



Schools Pool Actuarial Valuation

As of June 30, 2014

Establishing Required Contributions

for the Fiscal Year

July 1, 2015 through June 30, 2016

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Schools Pool Actuarial Valuation as of June 30, 2014

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Actuarial Certification

To the best of our knowledge, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the CalPERS Schools Pool. This valuation is based on the member and financial data as of June 30, 2014 provided by the various CalPERS databases and the benefits under this plan with CalPERS as of the date this report was produced. In our opinion, this valuation has been performed in accordance with generally accepted actuarial principles and in accordance with standards of practice prescribed by the Actuarial Standards Board. The assumptions and methods are internally consistent and reasonable for this plan, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

The undersigned are actuaries for CalPERS, 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.

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HIGHLIGHTS AND EXECUTIVE SUMMARY

- **INTRODUCTION**
- **PURPOSE OF THE REPORT**
- **EMPLOYER REQUIRED CONTRIBUTION RATES**
- **EXPECTED FUTURE CHANGES**
- **HISTORY OF THE EXPECTED CONTRIBUTION REQUIREMENTS**
- **FUNDED STATUS OF THE PLAN**
- **CHANGES SINCE THE PRIOR YEAR'S VALUATION**
- **SUBSEQUENT EVENTS**

Introduction

This is the actuarial valuation report as of June 30, 2014 for the Schools Pool. This actuarial valuation was used to set the 2015-16 required employer contribution rate.

On April 17, 2013, the CalPERS Board of Administration approved a recommendation to change the CalPERS amortization and smoothing policies. Prior to this change, CalPERS employed an amortization and smoothing policy, which spread investment returns over a 15-year period while experience gains and losses were amortized over a rolling 30-year period. Effective with this June 30, 2014 valuation, CalPERS no longer uses actuarial value of assets and employs an amortization and smoothing policy that will spread rate increases or decreases over a 5-year period, and amortizes all experience gains and losses over a fixed 30-year period.

As per the Board's decision in February of 2014, the new actuarial assumptions will be incorporated in the June 30, 2015 valuation for the Schools Pool. The increase in liability due to the new actuarial assumptions will be amortized over 20 years and phased in over 5 years in accordance with Board policy, beginning with the contribution requirement for Fiscal Year 2016-17. The projected impact of the assumption change on the Schools Pool is reflected in the "Projected Rates" subsection of the report.

Purpose of the Report

This actuarial valuation was performed by the CalPERS Actuarial Office using data as of June 30, 2014. The purpose of the report is to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2014
- Determine the required employer contribution rate for the fiscal year July 1, 2015 through June 30, 2016
- Provide actuarial information as of June 30, 2014 to the CalPERS Board of Administration and other interested parties

The pension funding information presented in this report should not be used in financial reports subject to Governmental Accounting Standards Board (GASB) Statement Number 68 for a Cost-Sharing Multiple-Employer Defined Benefit Pension Plan.

The use of this report for any other purposes may be inappropriate.

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."

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.

Employer Required Contribution Rates

The actuarially required employer contribution rates for the Fiscal Year July 1, 2015 through June 30, 2016 are shown in the table below. For comparison purposes, the corresponding contribution rates for Fiscal Year July 1, 2014 through June 30, 2015 are also provided. The expected contribution amounts that these rates are/were expected to generate are also shown.

	Fiscal Year 2014-15	Fiscal Year 2015-16
Actuarially Determined Employer Contributions		
1. Contribution in Projected Dollars		
a) Total Normal Cost	\$ 1,541,474,132	\$ 1,640,991,835
b) Employee Contribution ¹	726,957,033	780,289,924
c) Employer Normal Cost [(1a) – (1b)]	814,517,100	860,701,912
d) Unfunded Contribution	412,464,594	477,326,014
e) Required Employer Contribution [(1c) + (1d)]	\$ 1,226,981,694	\$ 1,338,027,926
Projected Annual Payroll for Contribution Year	\$ 10,423,817,503	\$ 11,293,818,549
2. Contribution as a Percentage of Payroll		
a) Total Normal Cost	14.788%	14.530%
b) Employee Contribution ¹	6.974%	6.909%
c) Employer Normal Cost [(2a) – (2b)]	7.814%	7.621%
d) Unfunded Rate	3.957%	4.226%
e) Required Employer Rate [(2c) + (2d)]	11.771%	11.847%

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

The supporting exhibit in this report entitled “Reconciliation of Employer Contributions” on page 26 provides explanations of the changes in required contribution rates and expected contribution amounts from Fiscal Year 2014-15 to Fiscal Year 2015-16. A history of the required contribution rates is included on page 27 of this report.

¹ For classic members this is the percentage specified in the Public Employees Retirement Law, net of any reduction from the use of a modified formula or other factors. For PEPRA members the member contribution rate is based on 50 percent of the total normal cost. A development of PEPRA member contribution rates can be found in Appendix D.

Reasons for Change in Employer Contributions for the Schools Pool

Overall, the required contributions for the Schools Pool have increased by \$111.0 million between Fiscal Year 2014-15 and Fiscal Year 2015-16, to approximately \$1,338 million. The change is mainly driven by the factors listed below.

On April 17, 2013, the CalPERS Board of Administration approved a change to the CalPERS amortization and smoothing policies. Prior to this change, CalPERS employed an amortization and smoothing policy which spread investment returns over a 15-year period while experience gains and losses were amortized over a rolling 30-year period. Effective with this June 30, 2014 valuation, CalPERS no longer uses an actuarial value of assets and employs an amortization and smoothing policy that spreads rate increases or decreases over a 5-year period, and amortizes all experience gains and losses over a fixed 30-year period. The increase in contribution caused by this change has been partially offset by strong investment returns during Fiscal Year 2013-14.

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

Payroll for Fiscal Year 2013-14 has increased by around 8 percent due to an increase in active counts and individual salary increases. As a result, required contributions are increasing by almost \$70 million. This is the largest single factor towards the expected contribution increase.

There are other events that affected the overall change in contributions for the Schools Pool between Fiscal Year 2014-15 and 2015-16. The table on the next page highlights all major contributors to the change in required contributions.

Reason for Change	Change in Required Contribution (millions)
Change due to normal progression of existing amortization bases	\$12.4
Change due to increase in overall payroll	68.0
Decrease in normal cost due to new hires in lower benefit levels	(21.8)
First installment of the 5-year phased-in 30-year amortization of the following gains and losses:	
• Impact of investment experience and amortization and smoothing policy change	35.1
• Impact of greater than expected individual salary increases	10.3
• Impact of greater than expected retirements	6.2
• All other gains and losses	0.8
Total Change in Required Contributions	\$111.0

Expected Future Changes

The estimated 2016-17 employer rate for the Schools Pool is 14.1% based on a 2.4 percent investment return for Fiscal Year 2014-15. Note that the projected rate assumes that all other actuarial assumptions will be realized, that no changes to benefits will occur between now and the June 30, 2016 and reflects the assumption change.

A scenario analysis was performed to determine the effects of various investment returns on future employer contribution rates for three years beyond the estimated 2016-17 employer rates shown above. That information is available in the “Risk Analysis” section of this report.

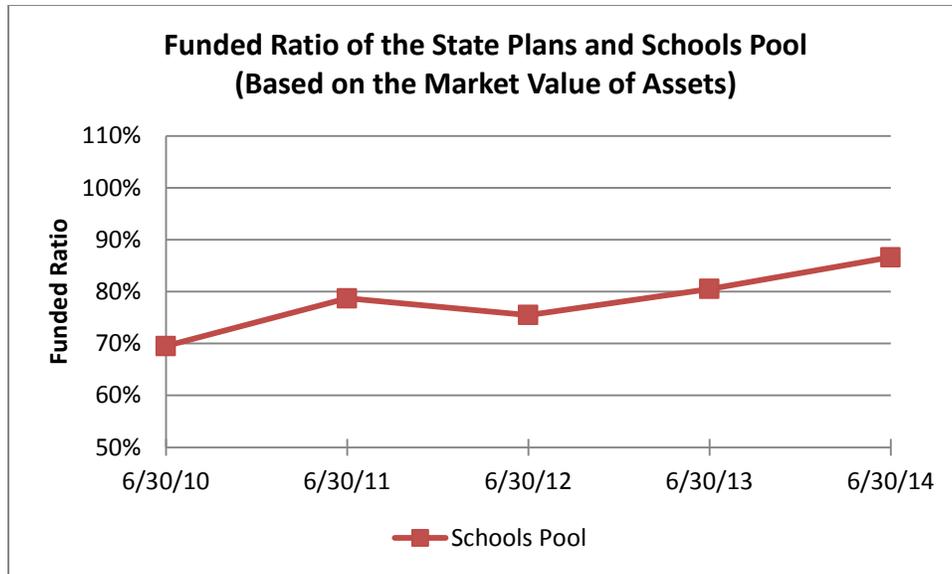
History of the Expected Contribution Requirements

The following table shows the history of the employer contributions set by CalPERS based on projected payroll for the Schools Pool going back to fiscal year 1996-97.

