SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

205

FROM: Executive Office

SUBMITTAL DATE:
June 16, 2015

SUBJECT: Pension Advisory Review Committee 2015 Annual Pension Report [Districts: All] [$0]

RECOMMENDED MOTION: That the Board of Supervisors:

1. Receive and file the attached FY 2014/15 Annual Report;
2. Adopt the recommendation to use the money in the Liability Management Fund to reduce the County's CalPERS liability by transferring the funds to CalPERS;
3. Adopt the recommendation to pre-pay a portion up to two-thirds of the County's FY 2015/16 pension cost if, in the judgment of the County Executive Officer or his designee market conditions prove to be favorable; and,
4. Adopt the recommendation for an OPEB disbursement of $2 million to pay down the CalPERS unfunded liability.

BACKGROUND:

Summary

Board Policy B-25 (Pension Management Policy) requires the Pension Advisory Review Committee (PARC) to file an annual report on the County's pension plan status. The attached report fulfills that requirement. (Continued)

Departmental Concurrence

Don Kent
County Treasurer-Tax Collector

Michael T. Stock
Assistant County Executive Officer/
Human Resources Director

Ed Corser
County Finance Director

FINANCIAL DATA	Current Fiscal Year:	Next Fiscal Year:	Total Cost:	Ongoing Cost:	POLICY/CONSENT (per Exec. Office)
COST	$	$	$	$	Consent ☐ Policy ☐
NET COUNTY COST	$	$	$	$	

SOURCE OF FUNDS:

Budget Adjustment:
For Fiscal Year: 2014/15

C.E.O. RECOMMENDATION: **APPROVE**

BY: Ivan M. Chand 5/27/2015

County Executive Office Signature

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Ashley, seconded by Supervisor Benoit and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Jeffries, Tavaglione, Washington, Benoit and Ashley
Nays: None
Absent: None
Date: June 16, 2015
xc: E.O.

Kecia Harper-Ihem
Clerk of the Board
By: Deputy

☐ Positions Added ☐ Change Order ☐ A-30 ☐ 4/5 Vote

Prev. Agn. Ref.: | **District: ALL** | **Agenda Number:** 3-9

BACKGROUND:
Summary (continued)

REPORT SUMMARY

Pension Reform:

The Board of Supervisors took the initiative on pension reform. As a result of labor negotiations, employees took on the responsibility of making the Employee Paid Member Contributions (EPMC). Based on projections made by Bartel Associates, in FY 14/15, it is anticipated that the County will realize $86.7 million annual savings.

Due to the passage of Assembly Bill (AB) 340, which created the Public Employees' Pension Reform Act (PEPRA), a third tier was added to the County's pension plan. The attached report has additional detail outlining the changes; however, listed below is a table of the changes.

		Plan	EPMC	Earliest Retirement Age	PEPRA Compensation Limits	Final Benefit	Effective Date
County Plan Tier I							
	Misc	3% at 60	No	50	N/A	12 months	N/A
	Safety	3% at 50	No	50	N/A	12 months	N/A
County Plan Tier II							
	Misc	2% at 60	No	50	N/A	36 months	8/23/2012
	Safety	2% at 50	No	50	N/A	36 months	8/23/2012
County Plan III (PEPRA)							
	Misc	2% at 62	No	52	$117,020*	36 months	1/1/2013
	Safety	2.7% at 57	No	50	$140,424*	36 months	1/1/2013
*2015 Compensation Limits are Indexed Annually							

Funded Status:

The June 30, 2015 projected actuarial funded status based on the market valuation for the Miscellaneous plan, including Pension Obligation Bonds (POB's) proceeds is expected to be 85.1%. The projected actuarial funded status based on the market valuation for the Safety Plan including POB's, is 83.3%. The overall funding ratio of both plans is 84.6%. The Pension Advisory Review Committee (PARC) Advisor, Bartel Associates, projects a combined Miscellaneous and Safety June 30, 2015 Accrued Value of Assets of $6.71 billion on a Market Value Basis, and, a POB balance of $320 million. The County has a projected Unfunded Accrued Actuarial Liability of $1.285 billion.

Employer Rate Outlook:

Over the last year, CalPERS made several changes that will increase contribution rates beginning July 1, 2015. Some of the primary changes in rates are mortality improvement, fixed amortization periods, elimination of caps on rate increases, and no asset smoothing. We expect the impact of these changes to start with the FY 15/16 rates. The full impact is expected to take effect in FY 20/21. Page 4 of the attached report has a table with the expected impact.

Due to the change in assumptions, the County's rates are projected to increase for the next five to six years. In FY 16/17, the County rate is expected to increase by 1.571% for Miscellaneous and 3.815% for Safety.

Liability Management Fund:

The purpose of the fund is to reduce pension costs and accelerate the repayment of pension liabilities. By Board policy, each year PARC recommends whether the funds should be used to pay down the CalPERS unfunded liability or the buy down the POB. At the end of the last fiscal year, a payment of $1 million was made to PERS from this fund. As of the writing of this report, the fund has a balance of $3.0 million.

Annual Prepayment:

CalPERS offers early payment discounts of 3.75 percent in lieu of periodic payments that coincide with payroll disbursements. PARC first recommended seizing this opportunity in 2004 and expects to continue to do so if market conditions prove to be favorable in funding the pre-payment. The amount we pay is a portion of up to two-thirds of the County's annual liability. During FY 14/15, the County prepaid $86.5 million of its PERS liability. In FY 15/16, we expect to prepay CalPERS a similar amount. We will be calculating the final amount as part of our Tax Revenue Anticipation Notes (TRANs) financing. If market conditions remain consistent up to the time of the TRANs financing, and the County is able to issue notes at approximately 0.4 percent with the prepayment savings from CalPERS of approximately 3.75 percent, the borrowing will produce a net savings of 3.35 percent, or approximately $3 million.

Other Post-Employment Benefits (OPEB):

The County invests its OPEB assets with the California Public Employers' Retirement Benefit Trust program (CERBT). Effective January 1, 2011, CalPERS introduced three new investment allocation strategies for CERBT. PARC reviewed the details of the strategies and adopted Strategy 1, an asset allocation strategy most similar to the investment allocation strategy followed by CERBT prior to January 1, 2011, with an expected rate of return of 7.61 percent. CERBT recently lowered its investment strategy to 7.28 percent. As of June 30, 2014, the CERBT is 85% funded. As the OPEB Trust is well funded, a disbursement could reduce the CalPERS liability.

Impact on Citizens and Businesses

An increase in pension costs, in turn increases the costs of services that are provided to the citizens of the County. Departments continue to look for efficiencies to minimize the effect on the citizens.

SUPPLEMENTAL:

Additional Fiscal Information
N/A

Contract History and Price Reasonableness
N/A

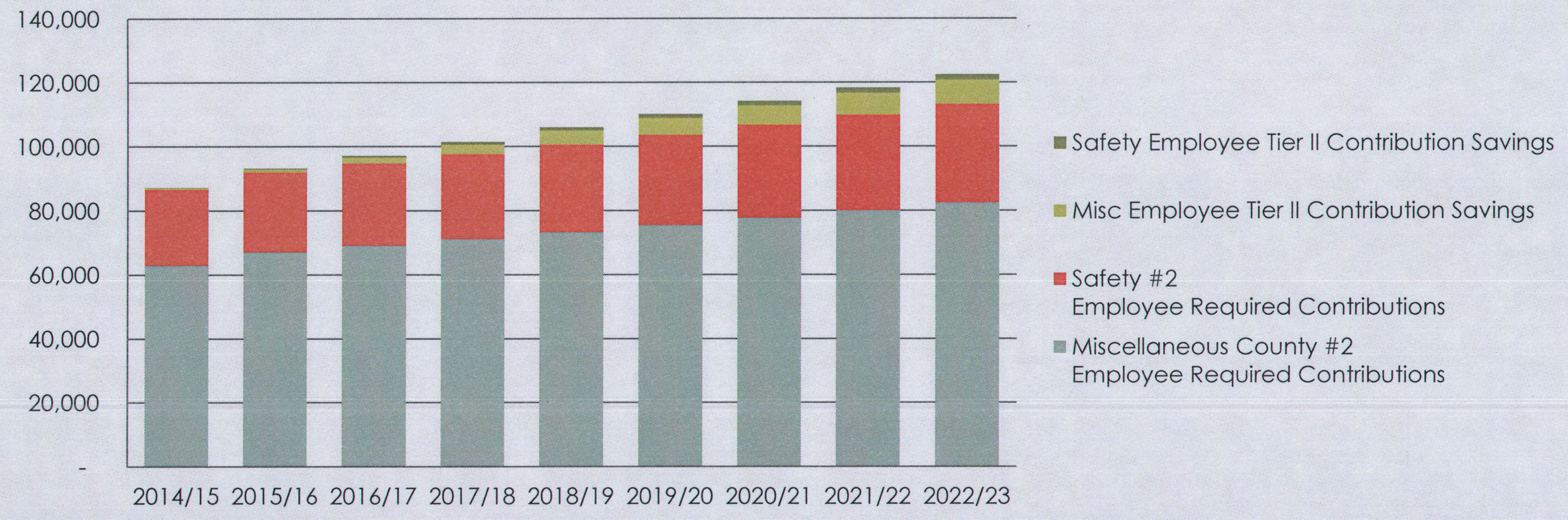
PENSION ADVISORY REVIEW COMMITTEE REPORT

2015

06·16·2015
3-9

PENSION SAVINGS CHART

Miscellaneous & Safety
Tier II and Employee Contribution Savings ($000s)



	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Total Savings	87,385	93,419	97,313	101,624	106,188	110,269	114,390	118,486	122,601

FUNDING STATUS

	FY 13/14	FY 14/15
• Miscellaneous	80%	85.1%
• Safety	80%	83.3%
• OPEB (Other Post Employment Benefits)	61%	85.0%

CALPERS INVESTMENT EARNINGS

	Market Value of Assets	Actuarial Value of Assets	Net Accumulated (Arithmetic) Market Increase/(Decrease) Since 2008
■ June 30, 2008	(5.1%)	7.6%	
• Gain/(Loss)	(12.9%)	(0.2)%	(12.9%)
■ June 30, 2009	(24.0)%	5.4%	
• Gain/(Loss)	(31.8)%	(2.4)%	(44.7%)
■ June 30, 2010	13.3%	5.9%	
• Gain/(Loss)	5.5%	(1.9)%	(39.2%)
■ June 30, 2011	21.7%	6.7%	
• Gain/(Loss)	13.9%	(1.1)%	(25.3%)
■ June 30, 2012	0.1%	6.1%	
• Gain/(Loss)	(7.4)%	(1.7)%	(32.7%)
■ June 30, 2013	13.2%	6.7%	
• Gain/(Loss)	5.7%	(0.8)%	(27.0%)
■ June 30, 2014	18.4%	N/A	
• Gain/(Loss)	10.9%		(16.1%)

PENSION RATE CHANGE

	FY 14/15	FY 15/16
• Miscellaneous	14.5%	15.4%
• Safety	21.9%	23.6%

- Total Increase = $27.7 million

CALPERS /GASB ASSUMPTION CHANGES

A. 5-year ramp up

B. No asset smoothing

C. Future Gains/Losses 25 year amortization period
   - 5-year ramp up period will allow payment over 30 years

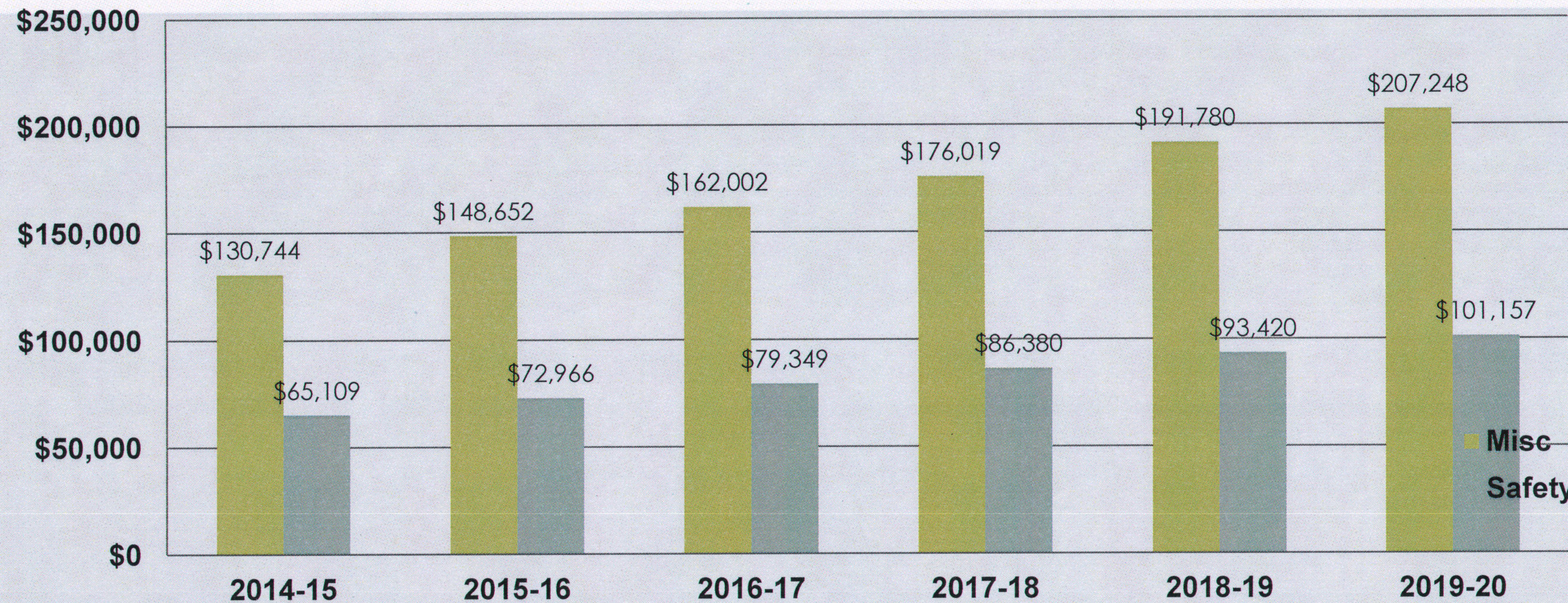
D. Method and Assumption changes to be realized over a 15-year amortization period
   - 5-year ramp up period will allow payment over 20 years

E. No cap on rate increases each year

F. Change as a result of new experience study, including mortality improvement and other demographic assumptions

G. GASB 68 requires liabilities to be added to financial statements as opposed to Notes to the Financial Statements.

CALPERS PROJECTED RATES



Miscellaneous Plan of the County of Riverside

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Contribution Rates:	14.527%	15.5%	16.4%	17.3%	18.3%	19.2%
Projected PERSable Wages ('000)	900,006	959,046	987,818	1,017,452	1,047,976	1,079,415
Required Contributions	130,744	148,652	162,002	176,019	191,780	207,248

Safety Plan of the County of Riverside

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Contribution Rates:	21.899%	23.3%	24.6%	26.0%	27.3%	28.7%
Projected PERSable Wages ('000)	297,313	313,160	322,555	332,231	342,198	352,464
Required Contributions	65,109	72,966	79,349	86,380	93,420	101,157

2015

Pension Advisory Review Committee

2015 Annual Pension Report

ANNUAL PARC REPORT

The County's Pension Advisory Review Committee (PARC) was established in 2003 to guide policy decisions about retirement benefits. PARC is a Brown Act Committee and consists of those members appointed by the Board of Supervisors, including the Treasurer/Tax Collector, County Finance Director, and the Human Resources Director.

A key responsibility of PARC is to report to the Board and the public on important developments affecting County retirement benefit plans and provide information about projected costs and funding status. This report includes information from the most recent actuarial report prepared for the County by John Bartel of Bartel Associates, LLC. (Attachment 1). It also includes the latest CalPERS' Valuation Reports for Miscellaneous and Safety (Attachments 2 and 3).

CalPERS Changes

Over the last year, CalPERS' actuarial staff implemented several changes. They included:

- Eliminating asset smoothing
- Five-year ramp up of impact of eliminating asset smoothing

These changes were included in CalPERS 06/30/13 valuation, with the first impact in the FY 15/16 rates with full impact in FY 19/20.

CalPERS also approved some assumption changes. The largest change is the anticipation of future mortality improvement. This will be included in the 06/30/14 valuation with the first impact in FY 16/17 and full impact in FY 20/21.

Another adjustment CalPERS initiated was Risk Pool Changes. The changes are as follows:

- All Risk Pools combined into two Risk Pools, one for Miscellaneous and one for Safety. In prior years, the risk pools were segregated by retirement formulas; however, now we have one for Miscellaneous and one for Safety. Collect payment on Unfunded Actuarial Liability (UAL) as a dollar amount and not as a percent (%) of pay
- Payments allocated to agencies based on their portion of the Risk Pool's liability and assets rather than payroll

The Risk Pool changes were included in CalPERS' 06/30/13 valuation impacting FY 15/16 rates (note: this change was not phased in over five years).

In addition to CalPERS' changes, FY 14/15 will start the implementation of GASB 68.

- The primary requirement of GASB 68 requires governments providing defined benefit pension plans to recognize their Long-Term obligation for pension benefits on the Balance Sheet. Prior to this fiscal year, the liabilities were shown in the notes to the financial statements
- Liabilities for Internal Service Funds and Enterprise Funds will be on the Balance Sheet indicating negative net assets

- GASB 68 encourages faster funding by requiring a lower discount rate for funding that is too slow

Most of the adopted changes impact the County's FY 2015/16 rates and the full impact is expected to occur in the FY 19/20 rates. Mortality and other demographic assumption changes will begin to be reflected in FY 2016/17. The full impact of the assumption changes are expected take effect in FY 20/21.

1. **Funding Status:** The June 30, 2015 projected actuarial funded status based on the market valuation for:
    a. The Miscellaneous Plan, including Pension Obligation Bonds (POB) proceeds but not amounts owed on the POB, is expected to be 85.1%.
    b. The Safety Plan, including POB proceeds but not amounts owed on the POB, is expected to be 83.3%.

The July 2008 State and Local Government Pension Plans report published by the United States Government Accountability Office states, "Many experts consider a funded ratio based on the actuarial asset value of 80% or better to be sound for government pensions." Bartel suggests that in order to increase the funding status, one option is to place additional funds into the pension plan or a supplemental pension trust, which would reduce the unfunded liability. Bartel also states that a pension plan should be considered a very long-term proposition that should not be viewed in the context of short-term bright line tests.

2. **Employer Rate Outlook:** The employer contribution rates for the Miscellaneous Plan will increase from 14.527% of payroll in FY 14/15 to 15.429% in FY 15/16. Safety Employer Contribution rates will increase from 21.899% in FY 14/15 to 23.585% in FY 15/16. The CalPERS' combined increase is projected to be equivalent to $27.7 million based on current payroll. The higher rates are projected for the next 5 - 6 years as future rates are expected to rise due to the changes outlined above.

    As described earlier, CalPERS has made several changes that will increase contribution rates beginning July 1, 2015. Listed below are tables with the projected changes for Miscellaneous and Safety. These projections are based on data from the Bartel Associates Report and the rates include POB debt service.

