69	113,935,857	2,323,320	333,251	430,782	82	4,617,939	121,641,231
70-74	59,659,493	1,632,283	238,567	406,098	0	5,211,214	67,147,655
75-79	33,225,853	977,751	14,804	71,236	0	5,332,314	39,621,958
80-84	19,370,785	694,047	3,594	29,287	0	5,622,999	25,720,712
85 and Over	13,764,581	426,900	56,002	130,711	0	5,722,385	20,100,579
Total	\$435,345,903	\$14,666,040	\$1,789,037	\$2,268,978	\$3,676	\$33,343,793	\$487,417,427

Distribution of Total Annual Amounts for Retirees and Beneficiaries by Years Retired and Retirement Type Annual Amounts do not Include PPPA Payments

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Yrs	\$204,658,895	\$2,607,877	\$253,535	\$1,081,787	\$178	\$2,371,775	\$210,974,042
5-9	123,874,723	2,668,707	568,559	587,103	14	4,694,028	132,393,134
10-14	54,037,174	3,522,940	314,565	308,130	0	5,567,352	63,750,161
15-19	29,321,630	3,186,130	414,971	150,870	3,232	7,102,297	40,179,130
20-24	14,279,006	1,203,359	101,489	57,472	0	6,951,796	22,593,122
25-29	6,564,645	800,341	91,815	22,309	0	4,055,117	11,534,227
30 and Over	2,609,830	676,686	44,103	61,312	252	2,601,428	5,993,611
Total	\$435,345,903	\$14,666,040	\$1,789,037	\$2,268,978	\$3,676	\$33,343,793	\$487,417,427

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APPENDIX F

GLOSSARY OF ACTUARIAL TERMS

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Glossary of Actuarial Terms

Accrued Liability *(also called Actuarial Accrued Liability or Entry Age Normal Accrued Liability)*

The total dollars needed as of the valuation date to fund all benefits earned in the past for *current* members.

Actuarial Assumptions

Assumptions made about certain events that will affect pension costs. Assumptions generally can be broken down into two categories: demographic and economic. Demographic assumptions include mortality, disability and retirement rates. Economic assumptions include discount rate, salary growth and inflation.

Actuarial Methods

Procedures employed by actuaries to achieve certain funding goals of a pension plan. Actuarial methods include funding method, setting the length of time to fund the Accrued Liability and determining the Actuarial Value of Assets.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Accrued liability, Actuarial Value of Assets and related actuarial present values for a pension plan. These valuations are performed annually or when an employer is contemplating a change to their plan provisions.

Actuarial Value of Assets

The Actuarial Value of Assets used for funding purposes is obtained through an asset smoothing technique where investment gains and losses are partially recognized in the year they are incurred, with the remainder recognized in subsequent years.

This method helps to dampen large fluctuations in the employer contribution rate.

Amortization Bases

Separate payment schedules for different portions of the Unfunded Liability. The total Unfunded Liability of a Risk Pool or non-pooled plan can be segregated by "cause", creating "bases" and each such base will be separately amortized and paid for over a specific period of time. This can be likened to a home mortgage that has 24 years of remaining payments and a second on that mortgage that has 10 years left. Each base or each mortgage note has its own terms (payment period, principal, etc.) but all bases are amortized using investment and payroll assumptions from the current valuation.

Generally in an actuarial valuation, the separate bases consist of changes in unfunded liabilities due to amendments, actuarial assumption changes, actuarial methodology changes, and gains and losses. Payment periods are determined by Board policy and vary based on the cause of the change.

Amortization Period

The number of years required to pay off an Amortization Base.

Annual Required Contributions (ARC)

The employer's periodic required annual contributions to a defined benefit pension plan, calculated in accordance with the plan assumptions. The ARC is determined by multiplying the employer contribution rate by the payroll reported to CalPERS for the applicable fiscal year. However, if this contribution is fully prepaid in a lump sum, then the dollar value of the ARC is equal to the Lump Sum Prepayment.

Class 0 Benefit Surcharge

Class 0 benefit surcharge is the increase in normal cost for a given benefit formula above the baseline PEPRA 2% at 57 benefit formula.

Class 1 Benefits

Class 1 benefits have been identified to be additional benefits which have a significant, ongoing effect on the total plan cost. In some cases, a Class 1 benefit may be an alternate benefit formula. These benefits vary by employer across the risk pool. Agencies contracting for a Class 1 benefit will be responsible for the past service liability associated with such benefit and will be required to pay a surcharge established by the actuary to cover the ongoing cost (normal cost) of the Class 1 benefit.

Class 2 Benefits

Class 2 benefits have been identified to be the ancillary benefits providing one-time increases in benefits. These benefits vary by employer across the risk pool. Agencies contracting for a Class 2 benefit will be responsible for the past service liability associated with such benefit.