Fiscal Year	Total School Contributions
1996-97	\$ 416,694,314
1997-98	317,571,853
1998-99	0
1999-00	0
2000-01	0
2001-02	0
2002-03	228,972,653
2003-04	869,501,830
2004-05	903,570,002
2005-06	826,672,339
2006-07	841,504,282
2007-08	919,528,538
2008-09	966,316,743
2009-10	1,081,377,863
2010-11	1,189,482,769
2011-12	1,232,486,937
2012-13	1,203,430,156
2013-14	1,171,945,558
2014-15	1,226,981,694
2015-16	1,338,027,926

Funded Status of the Plan

The funded status of a pension plan is defined as the ratio of assets to a plan's accrued liabilities. Plans with a lower funded ratio are, all other things being equal, more at risk of not being able to meet their future benefit obligations. From June 30, 2013 to June 30, 2014 the funded status for the Schools Pool increased by 6.1 percent. This was mainly due to the investment return for 2013-14 being greater than expected. Note that the increase in accrued liability due to the demographic assumption change will not be reflected until the June 30, 2015 valuation. The graph on the following page shows the average funded status for the past five years for the Schools Pool based on the market value of assets.



The table below shows the funded status of the plan using the market value of assets on June 30, 2014.

Funded Status and Unfunded Liability on June 30, 2014

	June 30, 2013	June 30, 2014
1. Present Value of Projected Benefits	\$ 72,261,792,494	\$ 76,932,325,687
2. Entry Age Normal Accrued Liability	\$ 61,487,179,133	\$ 65,599,711,601
3. Market Value of Assets (MVA)	\$ 49,481,899,610	\$ 56,838,237,794
4. Unfunded Liability [(2) - (3)]	\$ 12,005,279,523	\$ 8,761,473,807
5. Funded Ratio [(3) / (2)]	80.5%	86.6%

The table below shows the funded status for the plan for the last five years.

Funded Ratio of the Retirement Program (Based on the Market Value of Assets)				
June 30, 2010	June 30, 2011	June 30, 2012	June 30, 2013	June 30, 2014
69.5%	78.7%	75.5%	80.5%	86.6%

Changes since the Prior Year's Valuation

Actuarial Methods

On April 17, 2013, the CalPERS Board of Administration approved a change to the CalPERS amortization and smoothing policies. Prior to this change CalPERS employed an amortization and smoothing policy which spread investment returns over a 15-year period while experience gains and losses were amortized over a rolling 30-year period. Effective with this valuation, CalPERS no longer uses an actuarial value of assets and employs an amortization and smoothing policy that spreads rate increases or decreases over a 5-year period, and amortizes all experience gains and losses over a fixed 30-year period. A complete description of the actuarial methods used in the June 30, 2014 valuation may be found in Appendix A of this report.

Subsequent Events

Actuarial Assumptions

The Board 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 Fiscal Year 2016-17 contribution rates for School employers. The increase in liability due to new actuarial assumptions will be calculated in the 2015 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 impact of assumption changes is included in the "Projected Rates" section of this report.

ASSETS

- **RECONCILIATION OF THE MARKET VALUE OF ASSETS OVER THE PRIOR FISCAL YEAR**
- **ASSET ALLOCATION**
- **CALPERS HISTORY OF INVESTMENT RETURNS**

Reconciliation of the Market Value of Assets Over the Prior Fiscal Year

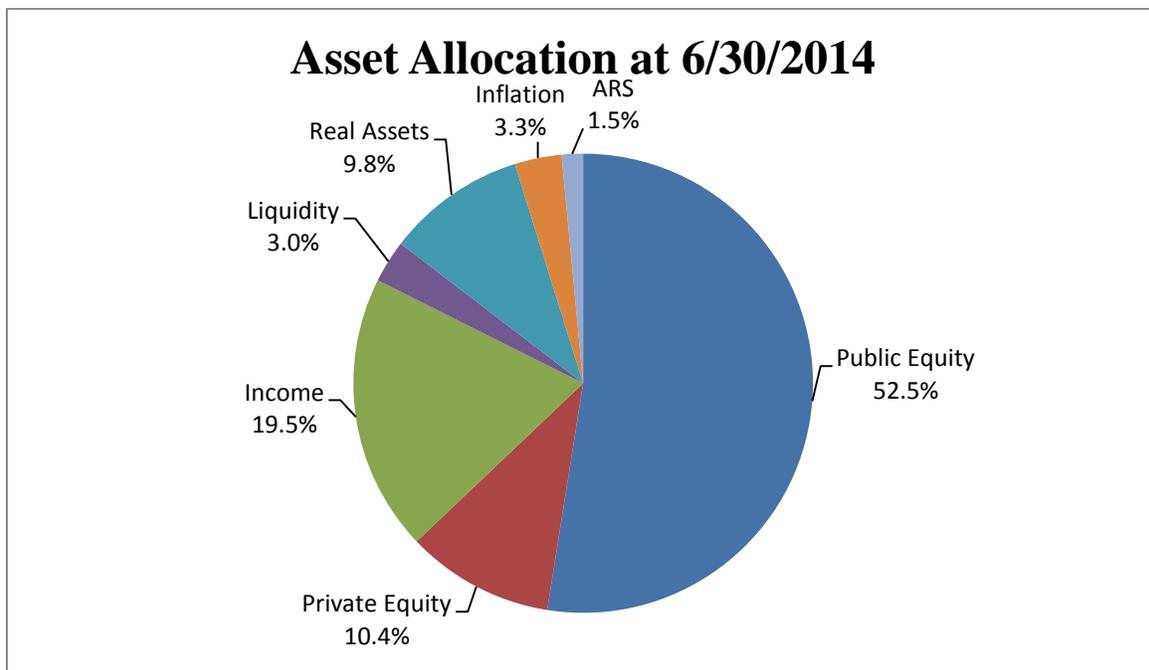
1.	Market Value of Assets as of June 30, 2013 Including Receivables	\$ 49,481,899,610
2.	Receivables for Service Buybacks as of June 30, 2013	97,880,222
3.	Market Value of Assets as of July 1, 2013 Excluding Receivables	49,384,019,388
4.	Adjustment	(1,016,607)
5.	Employer Contributions Received in 2013-14	1,202,857,934
6.	Employee Contributions Received in 2013-14	744,437,000
7.	Benefit Payments in 2013-14	(3,044,552,815)
8.	Refunds in 2013-14	(93,928,772)
9.	Administrative Expense	(72,167,000)
10.	Investment Return	8,614,906,915
11.	Market Value of Assets as of June 30, 2014 Excluding Receivables [(3) + (4) + (5) + (6) + (7) + (8) + (9) + (10)]	\$ 56,734,556,043
12.	Receivables for Service Buybacks as of June 30, 2014	103,681,751
13.	Market Value of Assets as of June 30, 2014 Including Receivables	\$ 56,838,237,794

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 Investment Beliefs No. 6 recognizes that strategic asset allocation is the dominant determinant of portfolio risk and return. 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 a percentage of total assets. The asset allocation has an expected long term blended rate of return of 7.5 percent.

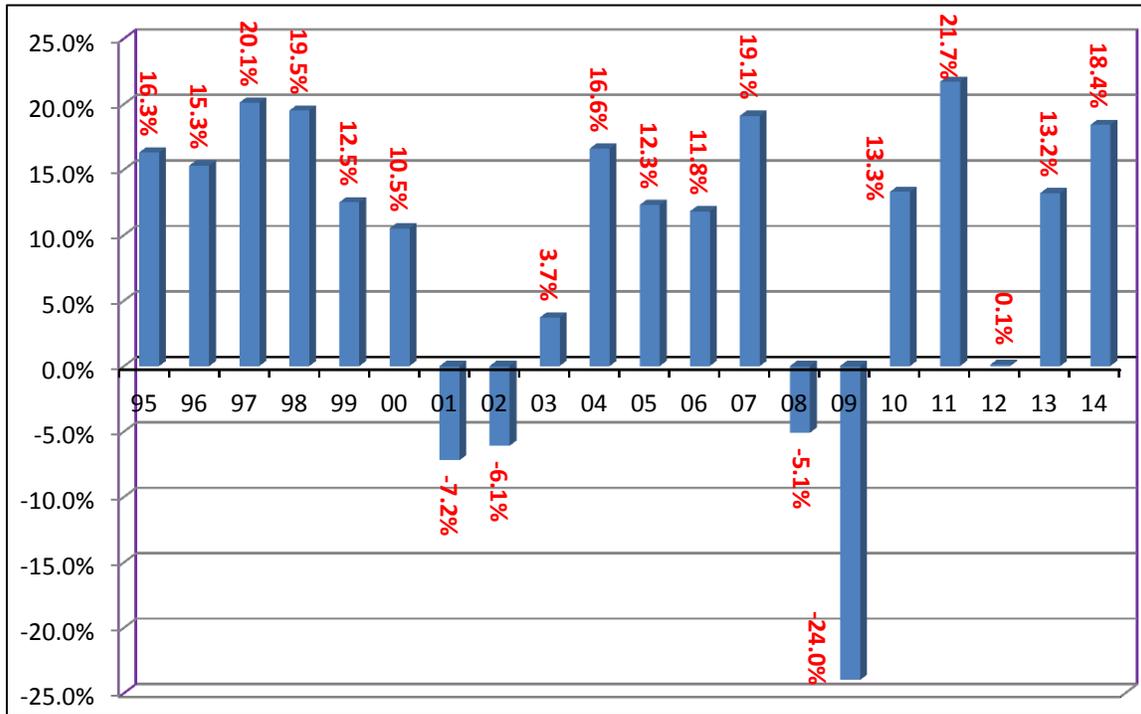
The asset allocation and market value of assets shown below reflect the values of the Public Employees Retirement Fund (PERF) in its entirety as of June 30, 2014. The assets of the Schools Pool are part of the Public Employees Retirement Fund (PERF) and are invested accordingly.