Miscellaneous Projected Rates and Payments ($ Thousands)				
FY	CalPERS Base	County Rate	County Payment	Change in Amount
2014/15	908,760	17.1%	155,398	0
2015/16	936,023	18.1%	169,420	14,022
2016/17	964,103	19.3%	186,072	16,652
2017/18	993,026	20.3%	201,584	15,512
2018/19	1,022,817	21.1%	215,814	14,230
2019/20	1,053,502	22.1%	232,824	17,010
2020/21	1,085,107	22.3%	241,979	9,155
2021/22	1,117,660	22.4%	250,356	8,377
2022/23	1,151,190	22.3%	256,715	6,359

Payment Increase FY 14/15 to FY 22/23 = $101,317

Safety Projected Rates and Payments ($ Thousands)				
FY	CalPERS Base	County Rate	County Payment	Change in Amount
2014/15	287,887	24.2%	69,669	0
2015/16	296,524	25.9%	76,800	7,131
2016/17	305,419	29.2%	89,182	12,382
2017/18	314,582	31.0%	97,520	8,338
2018/19	324,019	32.8%	106,278	8,758
2019/20	333,740	34.7%	115,808	9,530
2020/21	343,752	35.1%	120,657	4,849
2021/22	354,065	35.2%	124,631	3,974
2022/23	364,687	34.8%	126,911	2,280

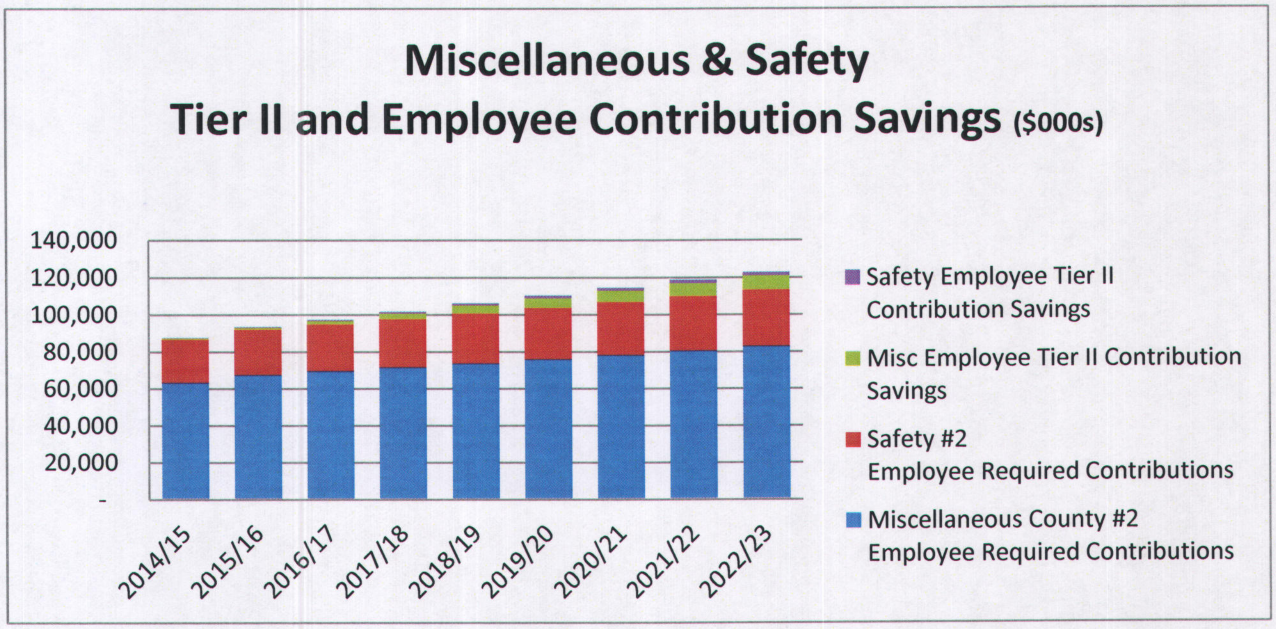
Payment Increase FY 14/15 to FY 22/23 = $ 57,242

3. **Pension Reform:** For some time, pension reform has been a topic of debate at local and national levels. Riverside County took the lead in initiating pension reform with its bargaining units. As a result of bargaining, employees of the County were required to pay their own member contribution, i.e. eliminating the Employer Paid Member Contribution (EPMC). Additionally, a new second retirement Tier (Tier II) was implemented with a lower benefit formula, which became effective on August 24, 2012. A new tier was added in both the Miscellaneous and Safety units of the County. At the same time, Governor Brown initiated proposals resulting in changes to pension benefits. The passage of Assembly Bill (AB) 340 created the Public Employees' Pension Reform Act (PEPRA) that implemented new lower benefit formulas, final compensation periods, and new contribution requirements for new employees hired on or after January 1, 2013 who meet the definition of a new member under PEPRA (known as Tier III). The lower benefit formula for Tier III is 2% at 62 for

Miscellaneous and 2.7% at 57 for Safety. Employee contribution rates for Tier III vary based on PEPRA rules. Listed below is a table with the new options and the important changes.

				Plan	EPMC	Earliest Retirement Age	PEPRA Compensation Limits	Final Compensation	Effective Date
County Plan Tier I									
	Misc			3% at 60	No	50	N/A	12 months	N/A
	Safety			3% at 50	No	50	N/A	12 months	N/A
County Plan Tier II									
	Misc			2% at 60	No	50	N/A	36 months	8/24/2012
	Safety			2% at 50	No	50	N/A	36 months	8/24/2012
County Plan Tier III (PEPRA)									
	Misc.			2% at 62	No	52	$117,020*	36 months	1/1/2013
	Safety			2.7% at 57	No	50	$140,424*	36 months	1/1/2013
*2015 Compensation Limits are Indexed Annually									

The chart below reflects the annual savings the Board has realized as a result of implementing pension reform.



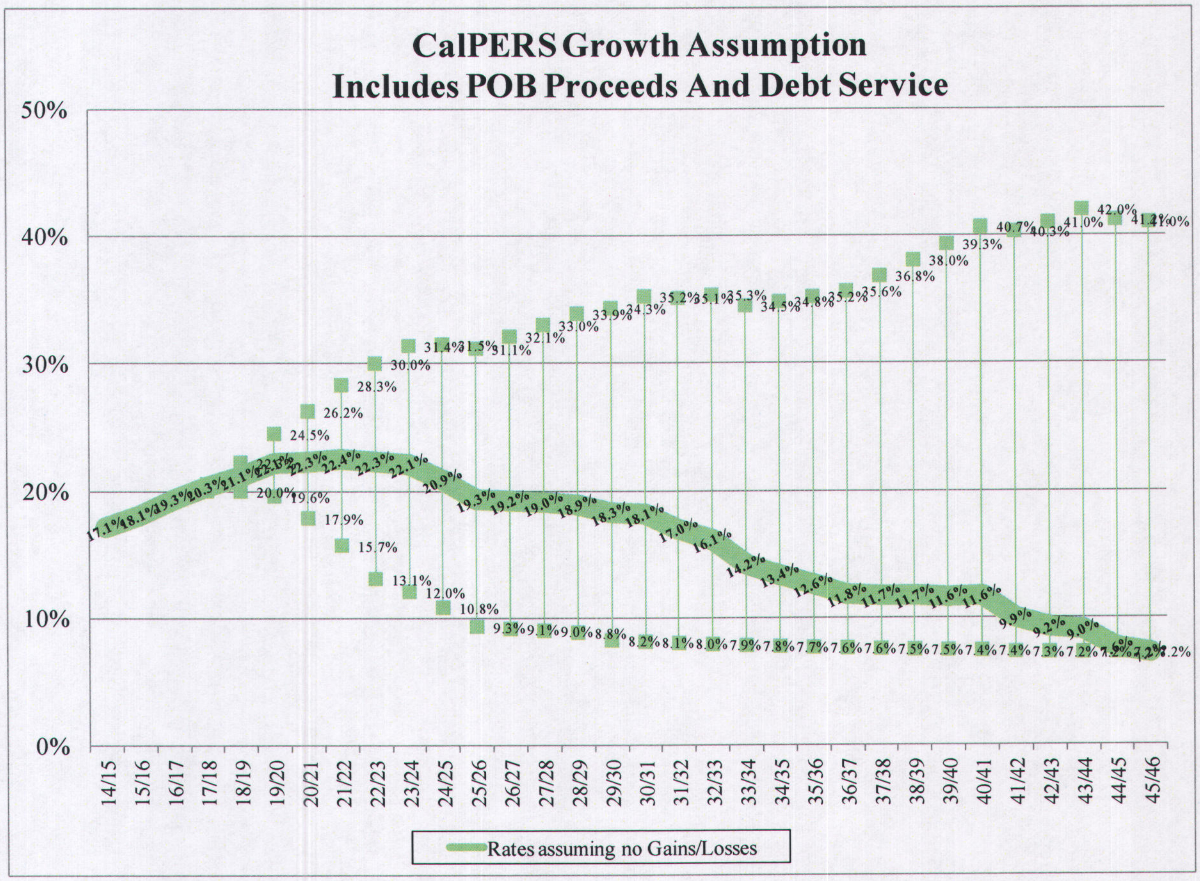
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Total Savings	87,385	93,419	97,313	101,624	106,188	110,269	114,390	118,486	122,601

CalPERS also made changes as a result of several fiscal years of losses. The table below lists the losses and recoveries since fiscal year 2008. CalPERS indicated it has no immediate plans to change the current discounted rate of 7.50%.

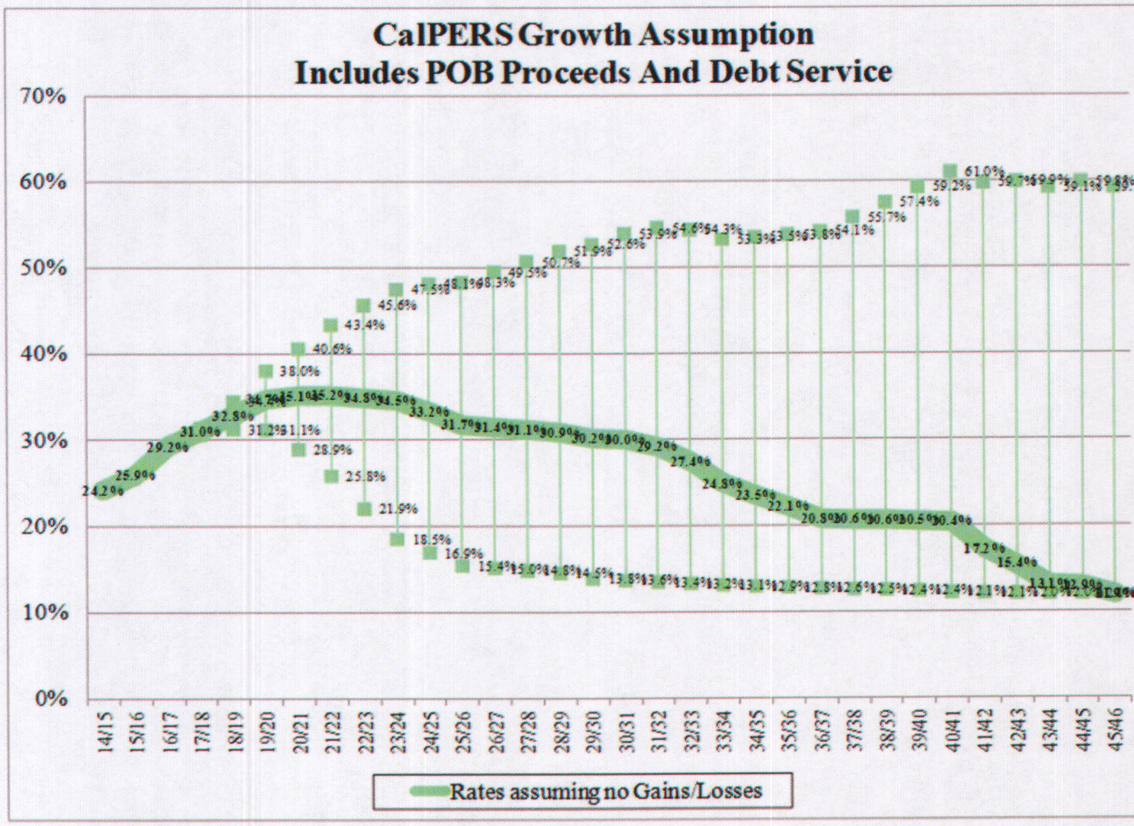
	Market Value of Assets	**Actuarial Value of Assets**	**Net Accumulated (Arithmetic) Market Increase/(Decrease) Since 2008**
■ June 30, 2008 ● Gain/(Loss)	(5.1%) **(12.9%)**	7.6% **(0.2)%**	**(12.9%)**
■ June 30, 2009 ● Gain/(Loss)	(24.0)% **(31.8)%**	5.4% **(2.4)%**	**(44.7%)**
■ June 30, 2010 ● Gain/(Loss)	13.3% **5.5%**	5.9% **(1.9)%**	**(39.2%)**
■ June 30, 2011 ● Gain/(Loss)	21.7% **13.9%**	6.7% **(1.1)%**	**(25.3%)**
■ June 30, 2012 ● Gain/(Loss)	0.1% **(7.4)%**	6.1% **(1.7)%**	**(32.7%)**
■ June 30, 2013 ● Gain/(Loss)	13.2% **5.7%**	6.7% **(0.8)%**	**(27.0%)**
■ June 30, 2014 ● Gain/(Loss)	18.4% **10.9%**	N/A	**(16.1%)**

4. Listed below are two charts that show the projected rates for the County's pension obligations. Over the next few years, rates are going to remain high as CalPERS' assumption changes are absorbed. Once the smoothing is completed and assuming no other changes, the rates will start to decline.

CONTRIBUTION PROJECTIONS - MISCELLANEOUS



CONTRIBUTION PROJECTIONS - SAFETY



5. **Pension Obligation Bond (POB):** The remaining POB debt is $320.5 million and the bonds have a remaining 20-year life maturity. Bartel's analysis shows that as of February 15, 2015, the County has a $68 million net savings as a result of the sale of the bonds in February 2005. This is a $36.7 million improvement compared to last year's report. The POB has a relatively low break-even rate (4.91%) and CalPERS' expected return is 7.50%. If CalPERS earns the assumed targeted rate of return, the County can expect to produce savings over the remaining life of the bonds.

6. **Liability Management Fund:** The purpose of the fund is to reduce pension costs and accelerate the repayment of pension liabilities. Per Board policy, each year PARC recommends whether the funds should be used to pay down the CalPERS' unfunded liability or to buy down the POB. At the end of last fiscal year, a payment of $3.1 million was made to CalPERS from this fund. As of the writing of this report, the fund has a balance of $2.0 million.

7. **Annual Prepayment:** CalPERS offers early payment discounts of 3.75% in lieu of periodic payments that coincide with payroll disbursements. PARC first recommended seizing this opportunity in 2004 and expects to continue to do so if market conditions prove to be favorable in funding the pre-payment. The amount paid can be a portion of up to two-thirds of the County's annual liability. In FY 14/15, the County prepaid CalPERS $86.5 million (Safety $29.6 + Miscellaneous $56.9 = $86.5) million. The County will calculate the final amount due as part of the annual Tax Revenue Anticipation Notes (TRAN's) financing. The County is projecting to issue TRAN's at approximately

0.4%. The pre-payment savings from CalPERS are at approximately 3.75%, which equates to approximately $3 million in savings.

8. **Other Post-Employment Benefits (OPEB):** The County invests its OPEB assets with the California Public Employers' Retirement Benefit Trust program (CERBT). Effective January 1, 2011, CalPERS introduced three new investment allocation strategies for CERBT. PARC reviewed the details of the strategies and adopted Strategy 1, an asset allocation strategy most similar to the investment allocation strategy followed by CERBT prior to January 1, 2011, with an expected rate of return of 7.61%. CERBT lowered its investment strategy expected return to 7.28%. As of June 30, 2014, the CERBT is funded at 85 percent. Since the OPEB trust fund is well funded, the committee discussed the potential of the trust reimbursing the County for the Annual Required Contribution and decided to have the ARC reimbursed from the trust to the County. This strategy will allow the County to keep the trust well-funded and will allow those funds to be used to reduce the CalPERS liability.

Recommendations:

1. Receive and file the 2015 PARC Annual Pension Report.

2. Adopt the recommendation to use the money in the Liability Management Fund to reduce the County's CalPERS' liability by transferring the funds to CalPERS.

3. Adopt the recommendation to pre-pay a portion up to two-thirds of the County's FY 2015/16 pension cost if, in the judgment of the County Executive Officer or his designee market conditions prove to be favorable.

4. Adopt the recommendation for an OPEB disbursement of $2 million to pay down the CalPERS unfunded liability.

Appendices:

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1. *Bartel Associates CalPERS' Actuarial Issues – 6/30/13 Valuation- March 11, 2015*
2. *CalPERS 06/30/13 Miscellaneous Actuarial Valuation Reports*
3. *CalPERS 06/30/13 Safety Actuarial Valuation Reports*
4. *County of Riverside Postretirement Benefits Plan Actuarial Valuation 07/01/2014*

COUNTY OF RIVERSIDE
MISCELLANEOUS AND SAFETY PLANS

BARTEL ASSOCIATES, LLC

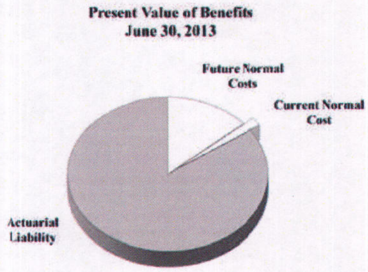
CalPERS Actuarial Issues – 6/30/13 Valuation
Preliminary Results

Presented by **John E. Bartel, President**
Prepared by Bianca Lin, Assistant Vice President
Adam Zimmerer, Actuarial Analyst
Bartel Associates, LLC

March 11, 2015

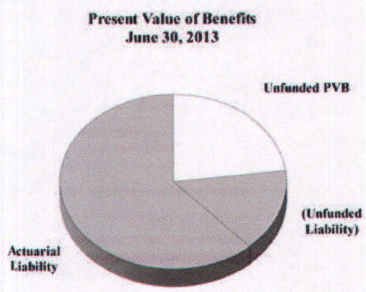
Agenda

DEFINITIONS



- **PVB - Present Value of all Projected Benefits:**
  - Discounted value (at valuation date - 6/30/13), of all future expected benefit payments based on various (actuarial) assumptions
- **Actuarial Liability:**
  - Discounted value (at valuation date) of benefits earned through valuation date [value of past service benefit]
  - Portion of PVB "earned" at measurement
- **Current Normal Cost:**
  - Portion of PVB allocated to (or "earned" during) current year
  - Value of employee and employer current service benefit

DEFINITIONS



- **Target-** Have money in the bank to cover Actuarial Liability (past service)
- **Unfunded Liability -** Money short of target at valuation date
- **Excess Assets / Surplus:**
  - Money over and above target at that point in time.
  - Doesn't mean you're done contributing.
- **Super Funded:**
  - Assets cover whole pie (PVB)
  - If everything goes exactly like PERS calculated, you'll never have to put another (employer or employee) dime in.