Class 3 Benefits

Class 3 benefits have been identified to be additional benefits which have a minimal effect on the total plan cost. Class 3 benefits may vary by rate plan within each risk pool. However, the employer contribution rate will not vary within the risk pool due to the Class 3 benefits.

Classic member (under PEPRA)

A classic member is anyone in CALPERS not defined as a new member under PEPRA (see definition of new member below.)

Discount Rate

The actuarial assumption that was called "investment return" in earlier CalPERS reports or "actuarial interest rate" in Section 20014 of the California Public Employees' Retirement Law (PERL).

Entry Age

The earliest age at which a plan member begins to accrue benefits under a defined benefit pension plan or Risk Pool. In most cases, this is the same as the date of hire.

(The assumed retirement age less the entry age is the amount of time required to fund a member's total benefit. Generally, the older a member is at hire, the greater the Normal Cost. This is mainly because there is less time to earn investment income to fund the future benefits.)

Entry Age Normal Cost Method

An actuarial cost method designed to fund a member's total plan benefit over the course of his or her career. This method is designed to produce stable employer contributions in amounts that increase at the same rate as the employer's payroll (i.e. level % of payroll).

Fresh Start

A Fresh Start is the single amortization base created when multiple amortization bases are collapsed into one base and amortized over a new funding period.

Funded Status

A measure of how well funded a plan or risk pool is. Or equivalently, how "on track" a plan or risk pool is with respect to assets vs. accrued liabilities. A ratio greater than 100% means the plan or risk pool has more assets than liabilities and a ratio less than 100% means liabilities are greater than assets. A funded ratio based on the Actuarial Value of Assets indicates the progress toward fully funding the plan using the actuarial cost methods and assumptions. A funded ratio based on the Market Value of Assets indicates the short-term solvency of the plan.

GASB 27

Statement No. 27 of the Governmental Accounting Standards Board. The accounting standard governing a state or local governmental employer's accounting for pensions.

GASB 68

Statement No. 68 of the Governmental Accounting Standards Board. The accounting standard governing a state or local governmental employer's accounting and financial reporting for pensions. GASB 68 replaces GASB 27 effective for the first fiscal year beginning after June 15, 2014.

New member (under PEPRA)

A new member includes an individual who becomes a member of a public retirement system for the first time on or after January 1, 2013, and who was not a member of another public retirement system prior to that date, and who is not subject to reciprocity with another public retirement system.

Normal Cost (also called Total Normal Cost)

The annual cost of service accrual for the upcoming fiscal year for active employees. The required employee contributions are part of the Total Normal Cost. The remaining portion, called the employer normal cost, includes surcharges for applicable class 1 benefits and should be viewed as the long term employer contribution rate.

Pension Actuary

A person who is responsible for the calculations necessary to properly fund a pension plan.

PEPRA

Public Employees' Pension Reform Act of 2013

Prepayment Contribution

A payment made by the employer to reduce or eliminate the year's required employer contribution.

Present Value of Benefits (PVB)

The total dollars needed as of the valuation date to fund all benefits earned in the past or expected to be earned in the future for *current* members.

Risk Pool

Using the benefit of the law of large numbers, a risk pool is a collection of employer plans for the purpose of sharing risk. If a pooled plan has active members at the time of valuation, it belongs to the risk pool composed of all other pooled plans with the same benefit formula. If a plan has no active members at the time of valuation, it belongs to the inactive risk pool.

Rolling Amortization Period

An amortization period that remains the same each year, rather than declining.

Side Fund

At the time a plan joined a risk pool, a Side Fund was created to account for the difference between the funded status of the risk pool and the funded status of the plan. The plan's Side Fund is amortized on an annual basis, with the discount rate net of, for active plans, the payroll growth rate assumption. The actuarial investment return assumption is currently 7.5%. Commencing with the June 30, 2013 actuarial valuations, the side fund will be treated as a liability as opposed to an asset. Prior to June 30, 2013, a positive side fund conveyed that a public agency had a surplus when risk pooling began June 30, 2003. Conversely, a negative side fund signified that a public agency had an unfunded liability that required elimination through an amortization payment schedule. After June 30, 2013 a positive side fund will signify that an agency has an unfunded liability while a negative side fund will indicate a surplus asset. Beginning with FY 2015-16 CalPERS will collect employer contributions towards the side fund as dollar amounts rather than as a contribution rate as a percent of payroll.

Superfunded

A condition existing when a plan's Actuarial Value of Assets exceeds its Present Value of Benefits. Prior to the passage of PEPRA, when this condition existed on a given valuation date for a given plan, employee contributions for the rate year covered by that valuation could be waived.

Unfunded Liability

When a plan or risk pool's Assets is less than its Accrued Liability, the difference is the plan or risk pool's Unfunded Liability of the Unfunded Liability is positive, the plan or risk pool will have to pay contributions exceeding the Normal Cost.