(A) Asset Class	(B) Market Value (\$ Billion)	(C) Policy Target Allocation
1) Public Equity	158.2	50.0%
2) Private Equity	31.5	14.0%
3) Global Fixed Income	58.8	17.0%
4) Liquidity	9.0	4.0%
5) Real Assets	29.6	11.0%
6) Inflation Sensitive Assets	9.9	4.0%
7) Absolute Return Strategy (ARS)	4.5	0.0%
Total Fund	\$301.5	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, 2014, (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	18.4%	13.1%	7.2%	8.4%	10.1%
Volatility	–	8.2%	14.0%	11.9%	11.4%

LIABILITIES AND RATES

- **COMPARISON OF CURRENT AND PRIOR YEAR**
- **DEVELOPMENT OF ACCRUED AND UNFUNDED LIABILITIES**
- **DEVELOPMENT OF EMPLOYER CONTRIBUTION RATES**
- **SCHEDULE OF AMORTIZATION BASES FOR THE RETIREMENT PROGRAM**
- **GAIN AND LOSS ANALYSIS**
- **RECONCILIATION OF EMPLOYER CONTRIBUTIONS**
- **EMPLOYER CONTRIBUTION RATE HISTORY**
- **HISTORY OF FUNDED STATUS AND FUNDING PROGRESS**

Comparison of Current and Prior Year

Shown below are the key valuation results for the current valuation compared to the corresponding results from the prior valuation.

Participant Information

	June 30, 2013	June 30, 2014
Members Included in the Valuation ¹		
Active Members	280,422	287,736
Transfers from Schools	22,116	22,672
Vested Terminations ²	170,094	175,032
Receiving Payments	<u>202,199</u>	<u>207,400</u>
Total	674,831	692,840
Average Entry Age of Active Members	36.5	36.4
Average Age of Active Members	47.7	47.6
Average Pay	\$ 35,038	\$ 36,997
Covered Payroll Prior Fiscal Year	\$ 9,825,483,034	\$ 10,645,507,163
Projected Payroll for Contribution Rate	\$ 10,423,854,951	\$ 11,293,818,549

1 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 coverage group. This does not result in double counting of liabilities.

2 Includes non-vested terminated participants with employee contributions remaining in the plan.

Funded Status of the Retirement Program

	June 30, 2013	June 30, 2014
Present Value of Benefits	\$ 72,261,792,494	\$ 76,932,325,687
Accrued Liability	\$ 61,487,179,133	\$ 65,599,711,601
Market Value of Assets	\$ 49,481,899,610	\$ 56,838,237,794
Unfunded Liability/(Surplus)	\$ 12,005,279,523	\$ 8,761,473,807
Funded Status	80.5%	86.6%

Employer Contribution

	June 30, 2013	June 30, 2014
Contribution Required in Dollars		
Total Normal Cost	\$ 1,541,474,132	\$ 1,640,991,835
Employee Contribution	\$ 726,957,033	\$ 780,289,924
Employer Normal Costs	\$ 814,517,100	\$ 860,701,912
Amortization of Unfunded Liability	<u>\$ 412,464,594</u>	<u>\$ 477,326,014</u>
Total	\$ 1,226,981,694	\$ 1,338,027,926
Contribution Required (Percent of Payroll)		
Total Normal Cost	14.788%	14.530%
Employee Contribution	6.974%	6.909%
Employer Normal Costs	7.814%	7.621%
Amortization of Unfunded Liability	<u>3.957%</u>	<u>4.226%</u>
Total	11.771%	11.847%

Development of Accrued and Unfunded Liabilities

The following table shows the development of the accrued liabilities and the unfunded liabilities based on the market value of assets and represent the true measure of the plan's ability to pay benefits.

1. Present Value of Projected Benefits	
a) Active and Inactives	\$ 43,831,131,366
b) Retired	33,101,194,321
c) Total	<u>\$ 76,932,325,687</u>
2. Present Value of Future Employee Contributions	\$ 5,611,520,162
3. Present Value of Future Employer Normal Costs	\$ 5,721,093,924
4. Accrued Liability [(1c) – (2) – (3)]	\$ 65,599,711,601
5. Market Value of Assets (MVA)	\$ 56,838,237,794
6. Unfunded Liability/(Surplus) [(4) – (5)]	\$ 8,761,473,807
7. Funded Status [(5) / (4)]	86.6%

Development of Employer Contribution Rates

The following table shows the development of the unfunded liabilities based on the smoothed actuarial value of assets. The unfunded liability on an actuarial value of assets basis is only for purposes of setting the employer contribution and keeping the contribution rates as smooth as possible from year to year.

Accrued Liability	\$ 65,599,711,601
Market Value of Assets (MVA)	<u>\$ 56,838,237,794</u>
Unfunded Liability/(Surplus)	\$ 8,761,473,807

The following table shows the development of the employer contribution rates which includes the amortization of the unfunded liability.

Employer Contribution Amount	
Normal Cost	\$ 860,701,912
Payment on the Unfunded Liability	<u>477,326,014</u>
Total Employer Contribution Amount	\$ 1,338,027,926
Projected Payroll	\$ 11,293,818,549
Employer Contribution (as a percent of payroll)	
Normal Cost	7.621%
Payment on the Unfunded Liability	<u>4.226%</u>
Total Employer Contribution Rate	11.847%

Schedule of Amortization Bases for the Retirement Program

The schedule below shows the development of the payment on the amortization bases used to determine the employer contribution rate. Each row of the schedule gives a brief description of a base (or portion of the Unfunded Actuarial Liability), the date the base was established, the balance of the base on the valuation date, and the number of years remaining in the amortization period. In addition, we show the expected payment for the year immediately following the valuation date, the balance on the date a year after the valuation date, and the scheduled payment for fiscal year 2015-16. Please refer to Appendix A for an explanation of how amortization periods are determined.

Reason for Base	Date Established	Remaining Amortization Period	Balance on 6/30/2014	Expected Payment in 2014-15	Amount Remaining on 6/30/2015	Scheduled Payment for Fiscal Year 2015-16	Payment as Percentage of Payroll
Assumption Change	6/30/2011	17	\$ 1,362,604,200	\$ 110,159,413	\$ 1,350,583,805	\$ 113,464,196	1.005%
Assumption Change	6/30/2009	15	\$ 1,033,382,519	\$ 90,515,866	\$ 1,017,037,361	\$ 93,231,342	0.826%
Fresh Start	6/30/2004	20	\$ 2,813,490,232	\$ 206,053,655	\$ 2,810,861,023	\$ 212,235,264	1.879%
(Gain)/Loss in 2009	6/30/2009	25	\$ 843,024,398	\$ 54,525,833	\$ 849,717,641	\$ 56,161,608	0.497%
(Gain)/Loss in 2010	6/30/2010	26	\$ 408,751,133	\$ 25,905,922	\$ 412,547,636	\$ 26,683,099	0.236%
(Gain)/Loss in 2011	6/30/2011	27	\$ (891,837,746)	\$ (55,454,653)	\$ (901,228,969)	\$ (57,118,293)	(0.506%)
(Gain)/Loss	Various	29	\$ (432,396,301)	\$ (25,965,625)	\$ (437,904,291)	\$ (26,744,595)	(0.237%)
Payment (Gain)/Loss	Various	29	\$ 111,975,443	\$ 6,724,185	\$ 113,401,818	\$ 6,925,910	0.061%
(Gain)/Loss	6/30/2014	30	\$ 3,512,479,929	\$ 42,577,608	\$ 3,731,770,520	\$ 52,487,483	0.465%
Total			\$ 8,761,473,807	\$ 455,042,204	\$ 8,946,786,544	\$ 477,326,014	4.226%