CalPERS Changes

- Contribution policy changes:
  - No asset smoothing
  - 5-year ramp up
  - Included in 6/30/13 valuation (first impact 15/16 rates; full impact 19/20)
- Assumption changes:
  - Anticipate future mortality improvement
  - Other, less significant, changes
  - Included in 6/30/14 valuation (first impact 16/17 rates; full impact 20/21)
- Risk Pool changes
  - All Risk Pools combined into one Miscellaneous & one Safety
  - Collect payment on UAL as dollar amount, not as % of pay
  - Payments allocated to agencies based on liability & assets rather than payroll
  - Included in 6/30/13 valuation (impacts 15/16 rates)

CalPERS Changes

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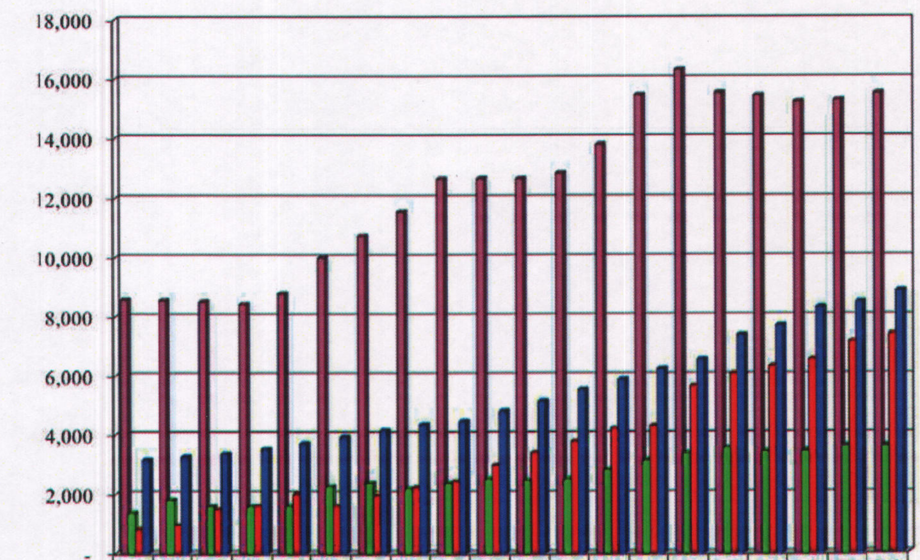
SUMMARY OF DEMOGRAPHIC INFORMATION - MISCELLANEOUS

	1994	2003	2012	2013
Actives				
■ Counts	8,585	12,671	15,298	15,530
■ Average				
• Age	42	43	44	44
• County Service	8	8	9	10
• PERSable Wages	$34,000	$42,800	$54,700	$55,200
■ Total PERSable Wages (millions)	318.8	596.6	914.0	936.0
Receiving Payments				
■ Counts				
• Service		3,665	7,135	7,480
• Disablity		553	582	578
• Beneficiaries		597	787	822
• Total	3,155	4,815	8,504	8,880
■ Average Annual County Provided Benefit[1]				
• Service		$12,200	$22,800	$23,200
• Disability		6,500	8,800	8,900
• Service Retirements in last 5 years		16,800	27,800	27,600

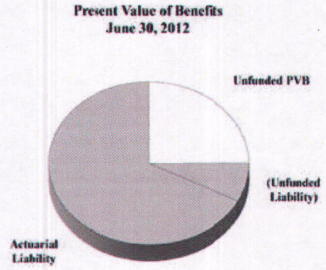
[1] Average County provided pensions are based on County service & County benefit formula, and are not representative of benefits for long service employees.

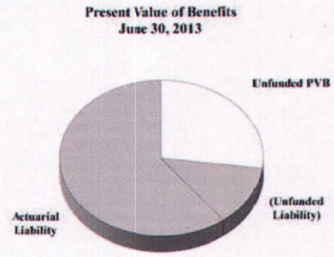
MEMBERS INCLUDED IN VALUATION - MISCELLANEOUS



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Active	8,585	8,555	8,515	8,432	8,783	9,998	10,739	11,562	12,656	12,671	12,664	12,847	13,806	15,474	16,322	15,550	15,446	15,243	15,298	15,530
Transfers	1,369	1,808	1,591	1,591	1,603	2,256	2,373	2,189	2,373	2,513	2,463	2,515	2,821	3,144	3,382	3,548	3,434	3,449	3,630	3,635
Vested Terminations	819	948	1,493	1,603	2,008	1,603	1,951	2,232	2,434	2,976	3,404	3,780	4,215	4,306	5,667	6,082	6,334	6,561	7,162	7,414
Receiving Payments	3,155	3,259	3,365	3,518	3,716	3,935	4,147	4,356	4,467	4,815	5,146	5,544	5,892	6,239	6,554	7,385	7,710	8,318	8,504	8,880

Plan Funded Status - Miscellaneous



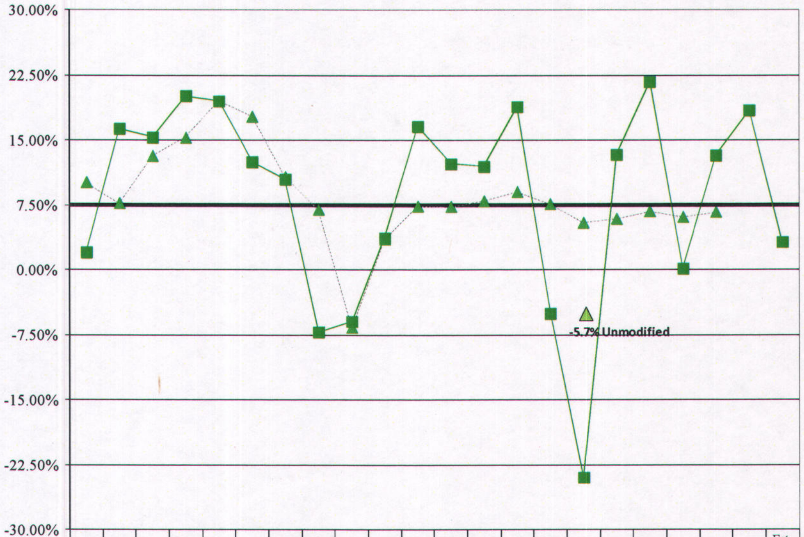


June 30, 2012		June 30, 2013
$ 4,708,900,000	**Actuarial Liability**	$ 5,008,800,000
4,172,400,000	**Actuarial Asset Value**	4,451,600,000
(536,500,000)	**(Unfunded Liability)**	(557,200,000)
June 30, 2012		**June 30, 2013**
$ 4,708,900,000	**Actuarial Liability**	$ 5,008,800,000
3,520,200,000	**Market Asset Value**	3,974,400,000
(1,188,700,000)	**(Unfunded Liability)**	(1,034,400,000)

Plan Funded Status - Miscellaneous

- What happened between 6/30/12 and 6/30/13?
  - Market Value Asset Gain/(Loss) ≈ 213.6 million
  - Unfunded Liability (Increase)/Decrease ≈ (497.9) million
- Reasons for Unfunded Liability increase
  - Actuarial Asset gain/(loss):
    - ☐ Change from actuarial value to market value ≈ (477.2) million
    - ☐ Investment return ≈ (35.0) million
  - Actuarial gain/(loss): ≈ 17.0 million
    - ☐ Average Salary $54,700 → $55,200
    - ☐ Number of Actives 15,298 → 15,530
    - ☐ Number of Inactives 10,792 → 11,049
    - ☐ Number of Retirees 7,135 → 7,480
  - Other gain/(loss): ≈ (2.7) million
    - ☐ Contributions
    - ☐ Other (expected)

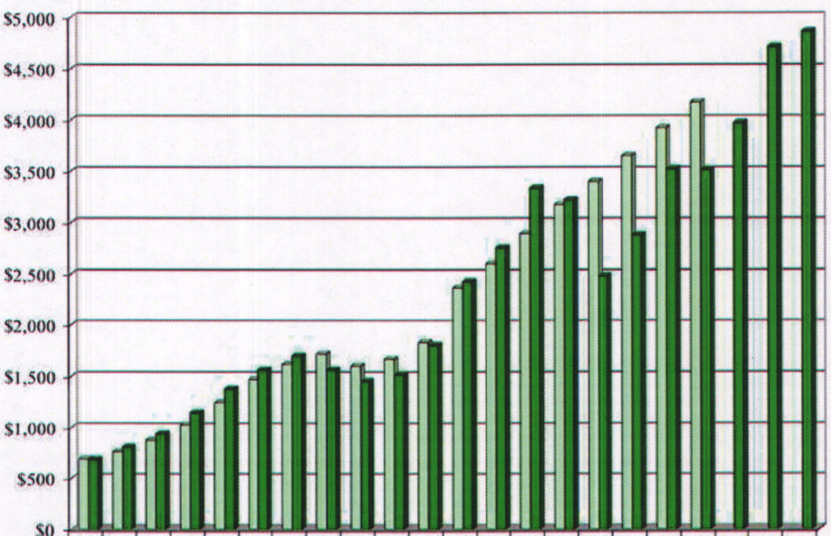
INVESTMENT RETURN - MISCELLANEOUS



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Est. 2015
AVA	10.1%	7.7%	13.2%	15.3%	19.5%	17.7%	10.8%	7.0%	-6.6%	3.5%	7.4%	7.3%	8.0%	9.0%	7.6%	5.4%	5.9%	6.7%	6.1%	6.7%		
MVA	2.0%	16.3%	15.3%	20.1%	19.5%	12.5%	10.5%	-7.2%	-6.0%	3.7%	16.6%	12.3%	11.9%	18.8%	-5.1%	-24.0	13.3%	21.7%	0.1%	13.2%	18.4%	3.2%

Above assumes contributions, payments, etc. received evenly throughout year.
Estimated June 30, 2015 based on CalPERS actual return through 12/31/14 and assumed 7.5% annual return for the remaining 6 months.

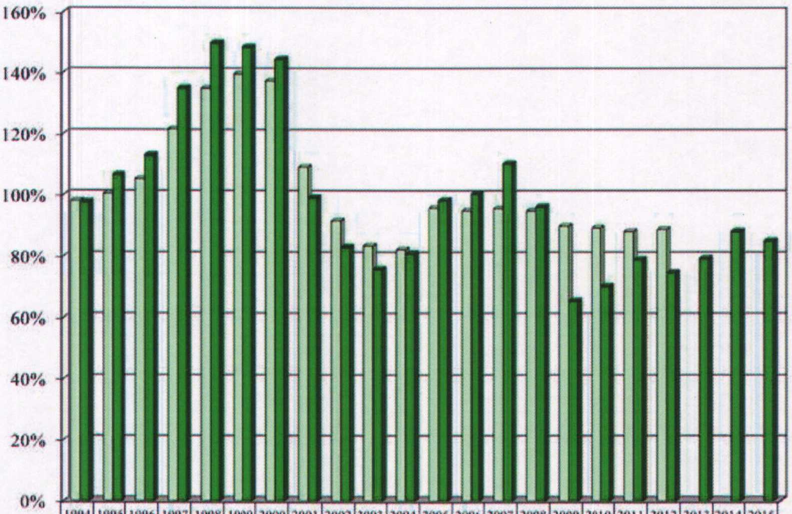
ASSET VALUES (MILLIONS) - MISCELLANEOUS



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Actuarial	690	760	874	1,026	1,241	1,469	1,618	1,721	1,600	1,668	1,834	2,365	2,600	2,894	3,175	3,401	3,653	3,923	4,172			
Market	688	808	939	1,140	1,379	1,564	1,702	1,564	1,454	1,517	1,807	2,429	2,754	3,342	3,223	2,482	2,882	3,526	3,520	3,974	4,721	4,870

6/30/14 & 6/30/15 asset values estimated.
AVA is being set equal to MVA and a separate AVA is not available starting 6/30/13.

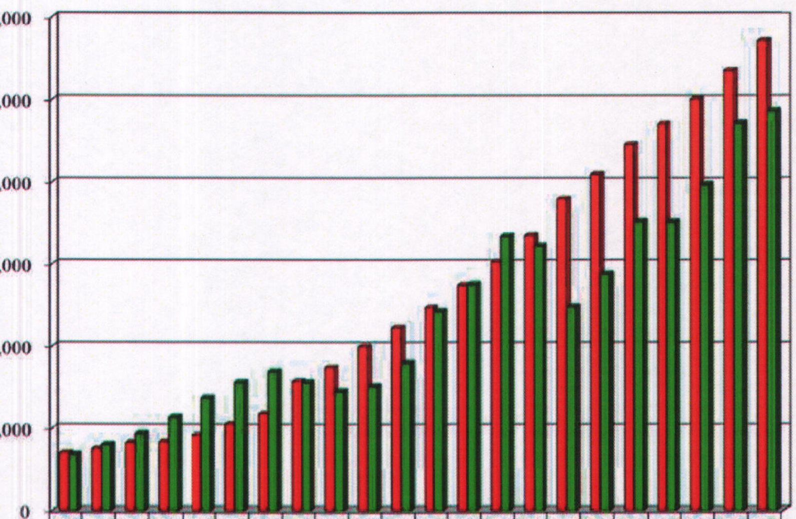
FUNDED RATIO - MISCELLANEOUS



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Funded Ratio - AVA	98%	100%	105%	122%	135%	140%	137%	109%	91%	83%	82%	96%	95%	96%	95%	90%	89%	88%	89%			
Funded Ratio - MVA	98%	107%	113%	135%	150%	149%	144%	99%	83%	76%	81%	98%	100%	110%	96%	65%	70%	79%	75%	79%	88%	85%

6/30/14 & 6/30/15 funded status estimated.
AVA is being set equal to MVA and a separate AVA is not available starting 6/30/13.

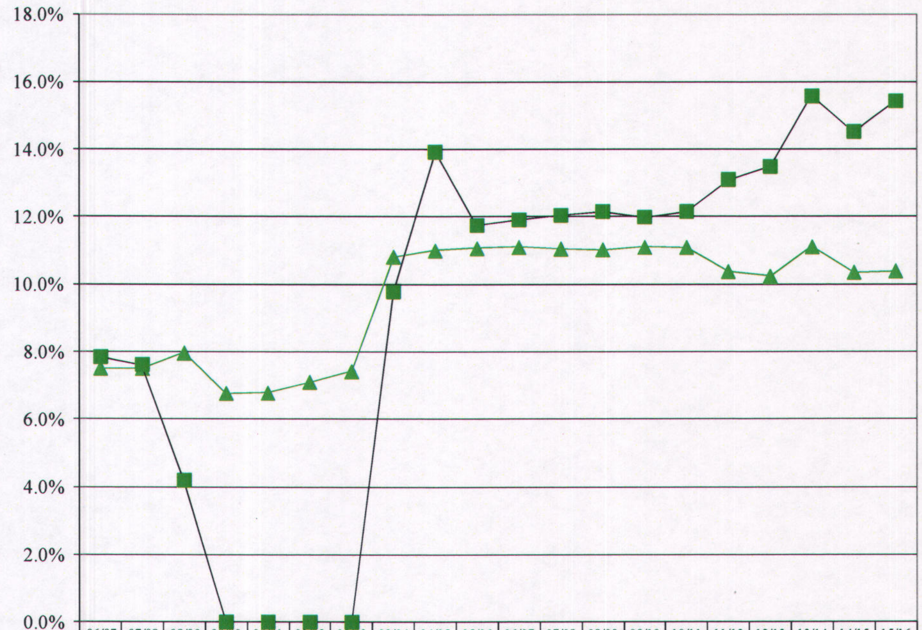
FUNDED STATUS (MILLIONS) - MISCELLANEOUS



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Actuarial Liability	704	757	831	844	920	1,053	1,178	1,577	1,750	1,999	2,232	2,472	2,742	3,029	3,350	3,790	4,097	4,462	4,709	5,009	5,358	5,720
Market Asset Value	688	808	939	1,140	1,379	1,564	1,702	1,564	1,454	1,517	1,807	2,429	2,754	3,342	3,223	2,482	2,882	3,526	3,520	3,974	4,721	4,870

6/30/14 & 6/30/15 funded status estimated

CONTRIBUTION RATES - MISCELLANEOUS



	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
ER Normal Cost	7.5%	7.5%	8.0%	6.8%	6.8%	7.1%	7.4%	10.8%	11.0%	11.1%	11.1%	11.0%	11.0%	11.1%	11.1%	10.4%	10.2%	11.1%	10.3%	10.4%
Total ER Cont Rate	7.8%	7.6%	4.2%	0.0%	0.0%	0.0%	0.0%	9.8%	13.9%	11.8%	11.9%	12.1%	12.2%	12.0%	12.2%	13.1%	13.5%	15.6%	14.5%	15.4%

CONTRIBUTION RATES - MISCELLANEOUS

	6/30/12 2014/2015	6/30/13 2015/2016
■ Total Normal Cost	18.1%	18.1%
■ Employee Normal Cost	7.8%	7.7%
■ Employer Normal Cost	10.3%	10.4%
■ Amortization Bases	4.2%	5.1%
■ Total Employer Contribution Rate	14.5%	15.4%
■ Amortization Period	Multiple	Multiple

- What Happened from 6/30/12 to 6/30/13:
  - 2014/15 Rate 14.5%
  - Asset Method Change 0.7%
  - (Gains)/Losses 0.2%
  - 2015/16 Rate 15.4%

Contribution Projections - Miscellaneous

- Market Value Investment Return:
  - June 30, 2012 — 0.1%[2]
  - June 30, 2013 — 13.2%[2]
  - June 30, 2014 — 18.4%[2]

	Poor	Expected	Good
June 30, 2015[3]	**(0.4%)**	**3.2%**	**6.7%**
June 30, 2016 - 2020	**0.2% - 4.1%**	**7.5%**	**11.3% - 15.1%**

- No Other: Gains/Losses, Method/Assumption Changes, Benefit Improvements
- Excludes Employer Paid Member Contributions (EPMC)
- Includes CalPERS Board adopted assumption changes, first impact 2016/17
- Includes Tier 2 (2%@60) effective October 1, 2011
- New hire assumptions:
  - Assumes 50% of 2013 new hires will be Classic Tier 2 Members (2%@60) and 50% will be New Members with PEPRA benefits.
  - Assumes Classic Members will decrease from 50% to 0% of new hires over 20 years.

---

2 Based on CalPERS CAFR.

3 Based on CalPERS return of (0.5%) through 12/31/14 and assumed annual return for 6 months.

Contribution Projections - Miscellaneous

Payroll Growth Assumptions

	2014/15	2015/16	2016/17	2017/18	2018/19
County #1	3.00%	3.00%	3.00%	3.00%	3.00%
County #2	6.41%	6.56%	3.00%	3.00%	3.00%
CalPERS	3.00%	3.00%	3.00%	3.00%	3.00%

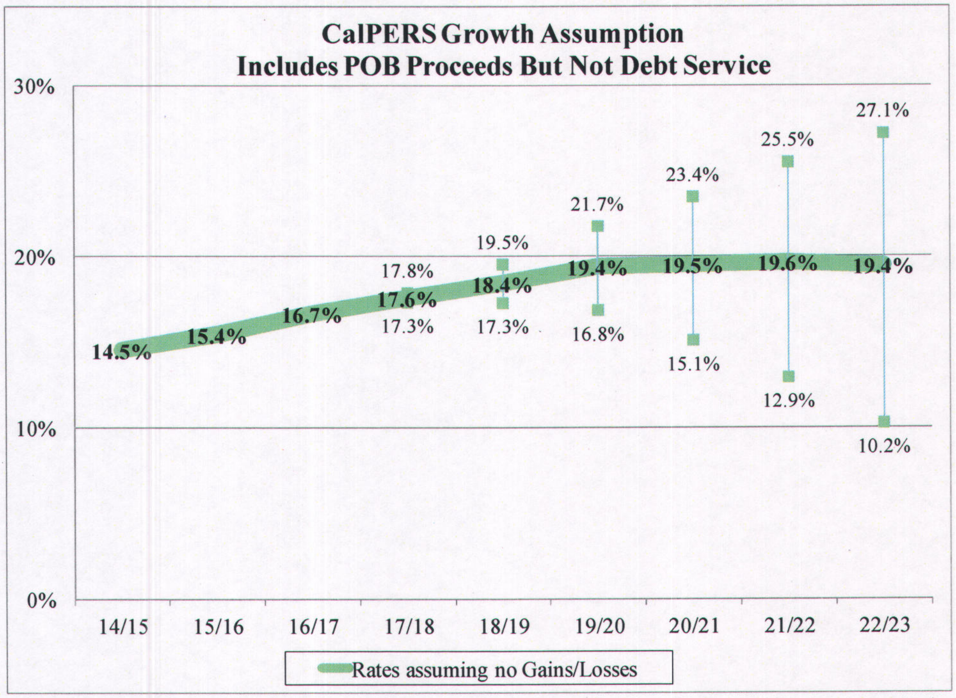
	2019/20	2020/21	2021/22	2022/23
County #1	3.00%	3.00%	3.00%	3.00%
County #2	3.00%	3.00%	3.00%	3.00%
CalPERS	3.00%	3.00%	3.00%	3.00%

Projected PERSable Wages ('000)

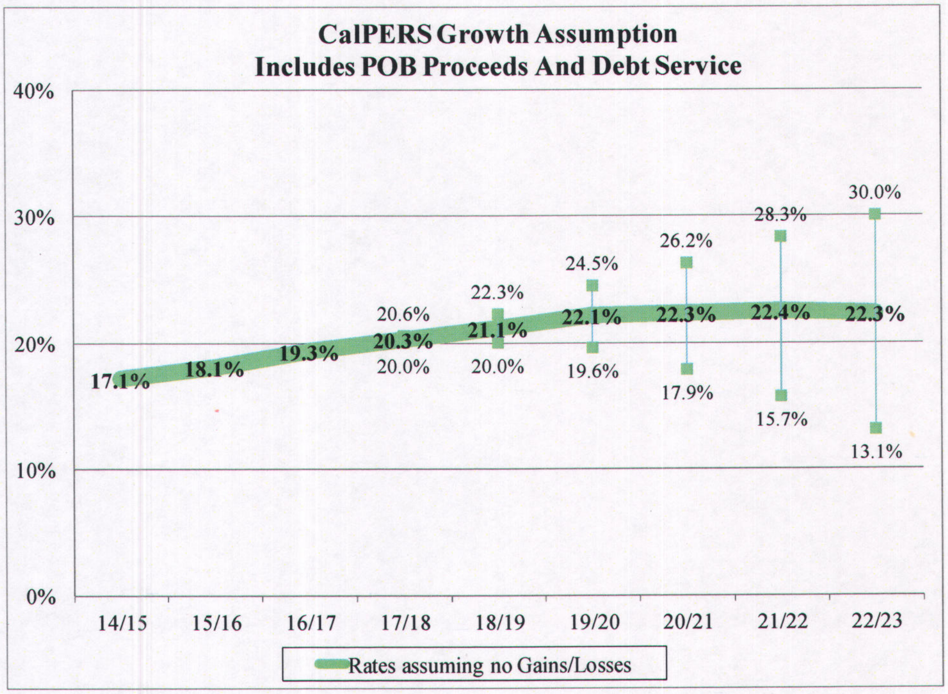
	2013/14	2014/15	2015/16	2016/17	2017/18
County #1	$831,184	$856,120	$881,803	$908,258	$935,505
County #2	845,791	900,006	959,046	987,818	1,017,452
CalPERS	882,291	908,760	936,023	964,103	993,026

	2018/19	2019/20	2020/21	2021/22	2022/23
County #1	$963,570	$992,478	$1,022,252	$1,052,919	$1,084,507
County #2	1,047,976	1,079,415	1,111,797	1,145,151	1,179,506
CalPERS	1,022,817	1,053,502	1,085,107	1,117,660	1,151,190

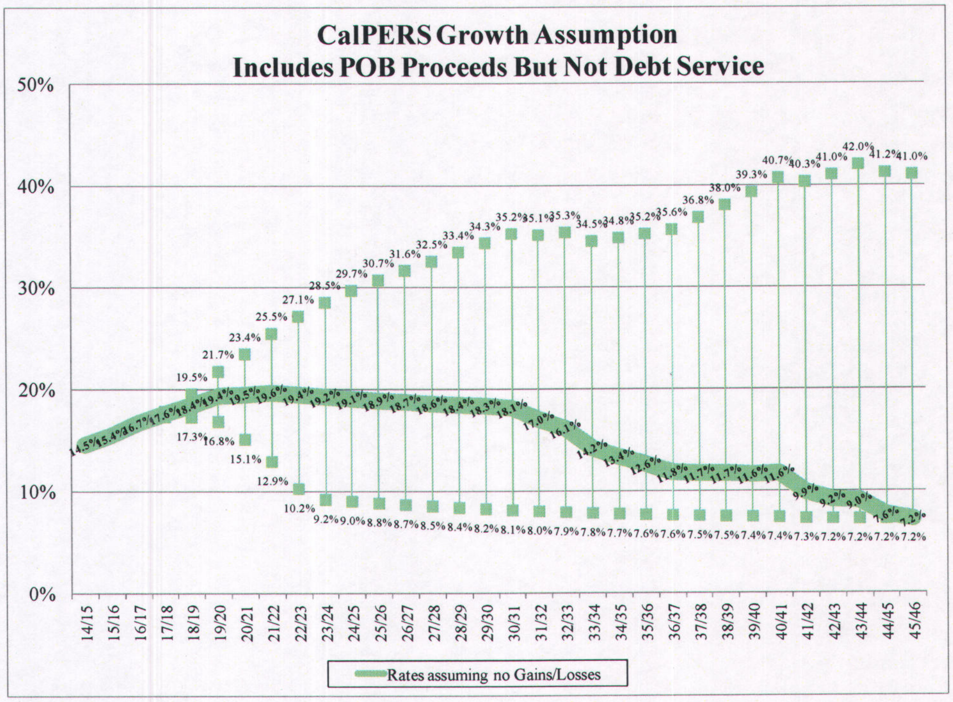
CONTRIBUTION PROJECTIONS - MISCELLANEOUS



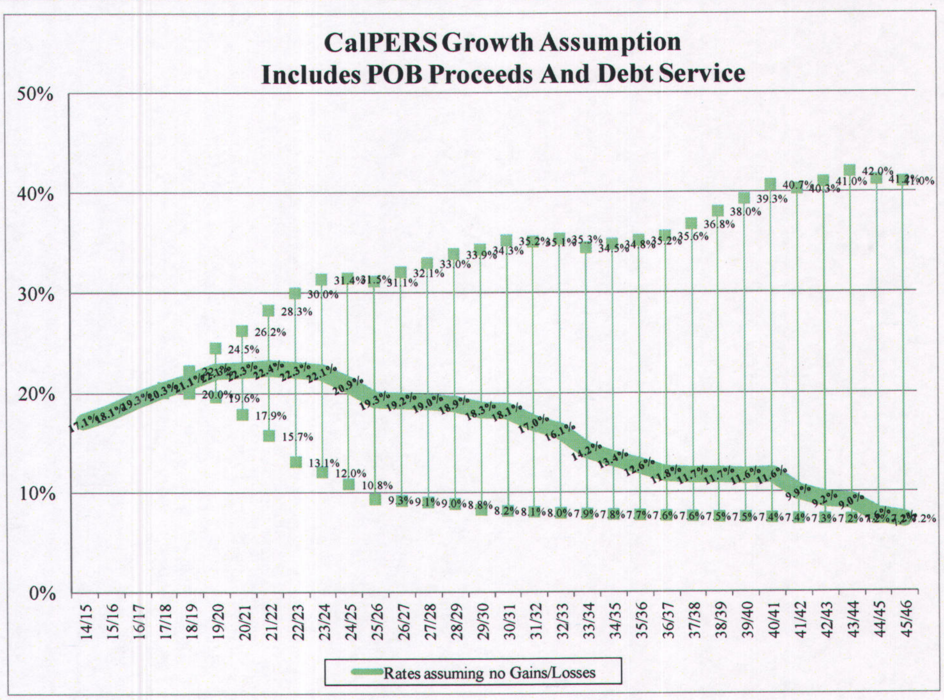
CONTRIBUTION PROJECTIONS - MISCELLANEOUS



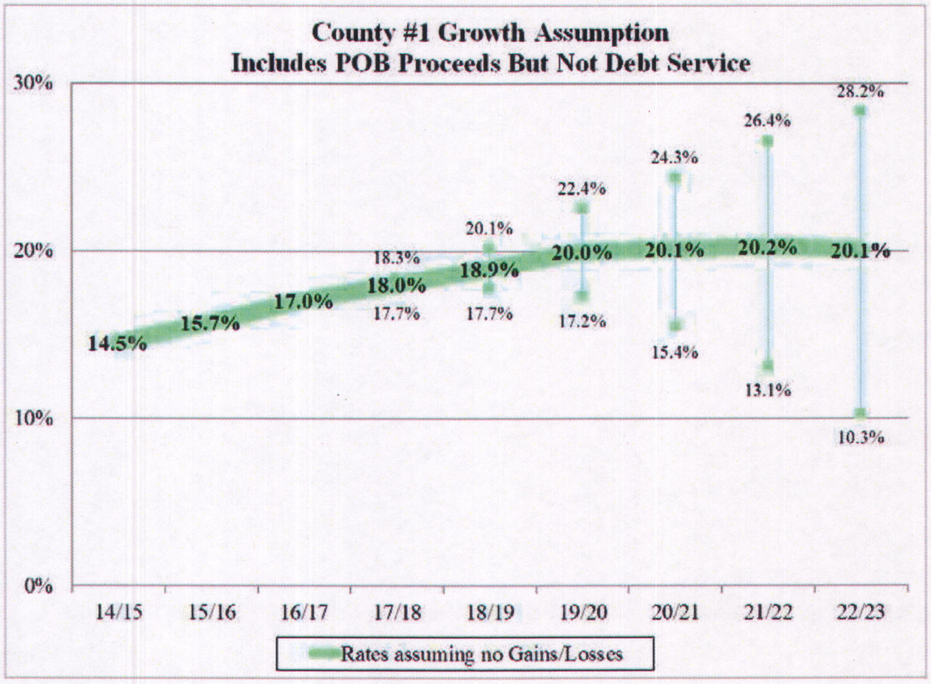
CONTRIBUTION PROJECTIONS - MISCELLANEOUS



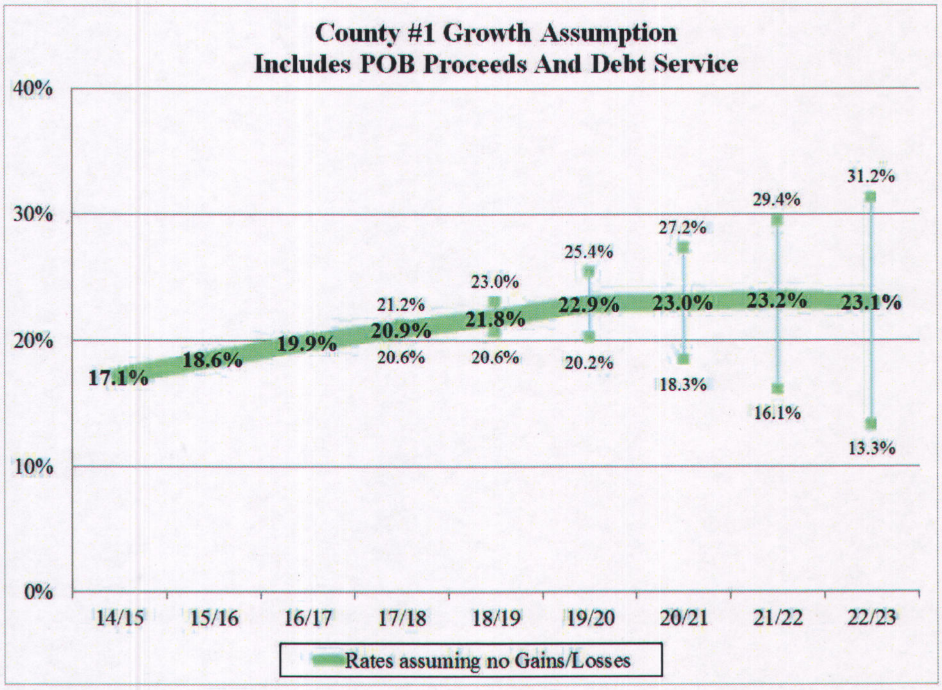
CONTRIBUTION PROJECTIONS - MISCELLANEOUS



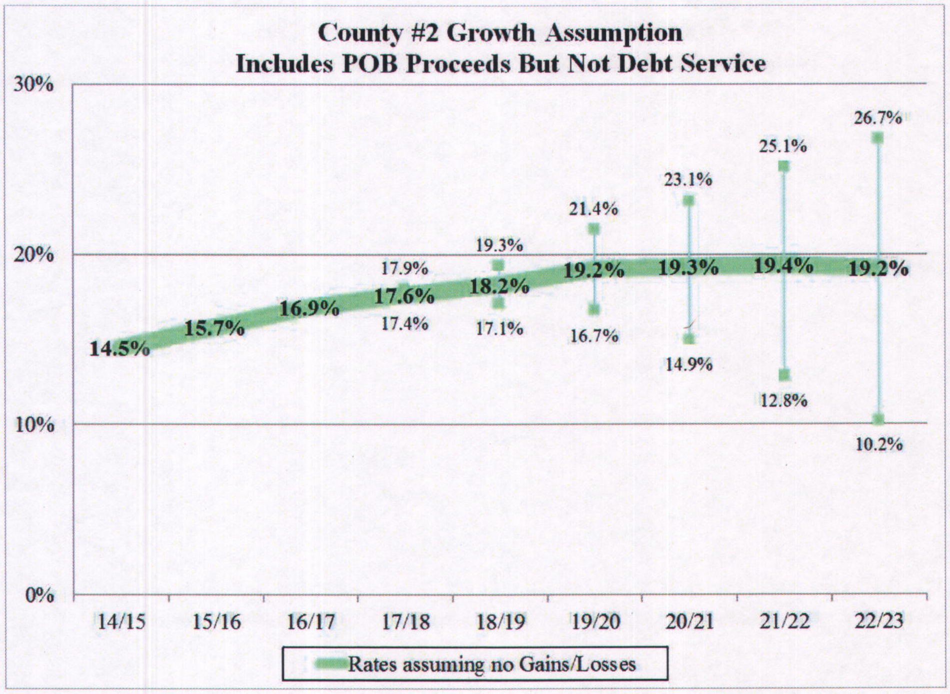
Contribution Projections - Miscellaneous



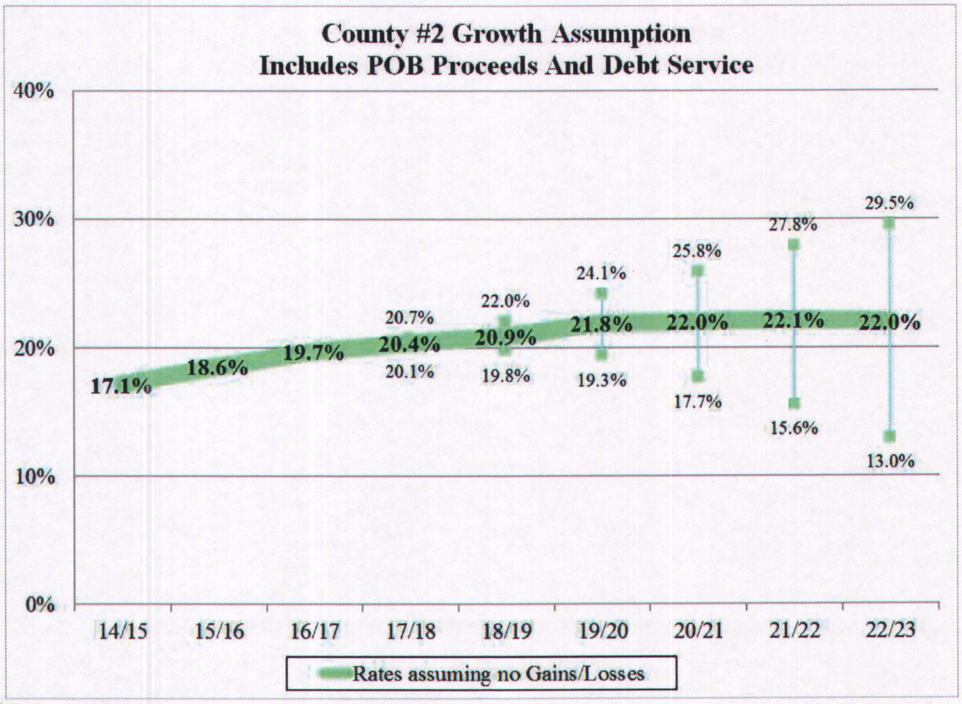
Contribution Projections - Miscellaneous



Contribution Projections - Miscellaneous



Contribution Projections - Miscellaneous

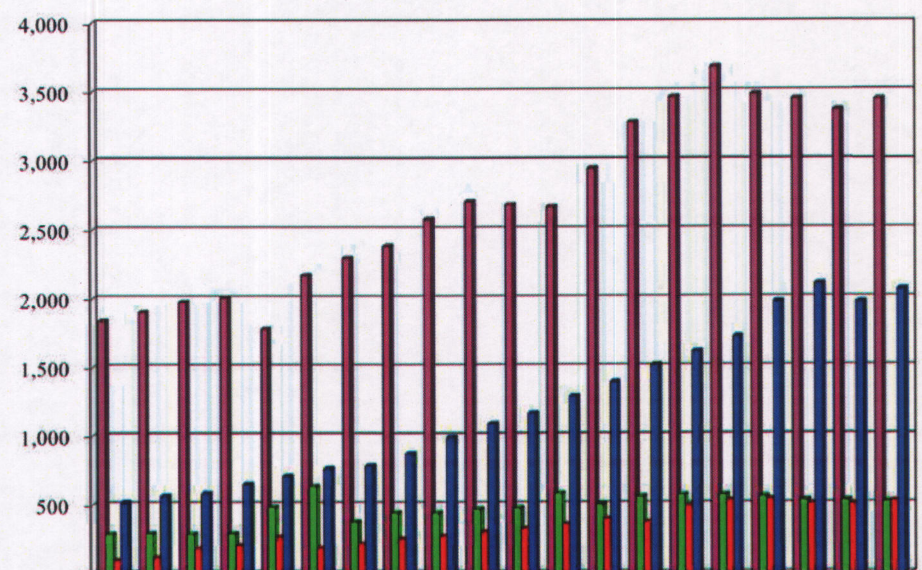


Summary of Demographic Information – Safety

	1994	2003	2012	2013
Actives				
■ Counts	1,839	2,708	3,374	3,448
■ Average				
• Age	38	39	39	39
• County Service	10	9	10	10
• PERSable Wages	$44,200	$54,500	$77,600	$78,700
■ Total PERSable Wages (millions)	88.8	162.4	286.0	296.5
Receiving Payments				
■ Counts				
• Service		540	1,277	1,346
• Disablity		442	538	545
• Beneficiaries		108	165	182
• Total	520	1,090	1,980	2,073
■ Average Annual County Provided Benefit[4]				
• Service		$28,100	$49,100	$50,600
• Disability		19,200	26,000	26,400
• Service Retirements in last 5 years		29,800	55,600	58,100

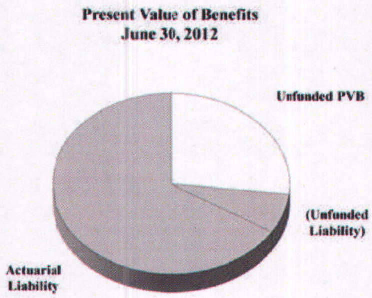
4 Average County provided pensions are based on County service & County benefit formula, and are not representative of benefits for long service employees.