Gain and Loss Analysis

A. Total (Gain)/Loss for the Year			
1.	Unfunded Liability/(Surplus) as of 6/30/13	\$	5,236,932,735
2.	Expected Payment on the Unfunded Liability during 2013-14		367,188,185
3.	Interest through 6/30/14 $[0.075 \times (A1) - ((1 + 0.075)^{\frac{1}{2}} - 1) \times (A2)]$		379,249,327
4.	Change in Unfunded Liability as of 6/30/14 due to New Assumptions Expected Unfunded Liability as of 6/30/14 after all changes $[(A1) - (A2) + (A3) + (A4)]$		-
5.	Actual Unfunded Liability as of 6/30/14		5,248,993,877
6.	Total (Gain)/Loss for 2013-14 $[(A6) - (A5)]$	\$	<u>8,761,473,807</u>
7.		\$	3,512,479,930
B. Contribution (Gain)/Loss for the Year			
1.	Expected Contribution for 2013-14	\$	1,866,396,267
2.	Actual Contribution for 2013-14		<u>1,947,294,934</u>
3.	Contribution (Gain)/Loss for 2013-14 $[(B1) - (B2)]$	\$	(80,898,667)
C. Asset (Gain)/Loss for the Year			
1.	Actuarial Value of Assets before receivables as of 6/30/13	\$	56,152,366,176
2.	Contributions Received during 2013-14		1,947,294,934
3.	Benefits, Refunds and Administrative Expenses Paid during 2013-14 Expected Interest for 2013-14 $[0.075 \times (C1) + ((1 + 0.075)^{\frac{1}{2}} - 1) \times ((C2) + (C3))]$		(3,210,648,587)
4.	Receivables for Past Service Benefits		<u>4,164,908,170</u>
5.	Expected Assets as of 6/30/14 $[(C1) + (C2) + (C3) + (C4) + (C5)]$	\$	59,157,602,444
6.	Actual Market Value of Assets as of 6/30/14		<u>56,838,237,794</u>
7.	Asset (Gain)/Loss for 2013-14 $[(C6) - (C7)]$	\$	2,319,364,650
D. Liability (Gain)/Loss for the Year			
1.	Total (Gain)/Loss for 2013-14 (A7)	\$	3,512,479,930
2.	Contribution (Gain)/Loss for 2013-14 (B3)		(80,898,667)
3.	Asset (Gain)/Loss for 2013-14 (C8)		<u>2,319,364,650</u>
4.	Liability (Gain)/Loss for 2013-14 $[(D1) - (D2) - (D3)]$	\$	1,274,013,947

Reconciliation of Employer Contributions

	Percentage of Projected Payroll		Estimated \$ Based on Projected Payroll
1. Contribution for 7/1/14-6/30/15	11.771%	\$	1,226,981,694
2. Effect of changes since the prior year annual valuation			
a) Effect of unexpected changes in demographics and financial results	0.076%	\$	30,690,413
b) Effect of plan changes	0.000%		0
c) Effect of changes in Assumptions/Methods	0.000%		0
d) Effect of change in payroll	-	\$	80,355,819
e) Net effect of the changes above [sum of a through d]	0.076%	\$	111,046,232
3. Contribution for 7/1/15-6/30/16	11.847%	\$	1,338,027,926

Employer Contribution Rate History

The table below provides a history of the contribution rates for the Schools Pool. In cases where the contribution rate changed during the course of a fiscal year, the entry shown is the weighted average of the rates effective during the fiscal year.

Fiscal Year	Schools
1979-80	12.515%
1980-81	13.119%
1981-82	13.020%
1982-83	12.045%
1983-84	12.378%
1984-85	12.378%
1985-86	11.969%
1986-87	11.015%
1987-88	9.718%
1988-89	8.454%
1989-90	8.210%
1990-91	7.282%
1991-92	8.162%
1992-93	7.273%
1993-94	7.066%
1994-95	3.849%
1995-96	6.979%
1996-97	7.787%
1997-98	6.172%
1998-99	0.000%
1999-00	0.000%
2000-01	0.000%
2001-02	0.000%
2002-03	2.894%
2003-04	10.420%
2004-05	9.952%
2005-06	9.116%
2006-07	9.124%
2007-08	9.306%
2008-09	9.428%
2009-10	9.709%
2010-11	10.707%
2011-12	10.923%
2012-13	11.417%
2013-14	11.442%
2014-15	11.771%
2015-16	11.847%

History of Funded Status and Funding Progress

Shown below is the history of funding progress for the plan. One could view the trend in the ratio of the unfunded liability to covered payroll as a measure of the ability of the employer to address the unfunded liability.

Schools

(Dollars in Millions)

Valuation Date	Actuarial Accrued Liabilities	Market Value of Assets (MVA)	Funded Status (MVA)	Unfunded Liabilities/ (Surplus) (MVA)	Projected Payroll for Contribution	Unfunded/ (Surplus) as a % of Payroll
6/30/87	\$8,582.66	\$8,173.59	95.2%	\$409.07	\$3,605.26	11.3%
6/30/88	\$9,395.40	\$8,341.39	88.8%	\$1,054.01	\$3,768.65	28.0%
6/30/89	\$9,941.35	\$9,925.64	99.8%	\$15.72	\$4,054.28	0.4%
6/30/90	\$11,249.14	\$9,297.76	82.7%	\$1,951.37	\$4,392.59	44.4%
6/30/91	\$12,022.48	\$13,300.78	110.8%	(\$1,298.30)	\$4,849.84	-26.8%
6/30/92	\$12,855.90	\$13,815.63	107.5%	(\$959.73)	\$4,882.78	-19.7%
6/30/93	\$13,575.13	\$14,955.70	110.2%	(\$1,380.57)	\$4,852.84	-28.4%
6/30/94	\$15,135.82	\$15,373.38	101.6%	(\$237.56)	\$5,140.41	-4.6%
6/30/95	\$16,421.90	\$17,314.37	105.4%	(\$892.46)	\$5,350.87	-16.7%
6/30/96	\$17,571.63	\$19,706.46	112.1%	(\$2,134.83)	\$5,145.78	-41.5%
6/30/97	\$17,583.43	\$23,499.15	133.6%	(\$5,915.72)	\$4,907.43	-120.5%
6/30/98	\$19,499.14	\$27,873.56	142.9%	(\$8,374.42)	\$5,444.66	-153.8%
6/30/99	\$21,216.00	\$30,917.57	145.7%	(\$9,701.57)	\$5,961.02	-162.8%
6/30/00	\$25,473.96	\$33,295.07	130.7%	(\$7,821.11)	\$7,052.94	-110.9%
6/30/01	\$27,946.43	\$30,307.55	108.4%	(\$2,361.12)	\$7,912.23	-29.8%
6/30/02	\$31,271.16	\$27,689.90	88.5%	\$3,581.27	\$8,344.24	42.9%
6/30/03	\$33,792.88	\$28,182.01	83.4%	\$5,610.86	\$9,079.11	61.8%
6/30/04	\$35,932.74	\$32,828.49	91.4%	\$3,104.24	\$9,068.75	34.2%
6/30/05	\$38,367.52	\$36,898.25	96.2%	\$1,469.27	\$9,222.78	15.9%
6/30/06	\$41,408.65	\$40,852.35	98.7%	\$556.31	\$9,880.89	5.6%
6/30/07	\$44,810.07	\$48,292.93	107.8%	(\$3,482.86)	\$10,249.83	-34.0%
6/30/08	\$48,537.68	\$45,547.90	93.8%	\$2,989.78	\$11,137.70	26.8%
6/30/09	\$52,493.08	\$34,146.45	65.0%	\$18,346.63	\$11,109.76	165.1%
6/30/10	\$55,306.96	\$38,435.17	69.5%	\$16,871.79	\$11,283.40	149.5%
6/30/11	\$58,358.41	\$45,900.99	78.7%	\$12,457.42	\$10,540.43	118.2%
6/30/12	\$59,439.13	\$44,853.80	75.5%	\$14,585.33	\$10,242.25	142.4%
6/30/13	\$61,487.18	\$49,481.90	80.5%	\$12,005.28	\$10,423.82	115.2%
6/30/14	\$65,599.71	\$56,838.24	86.6%	\$8,761.47	\$11,293.82	77.6%

RISK ANALYSIS

- **VOLATILITY RATIOS**
- **PROJECTED RATES**
- **ANALYSIS OF FUTURE INVESTMENT RETURN SCENARIOS**
- **ANALYSIS OF DISCOUNT RATE SENSITIVITY**

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

Plans that have higher asset to payroll ratios produce more volatile employer rates due to investment return volatility. 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 the asset volatility ratio. 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

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

<u>Rate Volatility</u>	<u>As of June 30, 2014</u>
1. Market Value of Assets without Receivables	\$ 56,734,556,043
2. Payroll	\$ 10,645,507,163
3. Asset Volatility Ratio [AVR = (1) / (2)]	5.3
4. Accrued Liability	\$ 65,599,711,601
5. Liability Volatility Ratio [(4) / (2)]	6.2

Projected Rates

The table below shows projected employer contribution rates for the next five fiscal years, assuming CalPERS earns 2.4 percent for Fiscal Year 2014-15 and 7.50 percent every fiscal year thereafter, and assuming that all other actuarial assumptions will be realized and no other changes to assumptions, contributions, benefits, or funding. These projections take into account potential rate increases from the demographic assumption change adopted by the Board in February 2014 that will first impact 2016-17 rates. They also take into account the positive impact PEPR is expected to gradually have on the normal cost.

New Rate	Projected Future Employer Contribution Rates				
	2015-16	2016-17	2017-18	2018-19	2019-20
11.847%	14.1%	15.5%	16.8%	18.3	19.2%

Analysis of Future Investment Return Scenarios

As part of this report, a sensitivity analysis was performed to determine the effects of various investment returns during fiscal years 2015-16, 2016-17 and 2017-18 on the 2017-18, 2018-19 and 2019-20 employer rates. The projected rates assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur. These projected rates also reflect that new hires will be entering into lower benefit formulas with a lower normal cost, and the demographic assumption change adopted by the Board in February 2014.

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, 2015 through June 30, 2018. The 5th percentile return corresponds to a -3.8 percent return for each of the 2015-16, 2016-17 and 2017-18 fiscal years.
- The second scenario is what one would expect if the markets were to give us a 25th percentile return from July 1, 2015 through June 30, 2018. The 25th percentile return corresponds to a 2.8 percent return for each of the 2015-16, 2016-17 and 2017-18 fiscal years.
- The third scenario return for 2015-16, 2016-17, and 2017-18 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, 2015 through June 30, 2018. The 75th percentile return corresponds to a 12.0 percent return for each of the 2015-16, 2016-17 and 2017-18 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, 2015 through June 30, 2018. The 95th percentile return corresponds to an 18.9 percent return for each of the 2015-16, 2016-17 and 2017-18 fiscal years.

The tables below show the projected contribution rates for 2017-18 through 2019-20 for the various State Plans under the five different scenarios.

2015-18 Investment Return Scenario	Estimated Employer Rate			Estimated Change in Employer Rate between 2016-17 and 2019-20
	2017-18	2018-19	2019-20	
-3.8% (5th percentile)	16.3%	19.1%	22.7%	8.6%
2.8% (25th percentile)	15.8%	17.8%	20.2%	6.1%
7.5%	15.5%	16.8%	18.3%	4.2%
12.0% (75th percentile)	15.2%	15.9%	16.3%	2.2%
18.9% (95th percentile)	14.7%	14.3%	13.1%	(1.0%)

Analysis of Discount Rate Sensitivity

The discount rate reflects expectations of what the markets will deliver in the future and it is calculated based on two components: expected price inflation and real rate of return. A change in either of those components over the long term would necessitate further evaluation of the discount rate.

The following analysis looks at the 2015-16 employer contribution rates under two different discount rate scenarios. Shown below are the employer contribution rates assuming discount rates 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 contribution rates.

2015-16 Employer Contribution Rate			
As of June 30, 2014	6.50% Discount Rate (-1%)	7.50% Discount Rate (assumed rate)	8.50% Discount Rate (+1%)
Employer Normal Cost	11.1%	7.621%	5.0%
Unfunded Rate Payment	9.4%	4.226%	0.9%
Total	20.5%	11.847%	5.8%
Funded Status	77.1%	86.6%	96.9%

Note that the change in accrued liability due to the discount rate change, in the scenarios above, was amortized over 20 years as a level percentage of pay. The 8.5 percent discount rate run resulted in a 20 year fresh start of the unfunded liability rate payment. In the case of a surplus, rates were calculated to equal the employer normal cost rate. This is based on a provision in the Public Employees' Pension Reform Act of 2013 (PEPRA) that requires a minimum employer contribution rate in combination with employee contributions shall not be less than the normal cost rate. Numbers may not add, due to rounding.

APPENDIX A

STATEMENT OF ACTUARIAL METHODS AND ASSUMPTIONS

- **ACTUARIAL DATA**

- **ACTUARIAL METHODS**

- **ACTUARIAL ASSUMPTIONS**
 - **ECONOMIC ASSUMPTIONS**
 - **DEMOGRAPHIC ASSUMPTIONS**
 - **MISCELLANEOUS LOADING FACTORS**

Actuarial Data

As stated in the Actuarial Certification, the data, which serves as the basis for 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 this report is the Individual 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 payroll. Commencing with the June 30, 2014 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 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 and changes in unfunded accrued liability due to a plan amendment will be amortized over a period of 20 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 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/surplus is projected and amortized over a set number of years. This fresh start approach generally occurs when a total negative rate would result or a positive payment would be required on a negative unfunded actuarial liability (or conversely a negative payment on a positive unfunded

actuarial liability). When the fresh start is being used to avoid a negative total rate and the surplus is sufficient to offset at least 30 years of normal cost payments, the amortization period equals the number of years that the rate is projected to be zero. In addition, a fresh start may be used whenever the Chief Actuary feels that it would better achieve the intent of the Board's funding policy.

The 1959 Survivor Program valuation is not provided in this report. A separate report for that program is available.

PURCHASING POWER PROTECTION ACT (PPPA) METHOD

PPPA benefits are cost-of-living adjustments intended to maintain the individual's current retirement benefit at 75 percent of the original benefit at retirement adjusted for inflation since retirement. The PPPA benefit is paid, if necessary, in addition to any other cost-of-living adjustment provided under the terms of the plan. Prior to January 1, 2001, there was a single PPPA pool covering all CalPERS employers. However, commencing January 1, 2001, separate PPPA pools were established. A pool was set up for all State plans and a separate pool for School employers. The public agencies were removed entirely from PPPA pooling resulting in each public agency plan paying for its own PPPA benefits. The creation of separate pools effectively eliminates the cross subsidization between the State, Schools and public agencies.

For the Schools Pool, the total annual outlay for PPPA benefits is limited by State statute to earnings of up to 1.1 percent of accumulated member contributions. If this annual outlay is insufficient to provide the PPPA benefits in a given fiscal year, the 75 percent maintenance target would be proportionately reduced. Since the inception of the PPPA benefit program, 1.1 percent has proved more than sufficient to provide the 75 percent maintenance. Under the inflation assumption of 2.75 percent compounded annually, the 1.1 percent appears to remain more than sufficient in the foreseeable future.

The actuarial model mimics the PPPA administrative procedure by deriving the employer contribution rate for the plan as the lesser of two separate actuarially computed rates:

- 1) The rate that results if a full 1.1 percent investment return on the actuarial value of each future year's employee assets in the plan is used for that plan's PPPA payments; or
- 2) The rate that results if the plan pays the full 75 percent purchasing power for itself.

In this way, those plans for which future PPPA costs equal or exceed a 1.1 percent return on current and future employee assets are charged an employer rate that replaces the 1.1 percent return on employee assets. Those plans that require less than the 1.1 percent return on current and future employee assets to maintain 75 percent purchasing power are charged the rate necessary to maintain the 75 percent purchasing power. It must be noted that nothing is charged in the rates for any cross-subsidization.

INTERNAL REVENUE CODE SECTION 415

The limitations on benefits imposed by Internal Revenue Code Section 415 are taken into account in this valuation.

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. Different assumptions for these new PEPRA members are disclosed below.

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, 2014 valuation that sets the 2015-16 rates, CalPERS employs an amortization and smoothing policy that pays 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 actuarial value of 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.

ACCOUNTS RECEIVABLE

In preparing valuations and setting employer contribution rates, the asset figures used include accounts receivable. The CalPERS Actuarial Office assumes that all assets are accruing interest at the actuarially assumed rate. Therefore, the rates depicted assume that all payments have been made and are accruing interest.

Actuarial Assumptions

At its February 2014 meeting, the CalPERS Board reviewed the demographic and economic assumptions and adopted new demographic assumptions based on the January 2014 CalPERS Experience Study. For more details please refer to the experience study report available on the CalPERS website.

ECONOMIC ASSUMPTIONS:

Discount Rate

7.5% compounded annually (net of administrative expenses).