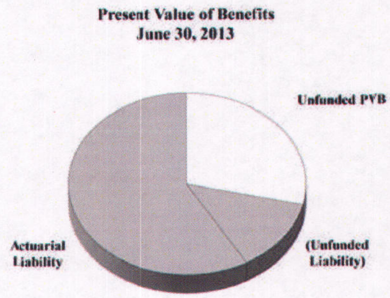
Members Included in Valuation – Safety



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Active	1,839	1,906	1,976	2,010	1,782	2,172	2,296	2,385	2,581	2,708	2,684	2,670	2,947	3,282	3,467	3,687	3,490	3,455	3,374	3,448
Transfers	289	294	289	292	485	636	378	444	444	470	479	584	502	563	574	577	564	536	534	524
Vested Terminations	100	119	185	205	269	189	217	254	274	306	332	360	399	380	496	537	544	513	508	530
Receiving Payments	520	567	586	651	711	767	785	872	993	1,090	1,168	1,292	1,398	1,521	1,619	1,728	1,982	2,112	1,980	2,073

PLAN FUNDED STATUS – SAFETY



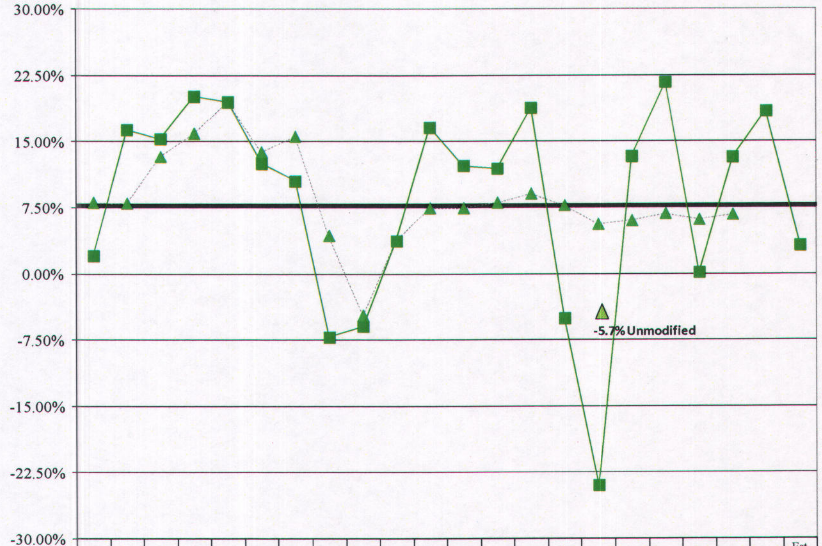


June 30, 2012		June 30, 2013
$ 2,086,400,000	**Actuarial Liability**	$2,285,600,000
1,860,600,000	**Actuarial Asset Value**	1,989,500,000
(225,800,000)	**(Unfunded Liability)**	(296,100,000)
June 30, 2012		**June 30, 2013**
$ 2,086,400,000	**Actuarial Liability**	$2,285,600,000
1,567,400,000	**Market Asset Value**	1,776,100,000
(519,000,000)	**(Unfunded Liability)**	(509,500,000)

PLAN FUNDED STATUS – SAFETY

- What happened between 6/30/12 and 6/30/13?
  - Market Value Asset Gain/(Loss) ≈ 95.3 million
  - Unfunded Liability (Increase)/Decrease ≈ (283.7) million
- Reasons for Unfunded Liability increase
  - Actuarial Asset gain/(loss):
    - ☐ Change from actuarial value to market value ≈ (213.4) million
    - ☐ Investment return ≈ (17.3) million
  - Actuarial gain/(loss): ≈ (60.2) million
    - ☐ Average Salary $77,600 → $78,700
    - ☐ Number of Actives 3,374 → 3,448
    - ☐ Number of Inactives 1,042 → 1,054
    - ☐ Number of Retirees 1,277 → 1,346
  - Other gain/(loss): ≈ 7.2 million
    - ☐ Contributions
    - ☐ Other (expected)

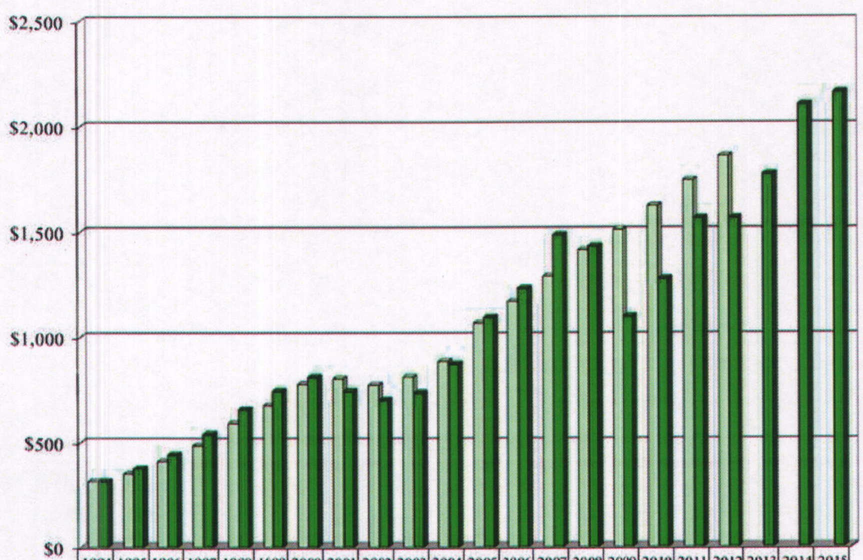
INVESTMENT RETURN – SAFETY



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Est. 2015
AVA	8.1%	8.0%	13.3%	15.9%	19.4%	13.8%	15.6%	4.3%	-4.7%	3.7%	7.4%	7.4%	8.1%	9.1%	7.8%	5.6%	6.0%	6.8%	6.1%	6.7%		
MVA	2.0%	16.3%	15.3%	20.1%	19.5%	12.5%	10.5%	-7.2%	-6.0%	3.7%	16.6%	12.3%	11.9%	18.8%	-5.1%	-24.0	13.3%	21.7%	0.1%	13.2%	18.4%	3.2%

Above assumes contributions, payments, etc. received evenly throughout year.
Estimated June 30, 2015 based on CalPERS actual return through 12/31/14 and assumed 7.5% annual return for the remaining 6 months.

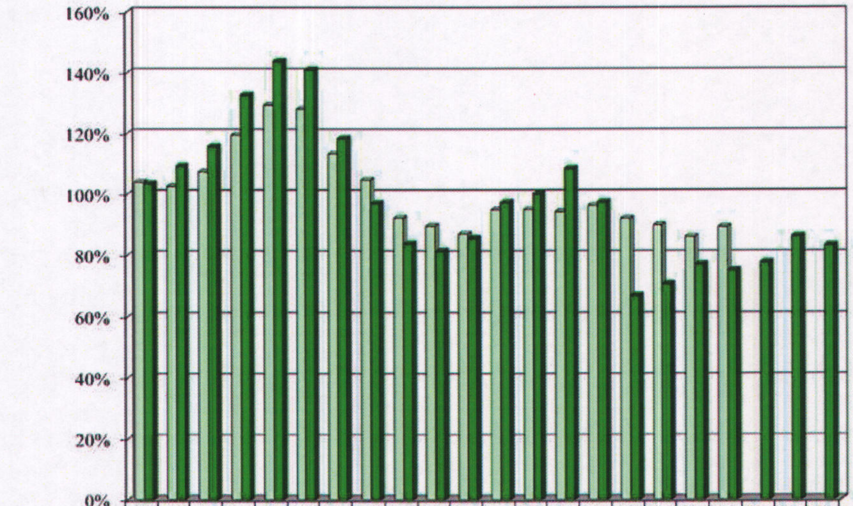
ASSET VALUES (MILLIONS) – SAFETY



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Actuarial	315	351	409	486	591	677	777	804	774	812	887	1,069	1,170	1,291	1,414	1,511	1,625	1,746	1,861			
Market	314	374	441	540	657	746	812	745	704	738	874	1,097	1,234	1,487	1,432	1,100	1,280	1,566	1,567	1,776	2,104	2,163

6/30/14 & 6/30/15 asset values estimated.
AVA is being set equal to MVA and a separate AVA will not be used in future years.

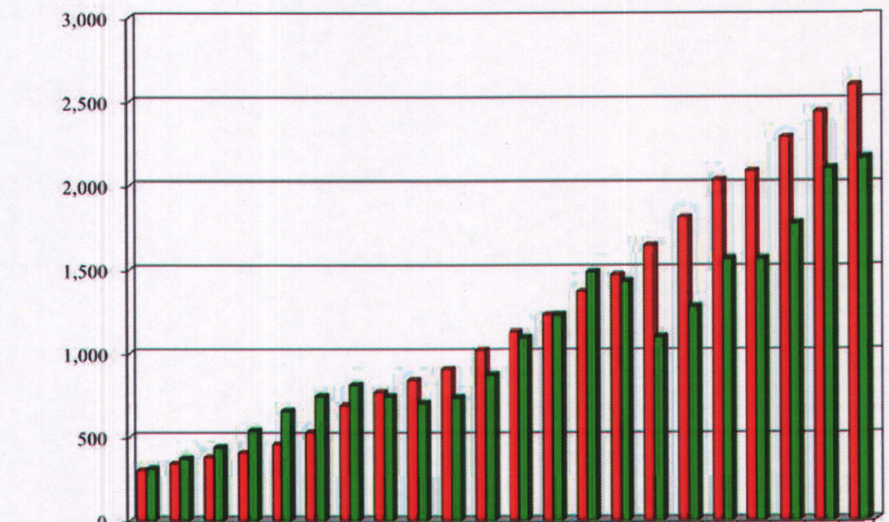
Funded Ratio – Safety



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Funded Ratio - AVA	104%	103%	107%	119%	129%	128%	113%	105%	92%	90%	87%	95%	95%	94%	96%	92%	90%	86%	89%			
Funded Ratio - MVA	104%	109%	116%	133%	144%	14[illegible]%	118%	97%	84%	81%	86%	97%	100%	109%	97%	67%	71%	77%	75%	78%	86%	83%

6/30/14 & 6/30/15 funded status estimated.
AVA is being set equal to MVA and a separate AVA will not be used in future years.

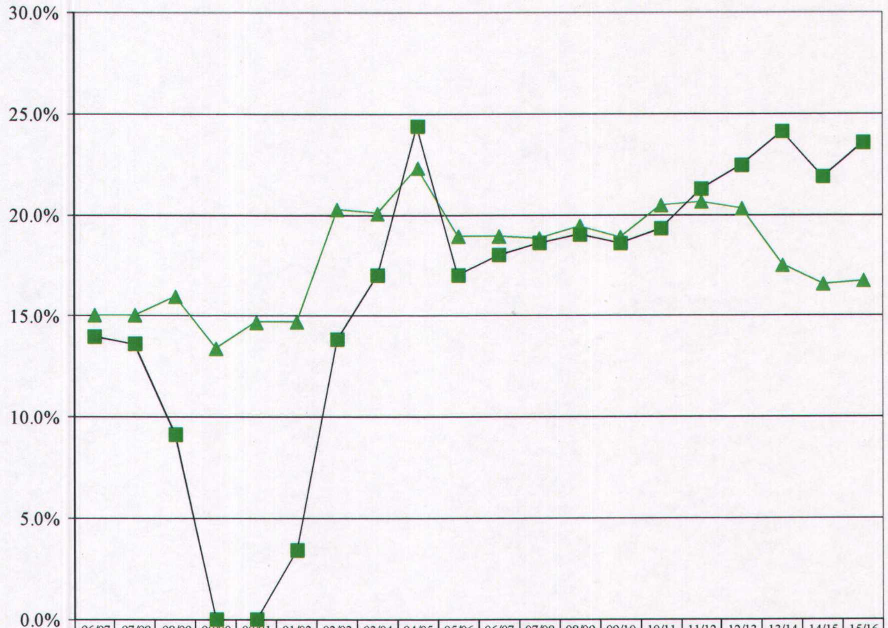
Funded Status (Millions) – Safety



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Actuarial Liability	303	342	381	407	457	529	686	768	840	907	1,021	1,127	1,232	1,370	1,469	1,643	1,809	2,032	2,086	2,286	2,439	2,598
Market Asset Value	314	374	441	540	657	746	812	745	704	738	874	1,097	1,234	1,487	1,432	1,100	1,280	1,566	1,567	1,776	2,104	2,163

6/30/14 & 6/30/15 funded status estimated

Contribution Rates – Safety



	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
ER Normal Cost	15.0%	15.0%	16.0%	13.4%	14.7%	14.7%	20.3%	20.1%	22.3%	18.9%	18.9%	18.8%	19.5%	18.9%	20.5%	20.6%	20.3%	17.5%	16.6%	16.7%
Total ER Cont Rate	14.0%	13.6%	9.1%	0.0%	0.0%	3.4%	13.8%	17.0%	24.4%	17.0%	18.0%	18.6%	19.0%	18.6%	19.3%	21.3%	22.5%	24.1%	21.9%	23.6%

Contribution Rates – Safety

	6/30/12 2014/2015	6/30/13 2015/2016
■ Total Normal Cost	25.6%	25.7%
■ Employee Normal Cost	9.0%	9.0%
■ Employer Normal Cost	16.6%	16.7%
■ Amortization Bases	5.3%	6.9%
■ Total Employer Contribution Rate	21.9%	23.6%
■ Amortization Period	Multiple	Multiple

■ What Happened from 6/30/12 to 6/30/13:

● 2014/15 Rate	21.9%
● Asset Method Change	1.5%
● (Gain)/Losses	0.2%
● 2015/16 Rate	23.6%

CONTRIBUTION PROJECTIONS – SAFETY

- Market Value Investment Return:
  - June 30, 2012 0.1%[5]
  - June 30, 2013 13.2%[2]
  - June 30, 2014 18.4%[2]

	Poor	Expected	Good
June 30, 2015[6]	**(0.4%)**	**3.2%**	**6.7%**
June 30, 2016 - 2020	**0.2% - 4.1%**	**7.5%**	**11.3% - 15.1%**

- No Other: Gains/Losses, Method/Assumption Changes, Benefit Improvements
- Excludes Employer Paid Member Contributions (EPMC)
- Includes CalPERS Board adopted assumption changes, first impact 2016/17
- Includes Tier 2 (2%@50) effective October 1, 2011
- New hire assumptions:
  - Assumes 50% of 2013 new hires will be Classic Tier 2 Members (2%@50) and 50% will be New Members with PEPRA benefits.
  - Assumes Classic Members will decrease from 50% to 0% of new hires over 10 years.

5 Based on CalPERS CAFR.
6 Based on CalPERS return of (0.5%) through 12/31/14 and assumed annual return for 6 months.

CONTRIBUTION PROJECTIONS – SAFETY

Payroll Growth Assumptions

	2014/15	2015/16	2016/17	2017/18	2018/19
County #1	3.00%	3.00%	3.00%	3.00%	3.00%
County #2	5.16%	5.33%	3.00%	3.00%	3.00%
CalPERS	3.00%	3.00%	3.00%	3.00%	3.00%

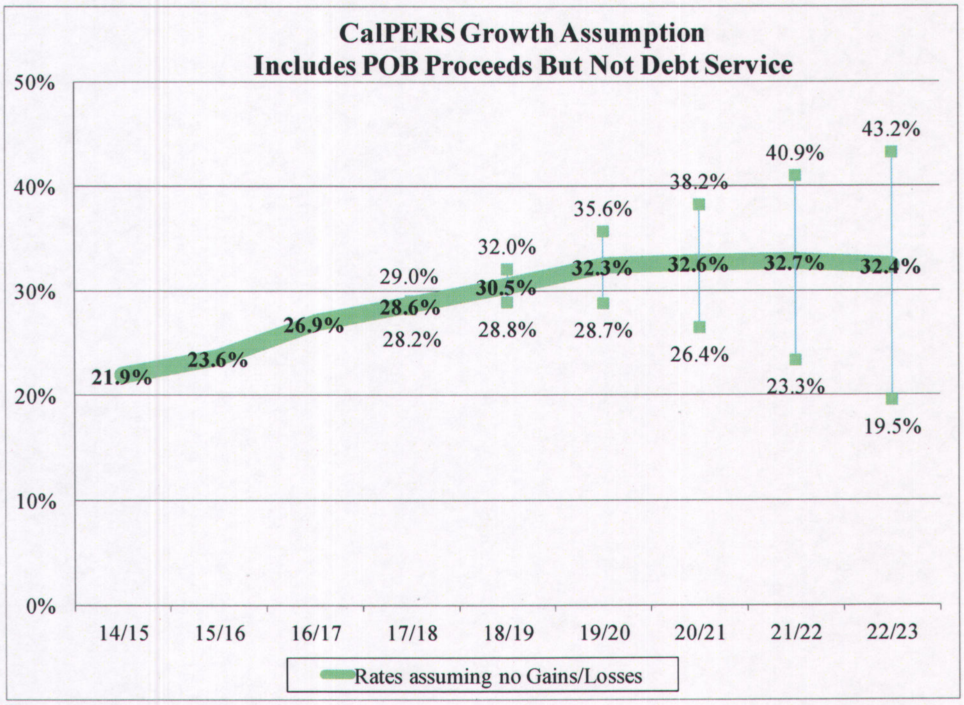
	2019/20	2020/21	2021/22	2022/23
County #1	3.00%	3.00%	3.00%	3.00%
County #2	3.00%	3.00%	3.00%	3.00%
CalPERS	3.00%	3.00%	3.00%	3.00%

Projected PERSable Wages ('000)