Salary Growth

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

Duration of Service	Schools		
	Entry Age		
	20	30	40
0	10.80%	9.60%	8.20%
3	7.50%	7.00%	6.20%
5	6.30%	6.00%	5.30%
10	4.50%	4.40%	4.10%
15	3.90%	3.80%	3.50%
20	3.60%	3.50%	3.20%
25	3.40%	3.40%	3.20%
30	3.40%	3.40%	3.20%

Overall Payroll Growth

3 percent compounded annually (used in projecting the payroll over which the unfunded liability is amortized).

Inflation

2.75 percent compounded annually.

DEMOGRAPHIC ASSUMPTIONS:*Post-retirement Mortality*

Rates vary by age, type of retirement and gender. See sample rates in the table below.

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

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, 2015 valuation. The expected impact of the assumptions is included in the projected rates in this report, starting with 2016-17. 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 85 percent are assumed to be married upon retirement.

Age of Spouse

It is assumed that female spouses are 3 years younger than male spouses.

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. See sample rates in the table below.

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

Termination with Vested Deferred Benefits

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

Duration of Service	Entry Age				
	20	25	30	35	40
5	0.0816	0.0733	0.0649	0.0566	0.0482
6	0.0782	0.0697	0.0613	0.0527	0.0443
7	0.0745	0.0660	0.0573	0.0487	0.0400
8	0.0708	0.0621	0.0534	0.0446	0.0359
9	0.0671	0.0582	0.0493	0.0404	0.0316
10	0.0629	0.0540	0.0450	0.0359	-
14	0.0558	0.0462	0.0367	0.0272	-
15	0.0537	0.0440	0.0344	-	-
19	0.0443	0.0344	0.0243	-	-
20	0.0420	0.0317	-	-	-
24	0.0319	0.0211	-	-	-
25	0.0291	-	-	-	-
29	0.0170	-	-	-	-
30	-	-	-	-	-

Non-Industrial Death

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

Non-Industrial Disability

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

Attained Age	Male		Female	
	Non-Industrial Death	Non-Industrial Disability	Non-Industrial Death	Non-Industrial Disability
20	0.00047	0.00010	0.00016	0.00010
25	0.00050	0.00010	0.00026	0.00010
30	0.00053	0.00018	0.00036	0.00010
35	0.00067	0.00064	0.00046	0.00038
40	0.00087	0.00136	0.00065	0.00094
45	0.00120	0.00283	0.00093	0.00171
50	0.00176	0.00439	0.00126	0.00299
55	0.00260	0.00489	0.00176	0.00335
60	0.00395	0.00425	0.00266	0.00239

Service Retirement – Classic Members

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

Attained Age	Years of Service						
	5	10	15	20	25	30	35
50	0.005	0.009	0.013	0.015	0.016	0.018	0.022
52	0.006	0.012	0.017	0.020	0.022	0.025	0.029
54	0.012	0.024	0.033	0.039	0.044	0.049	0.057
56	0.020	0.039	0.055	0.065	0.072	0.081	0.095
58	0.025	0.050	0.070	0.083	0.092	0.103	0.121
60	0.037	0.073	0.102	0.121	0.134	0.150	0.176
62	0.076	0.151	0.212	0.250	0.278	0.311	0.366
65	0.091	0.180	0.251	0.297	0.331	0.370	0.435
70	0.066	0.131	0.183	0.216	0.241	0.270	0.316
75	0.055	0.108	0.151	0.179	0.199	0.223	0.262

Service Retirement – PEPRAs Members

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

Attained Age	Years of Service						
	5	10	15	20	25	30	35
50	0.000	0.000	0.000	0.000	0.000	0.000	0.000
52	0.004	0.008	0.012	0.014	0.015	0.018	0.020
54	0.008	0.017	0.023	0.027	0.031	0.034	0.040
56	0.014	0.027	0.039	0.046	0.050	0.057	0.067
58	0.019	0.038	0.053	0.062	0.069	0.077	0.091
60	0.030	0.058	0.082	0.097	0.107	0.120	0.293
62	0.061	0.121	0.170	0.200	0.222	0.249	0.293
65	0.082	0.162	0.226	0.267	0.298	0.333	0.392
70	0.066	0.131	0.183	0.216	0.241	0.270	0.316
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

MISCELLANEOUS LOADING FACTORS:*Credit for Unused Sick Leave*

Total years of service are increased by 1 percent for those plans with the provision providing Credit for Unused Sick Leave.

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.

APPENDIX B

PRINCIPAL PLAN PROVISIONS

- **SUMMARY OF PRINCIPAL PLAN PROVISIONS**

Summary of Principal Plan Provisions

The following is a summary of the major plan provisions for the most representative group used in calculating costs and liabilities of this plan. Many of the statements in this summary are general in nature, and are intended to provide a summary of the complex Public Employees' Retirement Law. The law itself governs in all situations.

RETIREMENT PROGRAM

Service Retirement

Eligibility

A CalPERS Classic 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). PEPRAs Schools members become eligible for Service Retirement upon attainment of age 52 with at least 5 years of service.

Benefit

The Service Retirement benefit calculated for service earned by this group of employees is a monthly allowance equal to the product of the *benefit factor*, *years of service*, and *final compensation*, where

- The *benefit factor* for this group of employees comes from the **2% at 55** benefit factor table. New PEPRAs members hired on or after January 1, 2013 are subject to the **2% at 62** benefit factor table. The factor depends on the member's age at retirement. Listed below are the factors for retirement at whole year ages:

Retirement	2% at 55	Retirement	2% at 62
<u>Age</u>	<u>Factor</u>	<u>Age</u>	<u>Factor</u>
50	1.100%	50	N/A
51	1.280%	51	N/A
52	1.460%	52	1.000%
53	1.640%	53	1.100%
54	1.820%	54	1.200%
55	2.000%	55	1.300%
56	2.064%	56	1.400%
57	2.126%	57	1.500%
58	2.188%	58	1.600%
59	2.250%	59	1.700%
60	2.314%	60	1.800%
61	2.376%	61	1.900%
62	2.438%	62	2.000%
63 & Up	2.500%	63	2.100%
		64	2.200%
		65	2.300%
		66	2.400%
		67 & Up	2.500%

- 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. Any unused sick leave accumulated at the time of retirement will be converted to credited service at the 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 12 consecutive months' full-time equivalent monthly pay (no matter which CalPERS employer paid this compensation). For new PEPRA members hired after January 1, 2013 final compensation is based on the monthly average of the member's highest 36 consecutive months' full-time equivalent monthly pay. 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 \$115,064 for 2014 and for those employees that do not participate in social security the cap for 2014 is \$138,077, the equivalent of 120% of the 2014 Contribution and Benefit Base. Adjustments to the caps are permitted annually based on changes to the CPI for All Urban Consumers.
- The employees in this plan may or may not be covered by Social Security. For employees with service prior to January 1, 2001 covered by Social Security, the final compensation is offset by \$133.33 (or by one-third if, the final compensation is less than \$400). For PEPRA members, the final compensation is not offset.
- The Service Retirement benefit is not capped.

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 member becomes eligible to receive the deferred retirement benefit upon satisfying the eligibility requirements for Deferred Status and upon attainment of age 50. PEPRA Schools 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 PERS employers, and with certain other Retirement Systems with which PERS 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 working with any CalPERS employer at the time of disability in order to be eligible for this benefit.

Benefit

The 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.

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.

Post-Retirement Death Benefit

Lump Sum Payment

Upon the death of a retiree, a one-time lump sum payment of \$2,000 will be made to the retiree's designated survivor(s), or to the retiree's estate.

Form of Payment for Retirement Allowance

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.

For retirement allowances with respect to service earned by employment in this group, 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 (50 percent for service not covered

by Social Security). This additional benefit is often referred to as *post retirement survivor allowance* (PRSA) or simply as *survivor continuance*.

In other words, 25 percent of the allowance (or 50 percent for service not covered by Social Security), 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.

The remaining 75 percent of the retirement allowance (or 50 percent for service not covered by Social Security), 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

Eligibility

An employee's beneficiary (or estate) may receive the Basic Death benefit if the member dies while actively employed. A CalPERS member who is no longer actively employed with **any** CalPERS employer is not eligible for this benefit. A member's survivor who is eligible for any other pre-retirement death benefit described below 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. In addition, a lump sum in the amount of six months' salary is paid. 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

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 members and age 52 for PEPRAs school 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 or, if there is no eligible spouse, to the member's unmarried children under age 18. A member's survivor may choose this benefit in lieu of the Basic Death benefit or the Special Death 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. There is a guarantee that the total amount paid will at least equal the Basic Death benefit.

Cost-of-Living Adjustments

Retirement and survivor allowances are adjusted each year in May for cost of living, beginning the second calendar year after the year of retirement. The standard cost-of-living adjustment (COLA) is 2 percent. Annual adjustments are calculated by first determining the lesser of 1) 2 percent compounded from the end of the year of retirement or 2) actual rate of inflation. The resulting increase is divided by the total increase provided in prior years. For any particular year, the COLA adjustment may be less than 2 percent (when the rate of inflation is low), may be greater than the rate of inflation (when the rate of inflation is low after several years of high inflation) or may even be greater than 2 percent (when inflation is high after several years of low inflation).

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 75 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. The total annual outlay for PPPA is limited to 1.1 percent of accumulated member contributions. If this amount of member contributions were insufficient to provide for PPPA payments, the 75 percent target would be proportionately reduced.

Employee Contributions

Each employee contributes toward his or her retirement based upon one of the following schedules. The employer may choose to "pick-up" these contributions for the employees.

The contribution schedule is as follows:

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

The monthly compensation breakpoint is \$0.

The percent contributed above the monthly compensation breakpoint is 7 percent for classic members and 6 percent for PEPRA members.

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 BENEFITS PROGRAM

For these benefits, please refer to the 1959 Survivor Report

APPENDIX C

PARTICIPANT DATA

- **SOURCE OF THE PARTICIPANT DATA**
- **DATA VALIDATION TESTS AND ADJUSTMENTS**
- **DATA STATEMENT**
- **RECONCILIATION OF PARTICIPANTS**
- **ACTIVE MEMBERS**
- **TERMINATED AND TRANSFERRED PARTICIPANTS**
- **RETIRED MEMBERS AND BENEFICIARIES**

Source of the Participant Data

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

- 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 data warehouse, 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. It is not specific to the Schools pool.

Checks on the data included:

- A reconciliation of the membership of the plan,
- Comparisons of various member statistics (average attained age, average entry age, average salary, etc.) for the plan with those from the prior valuation
- Pension amounts for each retiree and beneficiary receiving payments were compared with the pension amounts from the prior 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, and
- The annual earnings rate for most Schools members were overwritten with the annualized earnings based on their yearly contributions.

Data Statement

The data does not contain information about reciprocal systems and hence salary information for terminated participants covered by reciprocal systems may not be up to date. This situation is not expected to have a material impact on the employer contribution rates since the total present value for all terminated participants represents less than 2 percent of the present value of benefits for all members.

We are unaware of any other data issues that would have a material effect on the results of this valuation.

It is our opinion that, after the adjustments noted above, the participant data was sufficient and reliable for the purposes of the valuation.

Reconciliation of Participants

For the Fiscal Year Ending June 30, 2014

Schools

	Active	Transfer	Terminated	Receiving	Total
As of June 30, 2013	280,422	22,116	170,094	202,199	674,831
Retirements	(7,035)	(1,142)	(1,407)	9,584	-
Industrial Disabilities	(1)	(32)	(4)	37	-
Ordinary Disabilities	(237)	(30)	(80)	347	-
Deaths ²	(388)	(116)	(704)	(6,146)	(7,469)
New Survivors	n/a	n/a	n/a	2,002	2,002
Non-vested Terminations ¹	(9,199)	(250)	9,449	-	-
Vested Terminations	(3,770)	(225)	3,999	(4)	-
Refunds of Contributions	(1,868)	(322)	(4,280)	-	(6,470)
Transfers	(1,089)	3,096	(1,947)	(60)	-
Redeposits/Rehires	3,976	(257)	(3,718)	(1)	-
First Year in Status	26,201	472	1,471	398	28,542
Data Corrections ³	724	(523)	2,159	(956)	1,404
As of June 30, 2014	287,736	22,672	175,032	207,400	692,840

¹ Includes non-vested terminated participants with employee contributions left in the plan.

² Includes both deaths without survivors and deaths with survivors receiving a benefit.

³ May include the combining of data records into a single record.

Active Members

Distribution of Active Members By Age and Service

As of June 30, 2014

Schools

Attained Age	Years of Service at Valuation Date						Total	Payroll
	0-4	5-9	10-14	15-19	20-24	25+		
15-24	7,797	50	0	0	0	0	7,847	191,701,289
25-29	16,456	3,142	41	0	0	0	19,639	550,996,286
30-34	13,441	8,649	2,269	67	0	0	24,426	831,163,925
35-39	11,241	8,665	5,698	1,617	36	0	27,257	1,010,785,840
40-44	12,080	9,028	6,610	3,655	862	47	32,282	1,207,842,822
45-49	12,667	10,693	7,914	4,815	2,413	1,216	39,718	1,500,439,039
50-54	11,752	12,339	10,399	6,559	3,577	3,906	48,532	1,901,065,282
55-59	8,295	10,533	10,313	7,614	4,240	5,310	46,305	1,847,761,151
60-64	4,319	6,259	6,654	5,326	3,238	3,600	29,396	1,163,584,340
65 and Over	2,241	2,811	2,639	2,011	1,257	1,375	12,334	440,167,189
Total	100,289	72,169	52,537	31,664	15,623	15,454	287,736	\$10,645,507,163

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 Average Annual Salaries By Age and Service

As of June 30, 2014

Schools

Attained Age	Years of Service at Valuation Date						Average Salary
	0-4	5-9	10-14	15-19	20-24	25+	
15-24	24,418	34,112	0	0	0	0	\$24,480
25-29	26,724	34,981	43,737	0	0	0	28,081
30-34	29,446	38,043	45,638	61,415	0	0	34,082
35-39	28,938	38,808	45,986	52,376	62,102	0	37,074
40-44	27,812	37,413	44,777	51,674	55,705	60,079	37,464
45-49	26,678	34,920	43,116	50,811	55,448	58,729	37,827
50-54	26,340	33,470	41,192	48,758	54,387	60,640	39,193
55-59	25,663	32,261	39,676	46,545	51,722	58,716	39,895
60-64	24,384	31,805	38,226	45,393	48,363	57,393	39,587
65 and Over	20,547	29,482	37,313	42,295	44,907	51,518	35,652
Average	\$26,911	\$34,957	\$41,779	\$48,110	\$51,907	\$58,259	\$36,997

Terminated and Transferred Participants

Distributions By Age and Service

Transfers to Other CalPERS Plans

As of June 30, 2014

Schools

Attained Age	Years of Service at Valuation Date						Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25+		
15-24	78	0	0	0	0	0	78	28,593
25-29	690	31	1	0	0	0	722	36,459
30-34	1,609	130	12	0	0	0	1,751	46,431
35-39	2,405	218	16	0	0	0	2,639	48,634
40-44	2,598	322	50	2	0	0	2,972	50,380
45-49	2,628	476	111	7	0	1	3,223	51,002
50-54	3,168	620	195	47	3	1	4,034	50,854
55-59	2,989	557	158	30	12	0	3,746	49,019
60-64	1,970	393	117	30	7	1	2,518	47,884
65 and Over	806	134	36	9	2	2	989	44,810
Total	18,941	2,881	696	125	24	5	22,672	49,232

Distributions By Age and Service

Terminated Participants With Funds on Deposit

As of June 30, 2014

Schools

Attained Age	Years of Service at Valuation Date						Total	Average Salary
	0-4	5-9	10-14	15-19	20-24	25+		
15-24	2,195	2	0	0	0	0	2,197	25,786
25-29	12,645	221	3	0	0	0	12,869	28,432
30-34	20,743	1,167	69	0	0	0	21,979	29,808
35-39	21,892	1,547	216	0	0	0	23,655	30,735
40-44	20,192	1,857	349	8	0	1	22,407	31,381
45-49	18,330	2,397	639	29	2	1	21,398	31,910
50-54	19,970	3,049	992	164	16	3	24,194	31,985
55-59	18,655	2,582	735	161	45	1	22,179	31,411
60-64	13,422	1,666	520	78	29	7	15,722	30,286
65 and Over	7,374	806	205	30	13	5	8,432	29,341
Total	155,418	15,294	3,728	470	105	18	175,032	30,764

Retired Members and Beneficiaries

Number of Retirees and Beneficiaries

By Age and Retirement Type

As of June 30, 2014

Schools

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	0	1	0	3	1	186	191
30-34	0	11	4	0	0	109	124
35-39	0	43	15	1	0	135	194
40-44	0	109	30	6	0	207	352
45-49	0	340	45	6	1	338	730
50-54	1,422	999	93	36	3	595	3,148
55-59	10,679	1,805	142	91	3	917	13,637
60-64	28,089	2,199	189	159	0	1,485	32,121
65-69	40,022	2,063	153	159	3	2,205	44,605
70-74	31,100	1,842	95	125	1	2,676	35,839
75-79	23,160	1,296	33	81	4	3,376	27,950
80-84	17,164	723	23	49	2	3,817	21,778
85 and Over	18,948	730	10	38	0	7,005	26,731
Total	170,584	12,161	832	754	18	23,051	207,400

Counts of members do not include alternate payees receiving benefits while the member is still working. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