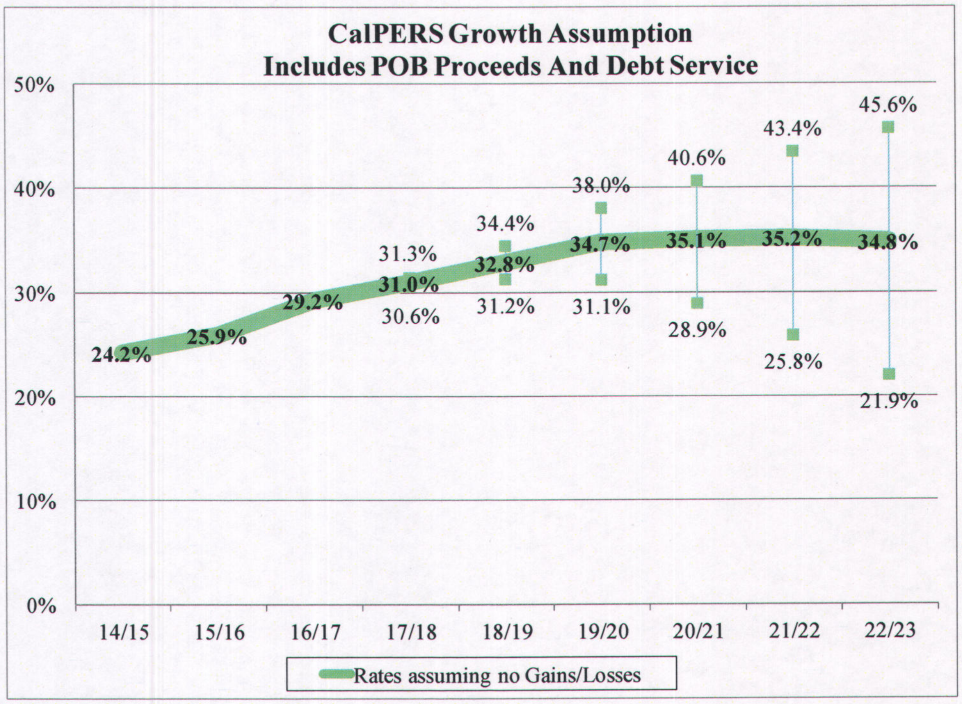
	2013/14	2014/15	2015/16	2016/17	2017/18
County #1	$269,311	$277,390	$285,712	$294,284	$303,112
County #2	282,724	297,313	313,160	322,555	332,231
CalPERS	279,502	287,887	296,524	305,419	314,582

	2018/19	2019/20	2020/21	2021/22	2022/23
County #1	$312,205	$321,572	$331,219	$341,155	$351,390
County #2	342,198	352,464	363,038	373,929	385,147
CalPERS	324,019	333,740	343,752	354,065	364,687

CONTRIBUTION PROJECTIONS – SAFETY



CONTRIBUTION PROJECTIONS – SAFETY



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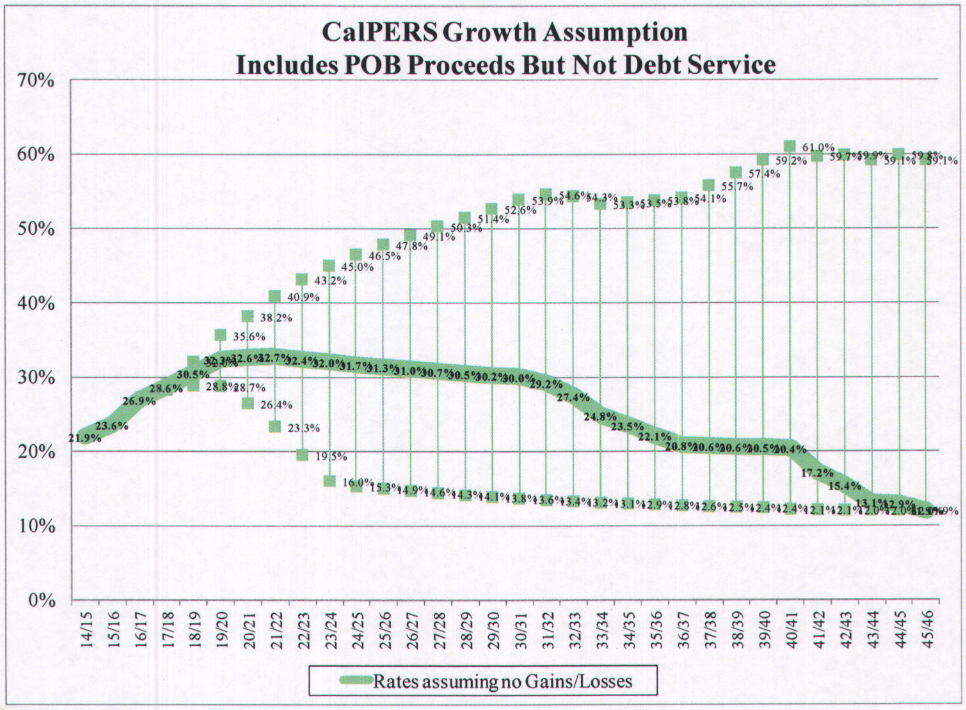

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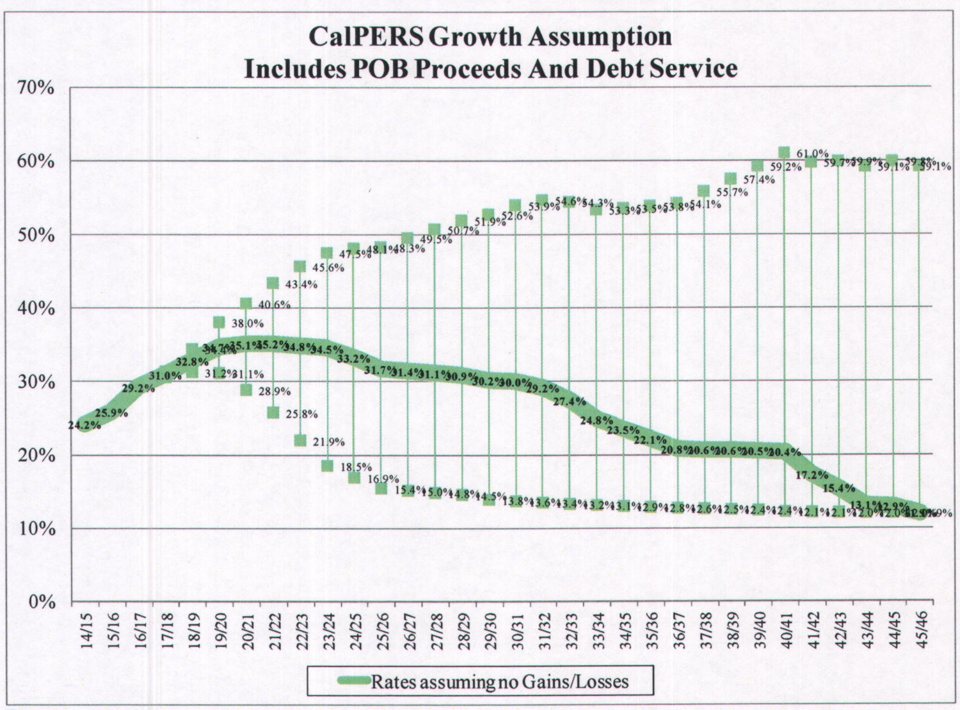
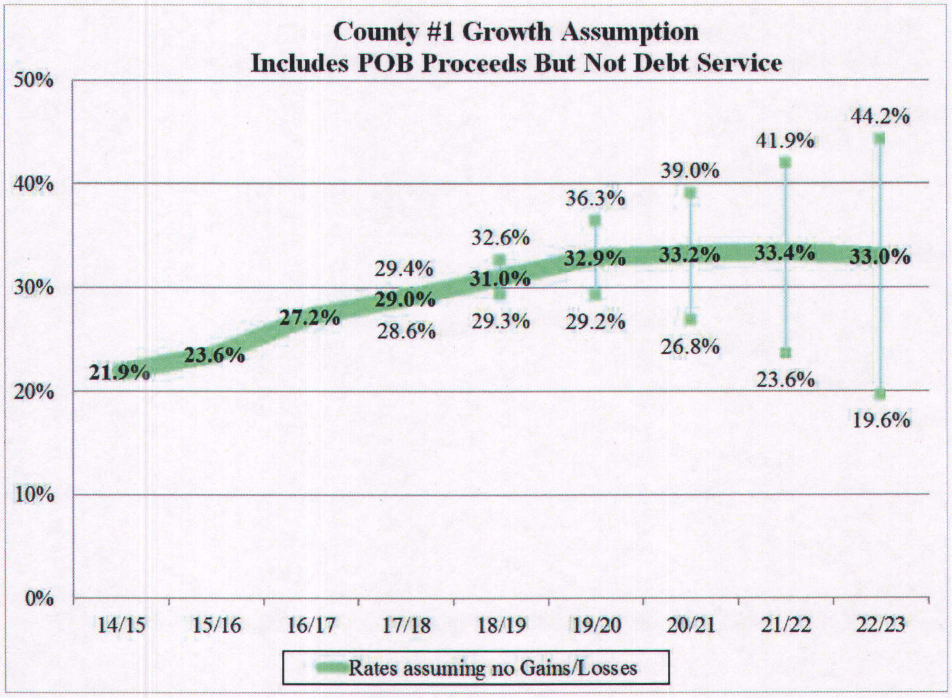


Contribution Projections – Safety



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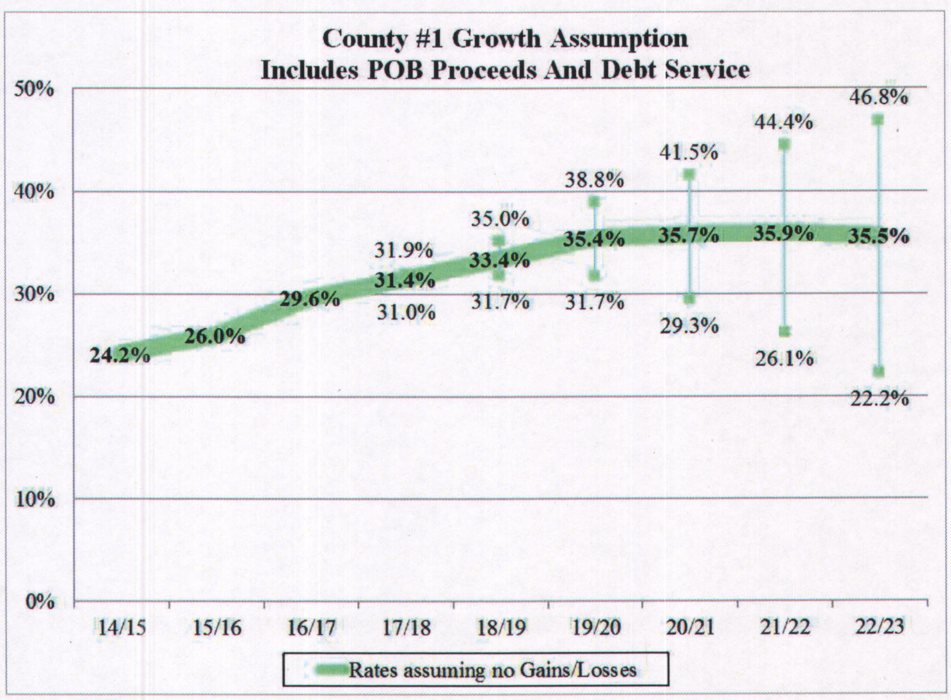
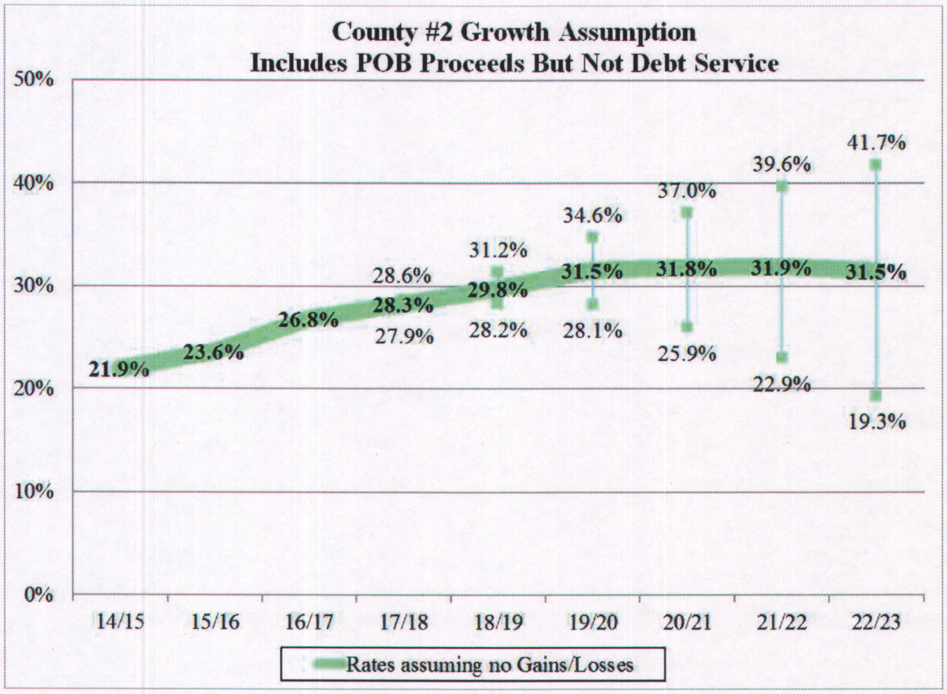
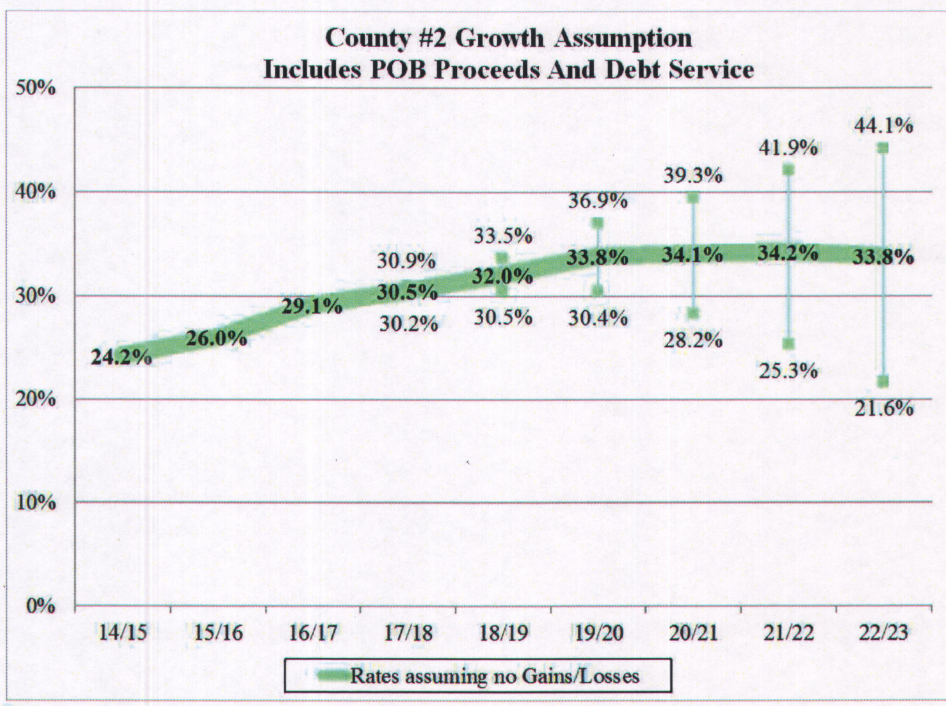


Contribution Projections – Safety



Contribution Projections – Safety



POB (MILLIONS) BOND PROCEEDS BALANCE

	Safety	Misc.	Total
■ POB @ **2/16/05**	**$ 85.7**	**$ 311.2**	**$ 396.9**
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.			
.			
.			
■ **Balance @ 6/30/14**	**88.8**	**322.4**	**411.2**
■ Earning 7/1/14 - 2/15/15[7]	0.6	2.1	2.7
■ Amortization payment through 2/15/15[8]	(3.4)	(12.3)	(15.7)
■ **Balance @ 2/15/14**	**86.0**	**312.2**	**398.2**

[7] Based on CalPERS actual return through 12/31/14 and assumed 7.5% annual return for the remaining 1.5 months.
[8] Based on a 29 year closed amortization

POB (MILLIONS) BOND PROCEEDS BALANCE

	Payments			
	Principal	Interest	Total	Balance
■ 2/17/05	n/a	n/a	n/a	$400.0
■ 8/15/05	n/a	$9.4	$9.4	400.0
.				
.				
.				
.				
.				
■ 2/15/2014	$12.3	8.4	20.7	334.5
■ 8/15/2014	n/a	8.2	8.2	334.5
■ 2/15/2015	14.0	8.2	22.2	320.5

POB (Millions)

- Net Estimated Gains through February 15, 2014:

A.	CalPERS Estimated Balance	$ 398.2
B.	Bond Proceeds Balance	320.5
C.	Cash Flow Savings/(Deficit) [Payments that would have been paid to CalPERS less POB debt service]	(9.7)
D.	Net [(A) – (B) + (C)]	68.0

- Net Estimated Gains through February 15, 2014:

E.	CalPERS Investment Earnings	$251.4
F.	POB Interest Payments	180.2
G.	Cost of Issuance	3.1
H.	Net [(E) – (F) – (G)]	68.0

- Above estimates based on market rate of return.

Net Funded Ratio (Millions)

		Safety			
		6/30/12	6/30/13	Proj. 6/30/14[9]	Proj. 6/30/15[10]
(1)	AAL	$ 2,086	$ 2,286	$ 2,439	$ 2,598
(2)	AVA/MVA[11]	1,861	1,776	2,104	2,163
(3)	UAAL [(1) - (2)]	225	510	335	435
(4)	Funding Ratio [(2)/(1)]	89.2%	77.7%	86.3%	83.3%
(5)	POB Balance	$ 77	$ 75	$ 72	$ 69
(6)	Net AVA/MVA [(2) - (5)]	1,784	1,701	2,032	2,094
(7)	Net Funding Ratio [(6)/(1)]	85.5%	74.4%	83.3%	80.6%

9 6/30/14 CalPERS published rate 18.4%.

10 Projected 6/30/15 MVA based on CalPERS actual return through 12/31/14 and assumed 7.5% annual return for the remaining 6 months.

11 AVA is being set equal to MVA at 6/30/13 and a separate AVA will not be used in future years

NET FUNDED RATIO (MILLIONS)

		Miscellaneous			
		6/30/12	6/30/13	Proj. 6/30/14[12]	Proj. 6/30/15[13]
(1)	AAL	$ 4,709	$ 5,009	$ 5,358	$ 5,720
(2)	AVA/MVA[14]	4,172	3,974	4,721	4,870
(3)	UAAL [(1) - (2)]	537	1,035	637	850
(4)	Funding Ratio [(2)/(1)]	88.6%	79.3%	88.1%	85.1%
(5)	POB Balance	$ 280	$ 272	$ 262	$ 251
(6)	Net AVA/MVA [(2) - (5)]	3,892	3,702	4,459	4,619
(7)	Net Funding Ratio [(6)/(1)]	82.6%	73.9%	83.2%	80.7%

12 6/30/14 CalPERS published rate 18.4%.

13 Projected 6/30/15 MVA based on CalPERS actual return through 12/31/14 and assumed 7.5% annual return for the remaining 6 months.

14 AVA is being set equal to MVA at 6/30/13 and a separate AVA will not be used in future years

NET FUNDED RATIO (MILLIONS)

		Total			
		6/30/12	6/30/13	Proj. 6/30/14[15]	Proj. 6/30/15[16]
(1)	AAL	$ 6,795	$ 7,295	$ 7,797	$ 8,318
(2)	AVA/MVA[17]	6,033	5,750	6,825	7,033
(3)	UAAL [(1) - (2)]	762	1,545	972	1,285
(4)	Funding Ratio [(2)/(1)]	88.8%	78.8%	87.5%	84.6%
(5)	POB Balance	$ 358	$ 347	$ 335	$ 320
(6)	Net AVA/MVA [(2) - (5)]	5,675	5,403	6,490	6,713
(7)	Net Funding Ratio [(6)/(1)]	83.5%	74.1%	83.2%	80.7%

15 6/30/14 CalPERS published rate 18.4%.

16 Projected 6/30/15 MVA based on CalPERS actual return through 12/31/14 and assumed 7.5% annual return for the remaining 6 months.

17 AVA is being set equal to MVA at 6/30/13 and a separate AVA will not be used in future years

GASB 68

- **Pension Accounting:**
  - GASB 68, Accounting for Employers, approved June 25, 2012
  - Replaces GASB 27
  - Effective 2014/15
- **Major Issues:**
  - Unfunded liability on balance sheet
  - Expense calculation disconnected from contribution calculation
  - Discount rate is
    - Expected return on plan assets when assets sufficient to pay benefits
    - Municipal bond rate when assets not sufficient to pay benefits

    Likely caused CalPERS to modify assets smoothing and/or amortization policy to avoid using discount rate lower than expected return (7.5%).
- **Estimated June 30, 2014 Unfunded Actuarial Liability** (in Millions)

Plan	Total Pension Liability (AAL)	Fiduciary Net Position (MVA)	Net Pension Liability (UAL)
Safety	$2,439	$2,104	$335
Miscellaneous	5,358	4,721	637
Total Net Pension Liability			**$972**

GASB 68

- CalPERS:
  - Actuaries have approval from CalPERS Board to make necessary system changes & have begun work.
  - Intend to provide June 30, 2015 GASB 68 information in spring 2015.
  - Expect to provide only upon request.
  - Will charge small fee, set in early 2015.

PEPRA COST SHARING

- Target of 50% of total normal cost for everyone
- *New members* must pay greater of 50% of total normal cost or bargained amount if higher
- Employer cannot pay any part of *new member* required employee contributions
- Employer may impose current employees pay 50% of total normal cost (limited to certain amounts) if not agreed through collective bargaining by 1/1/18
- Miscellaneous Plan:

	Current Members		New Members
	3% @ 60	2%@60	2%@62
Employer Normal Cost	10.4%	6.8%	6.4%
Member Normal Cost	7.7%	7.0%	6.5%
Total Normal Cost	18.1%	13.8%	12.9%
50% Target	9.05%	6.9%	6.45%

PEPRA COST SHARING

- Safety Plan:

	Current Members		New Members
	3% @ 50	2%@50	2.7%@57
Employer Normal Cost	16.7%	13.2%	10.65%
Member Normal Cost	9.0%	9.0%	10.75%
Total Normal Cost	25.7%	22.2%	21.40%
50% Target	12.85%	11.1%	10.70%

Paying Down the Unfunded Liability

- Pension Obligation Bond (POB)
  - Interest arbitrage between expected CalPERS earnings and rate paid on POB
  - Not guaranteed
- Borrow from General Fund
  - Pay GF back like a loan
  - Payments come from all funds
- Request shorter amortization period of CalPERS
  - Higher short term payments
  - Less interest and lower long term payments
- One time payments
  - Council resolution to use portion of one time money

Paying Down the Unfunded Liability

- Internal Service Fund vs. Irrevocable Supplemental (§115) Pension Trust
  - Internal Service Fund
    - Restricted investments
      - Likely low (0.5% - 1.0%) investment returns
      - Short term/high quality
      - Designed for preservation of principal
    - Assets could be used by Council for other purposes
  - Irrevocable Supplemental (§115) Pension Trust
    - One Trust established so far
    - PARS & PFM
    - Investments significantly less restricted
      - Designed for long term returns
      - Likely much higher (5% - 7%) investment return
    - Assets could not be used by Council for other purposes
    - Can only be used to pay
      - Reimburse County for CalPERS contributions
      - Make payments directly to CalPERS

CalPERS
California Public Employees' Retirement System
Actuarial Office
P.O. Box 942701
Sacramento, CA 94229-2701
TTY: (916) 795-3240
(888) 225-7377 phone • (916) 795-2744 fax
www.calpers.ca.gov

October 2014

MISCELLANEOUS PLAN OF THE COUNTY OF RIVERSIDE (CalPERS ID: 5982690295)
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. 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 the report with you after October 31, 2014.

Future Contribution Rates

The exhibit below displays the Minimum Employer Contribution Rate for fiscal year 2015-16 and a projected contribution rate for 2016-17, before any cost sharing. The projected rate for 2016-17 is based on the most recent information available, including an estimate of the investment return for fiscal year 2013-14, namely 18 percent, and the impact of the actuarial assumptions adopted by the CalPERS Board in February 2014 that will impact employer rates for the first time in fiscal year 2016-17. For a projection of employer rates beyond 2016-17, please refer to the "Projected Rates" in the "Risk Analysis" section, which includes rate projections through 2020-21 under a variety of investment return scenarios. Please disregard any projections that we may have provided you in the past.

Fiscal Year	Employer Contribution Rate
2015-16	15.429%
2016-17	17.0% (projected)

Member contributions other than cost sharing (whether paid by the employer or the employee) are in addition to the above rates. **The employer contribution rates in this report do not reflect any cost sharing arrangement 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 impact on your contribution rate. Even for the largest plans, such gains and losses often cause a change in the employer's contribution rate of one or two percent of payroll and may be even larger in some less common instances. These gains and losses cannot be predicted in advance so the projected employer contribution rates are just estimates. Your actual rate for 2016-17 will be provided in next year's report.

Changes since the Prior Year's Valuation

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.

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 no longer use an actuarial value of assets and 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.

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, "Actuarial Methods and Assumptions." The effect of the changes on your rate is included in the "Reconciliation of Required Employer Contributions."

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 results, we ask that you wait until after October 31 to contact us with actuarial questions. If you have other questions, you may call the Customer Contact Center at (888)-CalPERS or (**888-225-7377**).

Sincerely,

Alan Milligan

ALAN MILLIGAN
Chief Actuary

ACTUARIAL VALUATION
as of June 30, 2013

for the MISCELLANEOUS PLAN of the COUNTY OF RIVERSIDE
(CalPERS ID: 5982690295)

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

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TABLE OF CONTENTS

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ACTUARIAL CERTIFICATION

To the best of our knowledge, this report is complete and accurate and contains sufficient information to disclose, fully and fairly, the funded condition of the MISCELLANEOUS PLAN OF THE COUNTY OF RIVERSIDE. 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 plan with CalPERS as of the date this report was produced. It is our opinion that 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 plan, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

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

Todd Tauzer

TODD TAUZER, ASA, CERA, MAAA
Associate Pension Actuary, CalPERS

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HIGHLIGHTS AND EXECUTIVE SUMMARY

- INTRODUCTION
- PURPOSE OF THE REPORT
- REQUIRED EMPLOYER CONTRIBUTION
- PLAN'S FUNDED STATUS
- COST
- CHANGES SINCE THE PRIOR YEAR'S VALUATION
- SUBSEQUENT EVENTS

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Introduction

This report presents the results of the June 30, 2013 actuarial valuation of the MISCELLANEOUS PLAN OF THE COUNTY OF RIVERSIDE of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the fiscal year 2015-16 required employer contribution rates.

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

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 the June 30, 2013 valuations, CalPERS will no longer use an actuarial value of assets and will employ an amortization and smoothing policy that will spread rate increases or decreases over a 5-year period, and will amortize all experience gains and losses over a fixed 30-year period. The new amortization and smoothing policy is used in this valuation.

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.

Purpose of the Report

The actuarial valuation was prepared by the CalPERS Actuarial Office using data as of June 30, 2013. The purpose of the report is to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2013;
- Determine the required employer contribution rate 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 to
- 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 Single Employer Defined Benefit Pension Plan.

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 19.

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.

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.

Required Employer Contribution

		Fiscal Year 2014-15		Fiscal Year 2015-16
Actuarially Determined Employer Contributions				
1. Contribution in Projected Dollars				
a) Total Normal Cost	$	165,493,790	$	169,204,807
b) Employee Contribution[1]		70,979,443		72,083,101
c) Employer Normal Cost [(1a) – (1b)]		94,514,347		97,121,706
d) Unfunded Liability Contribution		38,256,546		47,296,668
e) Required Employer Contribution [(1c) + (1d)]	$	132,770,893	$	144,418,374
Projected Annual Payroll for Contribution Year	$	913,976,858	$	936,022,607
2. Contribution as a Percentage of Payroll				
a) Total Normal Cost		18.107%		18.077%
b) Employee Contribution[1]		7.766%		7.701%
c) Employer Normal Cost [(2a) – (2b)]		10.341%		10.376%
d) Unfunded Liability Rate		4.186%		5.053%
e) Required Employer Rate [(2c) + (2d)]		14.527%		15.429%
Minimum Employer Contribution Rate[2]		**14.527%**		**15.429%**
Annual Lump Sum Prepayment Option[3]	$	128,055,620	$	139,289,449

[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 normal cost. A development of PEPRA member contribution rates can be found in Appendix D. Employee cost sharing is not shown in this report.

[2]The Minimum Employer Contribution Rate under PEPRA is the greater of the required employer rate or the employer normal cost.

[3]Payment must be received by CalPERS before the first payroll reported to CalPERS of the new fiscal year and after June 30. If there is contractual cost sharing or other change, this amount will change.

Plan's Funded Status

		June 30, 2012		June 30, 2013
1. Present Value of Projected Benefits	$	5,914,245,070	$	6,229,128,605
2. Entry Age Normal Accrued Liability		4,708,881,750		5,008,806,968
3. Market Value of Assets (MVA)	$	3,520,189,846	$	3,974,442,195
4. Unfunded Liability [(2) – (3)]	$	1,188,691,904	$	1,034,364,773
5. Funded Ratio [(3) / (2)]		74.8%		79.3%
Superfunded Status		No		No

Cost

Actuarial Cost Estimates in General

What will this pension plan cost? Unfortunately, there is no simple answer. There are two major reasons for the complexity of the answer. First, actuarial calculations, including the ones 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 to reflect 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 for the past twenty year period ending June 30, 2013, returns for each fiscal year ranged from negative -24 percent to +21.7 percent.

Second, the very nature of actuarial funding produces the answer to the question of plan cost as the sum of two separate pieces.

- The Normal Cost (i.e., the annual cost associated with one year of service accrual) expressed as a percentage of total active payroll.
- The Past Service Cost or Accrued Liability (i.e., the current value of the benefit for all credited past service of current members) which is expressed as a lump sum dollar amount.

The cost is the sum of a percent of future pay and a lump sum dollar amount (the sum of an apple and an orange if you will). To communicate the total cost, either the Normal Cost (i.e., future percent of payroll) must be converted to a lump sum dollar amount (in which case the total cost is the present value of benefits), or the Past Service Cost (i.e., the lump sum) must be converted to a percent of payroll (in which case the total cost is expressed as the employer's rate, part of which is permanent and part temporary). Converting the Past Service Cost lump sum to a percent of payroll requires a specific amortization period, and the employer rate will vary depending on the amortization period chosen.

Changes since the Prior Year's Valuation

Benefits

The standard actuarial practice at CalPERS is to recognize mandated legislative benefit changes in the first annual valuation following the effective date of the legislation. Voluntary benefit changes by plan amendment are generally included in the first valuation that is prepared after the amendment becomes effective even if the valuation date is prior to the effective date of the amendment.

This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B for a summary of the plan provisions used in this valuation. The effect of any mandated benefit changes or plan amendments on the unfunded liability is shown in the "(Gain)/Loss Analysis" and the effect on your employer contribution rate is shown in the "Reconciliation of Required Employer Contributions." It should be noted that no change in liability or rate is shown for any plan changes, which were already included in 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 smoothing policies. Beginning with the June 30, 2013 valuations that set the 2015-16 rates, CalPERS will no longer use an actuarial value of assets and will employ an amortization and rate smoothing policy that will pay for all gains and losses over a fixed 30-year period with the increases or decreases in the rate phased in over a 5-year period.

A change in the calculation of termination with vested benefits liability for active members 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 slightly higher liability and a modest 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, requiring that 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 normal cost rate. Beginning July 1, 2013, this means that some plans with surplus will be paying more than they otherwise would. For more information on 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, 2014 the CalPERS Board of Administration adopted relatively modest changes to the current asset allocation that will reduce the expected volatility of returns (see Risk Analysis section of report). 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 impact of assumption changes are included in the "Expected Rate Increases" subsection of the "Risk Analysis" section.

ASSETS

- RECONCILIATION OF THE MARKET VALUE OF ASSETS
- ASSET ALLOCATION
- CALPERS HISTORY OF INVESTMENT RETURNS

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Reconciliation of the Market Value of Assets

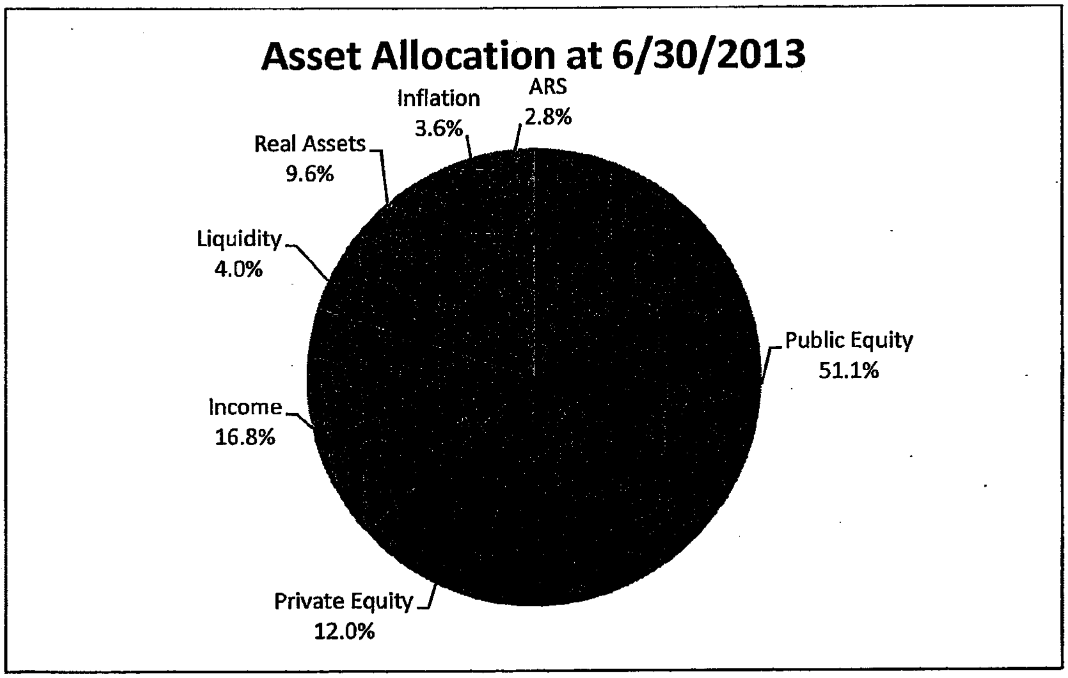
1.	Market Value of Assets as of 6/30/12 Including Receivables	$	3,520,189,846
2.	Receivables for Service Buybacks as of 6/30/12		14,770,270
3.	Market Value of Assets as of 6/30/12		3,505,419,576
4.	Employer Contributions		116,521,265
5.	Employee Contributions		75,721,101
6.	Benefit Payments to Retirees and Beneficiaries		(182,690,350)
7.	Refunds		(9,173,753)
8.	Lump Sum Payments		0
9.	Transfers and Miscellaneous Adjustments		48,254
10.	Investment Return		451,825,137
11.	Market Value of Assets as of 6/30/13	$	3,957,671,230
12.	Receivables for Service Buybacks as of 6/30/13		16,770,965
13.	Market Value of Assets as of 6/30/13 Including Receivables	$	3,974,442,195

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 is has an expected long term blended rate of return of 7.5 percent.

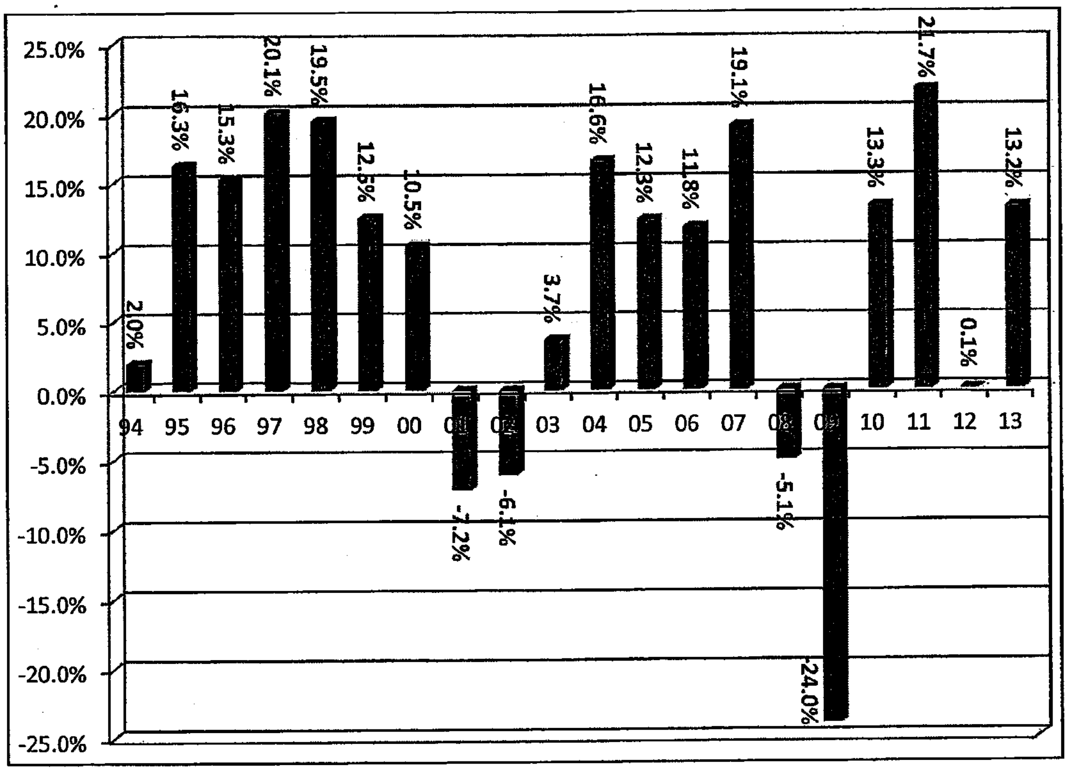
The asset allocation and market value of assets shown below reflect the values of the Public Employees Retirement Fund (PERF) in its entirety as of June 30, 2013. The assets for COUNTY OF RIVERSIDE MISCELLANEOUS PLAN are part of the Public Employees Retirement Fund (PERF) and are invested accordingly.