Annual Allowance Amounts for**Retirees and Beneficiaries****By Age and Retirement Type****As of June 30, 2014****Annual Amounts not Including PPPA Payments****Schools**

Attained Age	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 30	\$0	\$4,030	\$0	\$30,546	\$4	\$778,504	\$813,084
30-34	0	90,063	286	0	0	772,465	862,814
35-39	0	332,176	8,699	6,124	0	984,645	1,331,644
40-44	0	1,085,695	27,220	45,306	0	1,462,270	2,620,491
45-49	0	3,508,338	39,178	41,808	1,351	2,372,899	5,963,574
50-54	10,966,743	11,274,158	125,456	335,441	1,233	4,967,577	27,670,608
55-59	170,812,240	21,564,041	205,277	877,184	3,946	8,762,933	202,225,621
60-64	521,018,798	25,758,223	456,143	1,224,596	0	15,823,594	564,281,354
65-69	749,853,739	23,158,942	440,782	1,320,902	4,512	23,754,441	798,533,318
70-74	540,232,265	19,865,862	281,016	902,848	134	28,712,237	589,994,362
75-79	346,676,156	12,615,911	44,413	560,221	4,579	34,838,575	394,739,855
80-84	225,063,112	6,324,029	130,915	292,744	129	36,508,307	268,319,236
85 and Over	202,021,402	5,835,138	7,323	325,202	0	53,968,811	262,157,876
Total	\$2,766,644,455	\$131,416,606	\$1,766,708	\$5,962,922	\$15,888	\$213,707,258	\$3,119,513,837

Counts of members do not include alternate payees receiving benefits while the member is still working. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

Number of Retirees and Beneficiaries
By Years Retired and Retirement Type
As of June 30, 2014
Schools

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Yrs	50,786	1,739	160	215	2	1,033	53,935
5-9	38,760	1,788	173	230	1	2,071	43,023
10-14	31,349	2,623	180	159	2	3,204	37,517
15-19	19,851	2,561	115	62	2	3,575	26,166
20-24	14,830	1,733	92	39	2	4,145	20,841
25-29	8,416	802	47	31	7	3,501	12,804
30 and Over	6,592	915	65	18	2	5,522	13,114
Total	170,584	12,161	832	754	18	23,051	207,400

Counts of members do not include alternate payees receiving benefits while the member is still working. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

Annual Allowance Amounts for Retirees and Beneficiaries**By Years Retired and Retirement Type****As of June 30, 2014****Annual Amounts not Including PPPA Payments****Schools**

Years Retired	Service Retirement	Non-Industrial Disability	Industrial Disability	Non-Industrial Death	Industrial Death	Death After Retirement	Total
Under 5 Yrs	\$973,455,082	\$21,510,509	\$549,309	\$1,911,450	\$815	\$12,608,180	\$1,010,035,345
5-9	700,783,276	21,875,909	422,497	1,930,439	521	24,084,294	749,096,936
10-14	544,803,692	31,652,881	471,777	1,108,165	1,637	38,235,152	616,273,304
15-19	246,511,513	26,130,301	100,211	394,442	5,699	33,189,725	306,331,891
20-24	179,198,698	17,285,702	172,200	272,665	3,375	41,935,797	238,868,437
25-29	75,871,112	6,618,243	34,036	189,870	3,712	29,535,331	112,252,304
30 and Over	46,021,082	6,343,061	16,678	155,891	129	34,118,779	86,655,620
Total	\$2,766,644,455	\$131,416,606	\$1,766,708	\$5,962,922	\$15,888	\$213,707,258	\$3,119,513,837

Counts of members do not include alternate payees receiving benefits while the member is still working. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

Retirees and Beneficiaries**Number Counts and Benefits****By Year of Retirement****As of June 30, 2014****Schools**

Years Retired	Total Retirement	Total Benefits	Average Benefits
2014	4,579 ¹	74,916,599	16,361
2013	10,401	187,644,542	18,041
2012	10,712	194,868,558	18,192
2011	10,454	192,393,210	18,404
2010	11,275	216,899,161	19,237
2009	10,384	202,880,790	19,538
2008	8,537	160,448,096	18,794
2007	8,197	148,261,202	18,087
2006	8,527	144,223,942	16,914
2005	8,714	143,450,242	16,462
2004	8,998	148,286,038	16,480
2003	9,433	166,455,091	17,646
2002	7,336	126,709,432	17,272
2001	6,509	109,208,924	16,778
2000	8,234	131,837,231	16,011
1999	4,686	55,256,400	11,792
1998	5,597	67,526,888	12,065
1997	5,230	60,016,400	11,475
1996	5,023	57,626,546	11,473
1995	5,137	59,079,928	11,501
1994	4,710	54,838,830	11,643
1993	4,668	56,946,193	12,199
1992	4,485	53,442,716	11,916
1991	4,124	47,833,245	11,599
1990	3,552	37,420,164	10,535
1989	3,343	34,228,699	10,239
1988	3,062	30,186,710	9,858
1987	2,732	25,111,565	9,192
1986	2,507	21,348,087	8,515
1985	2,238	16,933,038	7,566
1984	1,725	11,469,048	6,649
1983 and Earlier	12,291	81,766,322	5,916
Totals	207,400	3,119,513,837	15,041

Counts of members include alternate payees receiving benefits while the member is still working. Multiple records may exist for those who have service in more than one coverage group. This does not result in double counting of liabilities.

1 – The numbers for 2014 are for the first 6 months of the calendar year only.

APPENDIX D

NORMAL COST INFORMATION

- **NORMAL COST CHART**
- **DEVELOPMENT OF PEPRA MEMBER CONTRIBUTION RATE**

Normal Cost Chart

The normal cost is determined using the Entry Age Normal Cost method. Some important features of this method are that the costs are dependent upon a member's entry age in the plan and benefit level of the plan. In general the lower the entry age the lower the total normal cost. Note that future costs may vary as the entry age of the members change. FAC means Final Average Compensation.

Schools	Total Normal Cost	Employee Contribution ¹	Range of Breakpoints	Average Effective Member Rate	Employer Normal Cost
Schools 2% @ 62 - 3 Year FAC	12.0%	6.0%	-	6.0%	6.0%
Schools 2% @ 55 - 1 Year FAC	14.8%	7.0%	-	7.0%	7.8%

Notes:

1-Employee contribution rates are based on rates in effect during the 2015-16 fiscal year.

Development of PEPRAs Member Contribution Rates

The table below shows the determination of the Member contribution rates based on 50 percent of the Total Normal Cost on June 30, 2014.

Assembly Bill (AB) 340 created PEPRAs that implemented new benefit formulas and a final compensation period as well as new contribution requirements for new employees. In accordance with Section Code 7522.30(b), "new members ... shall have an initial contribution rate of at least 50 percent of the normal cost rate." The normal cost for the plan is dependent on the benefit levels, actuarial assumptions and demographics of the plan particularly the entry age into the plan.

Plan	Basis for Current Rate		Rates Effective July 1, 2015			
	Total Normal Cost ¹	Member Rate	Total Normal Cost ²	Change	Change Needed	Member Rate
Schools	12.08%	6.00%	12.00%	0.08%	No	6.00%
¹ As of June 30, 2012 valuation date			² As of June 30, 2014 valuation date			

APPENDIX E

GLOSSARY OF ACTUARIAL TERMS

- **GLOSSARY OF ACTUARIAL TERMS**

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 such things as 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.

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. However, all bases are amortized using investment and payroll assumptions from the current valuation. This can be likened to a home having a first mortgage of 24 years remaining payments and a second mortgage that has 10 years remaining payments. Each base or each mortgage note has its own terms (payment period, principal, etc.)

Generally, in an actuarial valuation, the separate bases consist of changes in unfunded liability due to contract amendments, actuarial assumption changes, actuarial methodology changes, and or 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.

Classic Member (under PEPRA)

A classic member is a member who joined CalPERS prior to January, 1, 2013 and who is not defined as a new member under PEPRA. (See definition of new member below)

Discount Rate Assumption

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. In most cases, this is the age of the member on their date of hire.

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 yield a rate expressed as a level percentage of payroll. (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 on the date of hire, the greater the entry age normal cost. This is mainly because there is less time to earn investment income to fund the future benefits.)

Fresh Start

A Fresh Start is when multiple amortization bases are collapsed to one base and amortized together over a new funding period.

Funded Status

A measure of how well funded, or how "on track" a plan or risk pool is with respect to assets verses 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 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 the first fiscal year beginning after June 15, 2014.

New Member (under PEPR)

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

The annual cost of service accrual for the upcoming fiscal year for active employees. The normal cost should be viewed as the long term contribution rate.

Pension Actuary

A business professional that is authorized by the Society of Actuaries, and the American Academy of Actuaries to perform the calculations necessary to properly fund a pension plan.

PEPRA

The California 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.

Rolling Amortization Period

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

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