(A) Asset Class	(B) Market Value ($ Billion)	(C) Policy Target Allocation
1) Global Equity	133.4	47.0%
2) Private Equity	31.4	12.0%
3) Global Fixed Income	43.9	19.0%
4) Liquidity	10.5	2.0%
5) Real Assets	25.2	14.0%
6) Inflation Sensitive Assets	9.4	6.0%
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 ACCRUED AND UNFUNDED LIABILITIES
- (GAIN) / LOSS ANALYSIS 06/30/12 - 06/30/13
- SCHEDULE OF AMORTIZATION BASES
- ALTERNATE AMORTIZATION SCHEDULES
- RECONCILIATION OF REQUIRED EMPLOYER CONTRIBUTIONS
- EMPLOYER CONTRIBUTION RATE HISTORY
- FUNDING HISTORY

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Development of Accrued and Unfunded Liabilities

1.	Present Value of Projected Benefits		
	a) Active Members	$	3,630,284,201
	b) Transferred Members		226,155,790
	c) Terminated Members		129,361,497
	d) Members and Beneficiaries Receiving Payments		2,243,327,117
	e) Total	$	6,229,128,605
2.	Present Value of Future Employer Normal Costs	$	676,184,063
3.	Present Value of Future Employee Contributions	$	544,137,574
4.	Entry Age Normal Accrued Liability		
	a) Active Members [(1a) - (2) - (3)]	$	2,409,962,564
	b) Transferred Members (1b)		226,155,790
	c) Terminated Members (1c)		129,361,497
	d) Members and Beneficiaries Receiving Payments (1d)		2,243,327,117
	e) Total	$	5,008,806,968
5.	Market Value of Assets (MVA)	$	3,974,442,195
6.	Unfunded Liability [(4e) - (5)]	$	1,034,364,773
7.	Funded Ratio [(5) / (4e)]		79.3%

(Gain) /Loss Analysis 6/30/12 – 6/30/13

To calculate the cost requirements of the plan, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is compared to the expected experience based on the actuarial assumptions. This results in actuarial gains or losses, as shown below.

A	**Total (Gain)/Loss for the Year**			
	1.	Unfunded Accrued Liability (UAL) as of 6/30/12	$	536,480,531
	2.	Expected Payment on the UAL during 2012/2013		27,111,746
	3.	Interest through 6/30/13 [.075 x (A1) - ((1.075)^{½} - 1) x (A2)]		39,237,729
	4.	Expected UAL before all other changes [(A1) - (A2) + (A3)]		548,606,514
	5.	Change due to plan changes		0
	6.	Change due to assumption change		0
	7.	Expected UAL after all other changes [(A4) + (A5) + (A6)]		548,606,514
	8.	Actual UAL as of 6/30/13		1,034,364,773
	9.	Total (Gain)/Loss for 2012/2013 [(A8) - (A7)]	$	485,758,259
B	**Contribution (Gain)/Loss for the Year**			
	1.	Expected Contribution (Employer and Employee)	$	183,157,206
	2.	Interest on Expected Contributions		6,744,227
	3.	Actual Contributions		192,242,366
	4.	Interest on Actual Contributions		7,078,761
	5.	Expected Contributions with Interest [(B1) + (B2)]		189,901,433
	6.	Actual Contributions with Interest [(B3) + (B4)]		199,321,127
	7.	Contribution (Gain)/Loss [(B5) - (B6)]	$	(9,419,694)
C	**Asset (Gain)/Loss for the Year**			
	1.	Actuarial Value of Assets as of 6/30/12 Including Receivables	$	4,172,401,219
	2.	Receivables as of 6/30/12		14,770,270
	3.	Actuarial Value of Assets as of 6/30/12		4,157,630,949
	4.	Contributions Received		192,242,366
	5.	Benefits and Refunds Paid		(191,864,103)
	6.	Transfers and miscellaneous adjustments		48,254
	7.	Expected Int. [.075 x (C3) + ((1.075)^{½} - 1) x ((C4) + (C5) + (C6))]		311,838,026
	8.	Expected Assets as of 6/30/13 [(C3) + (C4) + (C5) + (C6) + (C7)]		4,469,895,492
	9.	Receivables as of 6/30/13		16,770,965
	10.	Expected Assets Including Receivables		4,486,666,457
	11.	Market Value of Assets as of 6/30/13		3,974,442,195
	12.	Asset (Gain)/Loss [(C10) - (C11)]	$	512,224,262
D	**Liability (Gain)/Loss for the Year**			
	1.	Total (Gain)/Loss (A9)	$	485,758,259
	2.	Contribution (Gain)/Loss (B7)		(9,419,694)
	3.	Asset (Gain)/Loss (C12)		512,224,262
	4.	Liability (Gain)/Loss [(D1) - (D2) - (D3)]	$	(17,046,309)

Schedule of 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 rate 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 rates 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 are determined by multiplying the rate by the expected payroll for the applicable fiscal year, based on payroll as of the valuation date.

							Amounts for Fiscal 2015-16		
Reason for Base	Date Established	Amortization Period	Balance 6/30/13	Expected Payment 2013-14	Balance 6/30/14	Expected Payment 2014-15	Balance 6/30/15	Scheduled Payment for 2015-16	Payment as Percentage of Payroll
FS 30-YEAR AMORTIZATION	06/30/08	25	$(10,046,584)	$(636,735)	$(10,139,897)	$(655,837)	$(10,220,403)	$(675,512)	(0.072%)
GOLDEN HANDSHAKE	06/30/09	16	$33,497,586	$2,708,104	$33,202,082	$2,789,348	$32,800,182	$2,873,028	0.307%
ASSUMPTION CHANGE	06/30/09	16	$85,397,151	$6,903,912	$84,643,809	$7,111,030	$83,619,222	$7,324,361	0.782%
SPECIAL (GAIN)/LOSS	06/30/09	26	$114,028,097	$7,090,290	$115,228,835	$7,302,999	$116,299,087	$7,522,089	0.804%
GOLDEN HANDSHAKE	06/30/10	17	$1,176,125	$91,769	$1,169,186	$94,523	$1,158,872	$97,358	0.010%
SPECIAL (GAIN)/LOSS	06/30/10	27	$79,882,801	$4,878,767	$80,815,598	$5,025,130	$81,666,602	$5,175,884	0.553%
GOLDEN HANDSHAKE	06/30/11	18	$32,658,038	$2,465,859	$32,550,734	$2,539,835	$32,358,682	$2,616,030	0.279%
ASSUMPTION CHANGE	06/30/11	18	$102,223,303	$7,718,415	$101,887,428	$7,949,967	$101,286,284	$8,188,466	0.875%
SPECIAL (GAIN)/LOSS	06/30/11	28	$(43,923,495)	$(2,637,629)	$(44,483,005)	$(2,716,758)	$(45,002,436)	$(2,798,261)	(0.299%)
PAYMENT (GAIN)/LOSS	06/30/12	29	$(59,760,461)	$3,378,110	$(67,744,995)	$(4,068,123)	$(68,607,950)	$(4,190,166)	(0.448%)
(GAIN)/LOSS	06/30/12	29	$213,473,954	$14,394,624	$214,559,837	$12,884,431	$217,292,962	$13,270,964	1.418%
(GAIN)/LOSS	06/30/13	30	$485,758,258	$141,254	$522,043,672	$56,769	$561,138,088	$7,892,427	0.843%
TOTAL			$1,034,364,773	$46,496,740	$1,063,733,284	$38,313,314	$1,103,789,192	$47,296,668	5.053%

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 passible savings in doing so. Therefore, we have provided alternate amortization schedules to help analyze your current amortization schedule and illustrate the advantages of accelerating payments towards your plan's unfunded liability of $1,103,789,192 as of June 30, 2015, which under the minimum schedule, will require total payments of $2,842,666,085. 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.

Level Rate of Payroll Amortization

Period	2015-16 Rate	2015-16 Payment	Total Payments	Total Interest	Difference from Current Schedule
25	7.794%	$ 72,954,324	$ 2,659,860,982	$ 1,556,071,790	$ 182,805,103
20	8.904%	$ 83,342,075	$ 2,239,432,771	$ 1,135,643,579	$ 603,233,314

If you are interested in changing your plan's amortization schedule please contact your plan actuary to discuss further.

Reconciliation of Required Employer Contributions

	Percentage of Projected Payroll	Estimated $ Based on Projected Payroll
1. Contribution for 7/1/14 – 6/30/15	14.527%	$ 132,770,893
2. Effect of changes since the prior year annual valuation		
a) Effect of unexpected changes in demographics and financial results	0.902%	8,444,895
b) Effect of plan changes	0.000%	0
c) Effect of changes in Assumptions	0.000%	0
d) Effect of change in payroll	-	3,202,586
e) Effect of elimination of amortization base	0.000%	0
f) Effect of changes due to Fresh Start	0.000%	0
g) Net effect of the changes above [Sum of (a) through (f)]	0.902%	11,647,481
3. Contribution for 7/1/15 – 6/30/16 [(1)+(2g)]	15.429%	144,418,374

The contribution actually paid (item 1) may be different if a prepayment of unfunded actuarial liability is made or a plan change became effective after the prior year's actuarial valuation was performed.

Employer Contribution Rate History

The table below provides a recent history of the employer contribution rates for your plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made in the middle of the year.

Required By Valuation

Fiscal Year	Employer Normal Cost	Unfunded Rate	Total Employer Contribution Rate
2010 - 2011	11.084%	1.081%	12.165%
2011 - 2012	10.370%	2.742%	13.112%
2012 - 2013	10.227%	3.267%	13.494%
2013 - 2014	11.099%	3.902%	15.001%
2014 - 2015	10.341%	4.186%	14.527%
2015 - 2016	10.376%	5.053%	15.429%

Funding History

The Funding History below shows the recent history of the actuarial accrued liability, the market value of assets, the funded ratio and the annual covered payroll.

Valuation Date	Accrued Liability	Market Value of Assets (MVA)	Funded Ratio	Annual Covered Payroll
06/30/08	$ 3,350,222,866	$ 3,222,895,376	96.2%	$ 841,612,805
06/30/09	3,790,232,824	2,482,332,809	65.5%	841,103,683
06/30/10	4,097,191,707	2,882,444,152	70.4%	854,932,117
06/30/11	4,461,553,672	3,525,640,733	79.0%	812,362,628
06/30/12	4,708,881,750	3,520,189,846	74.8%	836,418,298
06/30/13	5,008,806,968	3,974,442,195	79.3%	856,593,282

RISK ANALYSIS

- VOLATILITY RATIOS
- PROJECTED RATES
- 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 without Receivables	$	3,957,671,230
2. Payroll		856,593,282
3. Asset Volatility Ratio (AVR = 1. / 2.)		4.6
4. Accrued Liability	$	5,008,806,968
5. Liability Volatility Ratio (LVR = 4. / 2.)		5.8

Projected Rates

The estimated rate for 2016-17 is based on a projection of the most recent information we have available, including an estimated 18 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 an estimate of the impact of the new actuarial assumptions adopted by the CalPERS Board in February 2014. These new demographic assumptions include a 20-year projection of on-going mortality improvement. 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 percent 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**
Contribution Rates:	15.429%	17.0%	17.8%	18.7%	19.6%	19.6%

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 which 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 an 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 two 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 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 Rate	**Estimated Increase in Employer Rate between 2015-16 and 2016-17**
17.0%	1.6%

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 Rate			Estimated Change in Employer Rate between 2016-17 and 2019-20
	2017-18	2018-19	2019-20	
-3.8% (5th percentile)	18.7%	21.2%	24.5%	7.6%
2.8% (25th percentile)	18.2%	19.8%	21.7%	4.7%
7.5%	17.8%	18.7%	19.6%	2.6%
12.0%(75th percentile)	17.5%	17.6%	17.4%	0.4%
18.9%(95th percentile)	17.0%	15.9%	13.8%	-3.2%

Analysis of Discount Rate Sensitivity

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 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 contribution rates.

2015-16 Employer Contribution Rate			
As of June 30, 2013	6.50% Discount Rate (-1%)	7.50% Discount Rate (assumed rate)	8.50% Discount Rate (+1%)
Employer Normal Cost	14.864%	10.376%	6.967%
Accrued Liability	$ 5,718,008,127	$ 5,008,806,968	$ 4,424,474,379
Unfunded Accrued Liability	$ 1,743,565,932	$ 1,034,364,773	$ 450,032,184

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 strongly 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]
06/30/11	$ 6,004,192,526	$ 3,525,640,733	$ 2,478,551,793	58.7%	4.82%
06/30/12	8,224,423,393	3,520,189,846	4,704,233,547	42.8%	2.98%
06/30/13	7,756,697,406	3,974,442,195	3,782,255,211	51.2%	3.72%

[1] The hypothetical liabilities calculated above include a 7 percent mortality contingency load 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 was 3.55 percent.

GASB STATEMENT NO. 27

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MISCELLANEOUS PLAN of the COUNTY OF RIVERSIDE
Information for Compliance with GASB Statement No. 27

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. This will be the last year that GASB disclosure information will be included in your annual actuarial report. GASB 68 will require additional reporting that CalPERS is intending to provide upon request for an additional fee. We urge you to start discussions with your auditors on how to implement GASB 68.

Under GASB 27, an employer reports an annual pension cost (APC) equal to the annual required contribution (ARC) plus an adjustment for the cumulative difference between the APC and the employer's actual plan contributions for the year. The cumulative difference is called the net pension obligation (NPO). Since GASB 68 replaces GASB 27, for fiscal year 2015-16, the APC is replaced by the Actuarially Determined Contribution (ADC). The ADC for July 1, 2015 to June 30, 2016 is 15.429% percent of payroll. In order to calculate the dollar value of the ADC for inclusion in financial statements prepared as of June 30, 2016, this contribution rate, less any employee cost sharing, as modified by any 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. The employer and the employer's auditor are responsible for determining the NPO, APC or ADC for a given fiscal year.

A summary of principal assumptions and methods used to determine the funded status is shown below.

	Retirement Program
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%.

Initial unfunded liabilities are amortized over a closed period that depends on the plan's date of entry into CalPERS. Subsequent plan amendments are amortized as a level percentage of pay over a closed 20-year period. Gains and losses that occur in the operation of the plan are amortized over a 30-year period with Direct Rate Smoothing with a 5-year ramp up/ramp down. If the plan's accrued liability exceeds the actuarial value of plan assets, then the amortization payment on the total unfunded liability may not be lower than the payment calculated over a 30-year amortization period. More detailed information on assumptions and methods is provided in Appendix A of this report. Appendix B contains a description of benefits included in the valuation.

The Schedule of Funding Progress below shows the recent history of the actuarial accrued liability, actuarial value of assets, their relationship and the relationship of the unfunded actuarial accrued liability to payroll.

Valuation Date	Accrued Liability (a)	Actuarial value of Assets* (b)	Unfunded Liability (UL) (a)-(b)	Funded Ratios (b)/(a)	Annual Covered Payroll (c)	UL As a % of Payroll [(a)-(b)]/(c)
06/30/09	$ 3,790,232,824	$ 3,401,036,977	$ 389,195,847	89.7%	$ 841,103,683	46.3%
06/30/10	4,097,191,707	3,652,860,802	444,330,905	89.2%	854,932,117	52.0%
06/30/11	4,461,553,672	3,923,498,630	538,055,042	87.9%	812,362,628	66.2%
06/30/12	4,708,881,750	4,172,401,219	536,480,531	88.6%	836,418,298	64.1%
06/30/13	5,008,806,968	3,974,442,195	1,034,364,77 3	79.3%	856,593,282	120.8%

* Beginning with the 6/30/2013 valuation Actuarial Value of Assets equals Market Value of Assets per CalPERS Direct Rate Smoothing Policy.

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PLAN'S MAJOR BENEFIT PROVISIONS

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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 the following section of this Appendix.

	Contract Package						
Benefit Provision	Receiving	Active Misc	Active Misc	Active Misc	Active Misc	Active Misc	Active Misc
Benefit Formula		2.0% @ 55	2.0% @ 55	3.0% @ 60	3.0% @ 60	2.0% @ 55	3.0% @ 60
Social Security Coverage		Yes	No	Yes	No	Yes	Yes
Full/Modified		Modified	Full	Modified	Full	Modified	Modified
Final Average Compensation Period		12 mos.	12 mos.	12 mos.	12 mos.	12 mos.	12 mos.
Sick Leave Credit		No	No	No	No	No	No
Non-Industrial Disability		Standard	Standard	Standard	Standard	Standard	Standard
Industrial Disability		No	No	No	No	No	No
Pre-Retirement Death Benefits							
Optional Settlement 2W		No	No	No	No	No	No
1959 Survivor Benefit Level		No	Indexed	No	Indexed	No	No
Special		No	No	No	No	No	No
Alternate (firefighters)		No	No	No	No	No	No
Post-Retirement Death Benefits							
Lump Sum	$500	$500	$500	$500	$500	$500	$500
Survivor Allowance (PRSA)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
COLA	2%	2%	2%	2%	2%	2%	2%

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 the following section of this Appendix.

	Contract Package						
Benefit Provision	Active Misc	Active Misc	Active Misc	Active Misc			
Benefit Formula	3.0% @ 60	2.0% @ 62	2.0% @ 62	2.0% @ 60			
Social Security Coverage	No	No	Yes	Yes			
Full/Modified	Full	Full	Full	Modified			
Final Average Compensation Period	12 mos.	36 mos.	36 mos.	36 mos.			
Sick Leave Credit	No	No	No	No			
Non-Industrial Disability	Standard	Standard	Standard	Standard			
Industrial Disability	No	No	No	No			
Pre-Retirement Death Benefits							
Optional Settlement 2W	No	No	No	No			
1959 Survivor Benefit Level	Indexed	No	No	No			
Special	No	No	No	No			
Alternate (firefighters)	No	No	No	No			
Post-Retirement Death Benefits							
Lump Sum	$500	$500	$500	$500			
Survivor Allowance (PRSA)	Yes	Yes	Yes	Yes			
COLA	2%	2%	2%	2%			

APPENDICES

- **APPENDIX A – ACTUARIAL METHODS AND ASSUMPTIONS**
- **APPENDIX B – PRINCIPAL PLAN PROVISIONS**
- **APPENDIX C – PARTICIPANT DATA**
- **APPENDIX D – DEVELOPMENT OF PPERA MEMBER CONTRIBUTION RATES**
- **APPENDIX E – 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 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 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.

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

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
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

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
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

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
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

Duration of Service	(Entry Age 20)	(Entry Age 30)	(Entry Age 40)
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).

	Non-Industrial Death (Not Job-Related)		Industrial Death (Job-Related)
Age	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.

	Healthy Recipients		Non-Industrially Disabled (Not Job-Related)		Industrially Disabled (Job-Related)	
Age	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.

	Miscellaneous		Fire	Police	County Peace Officer	Schools	
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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 ½ @ 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 ½ @ 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

	Duration of Service					
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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

	Duration of Service					
Age	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	01400
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

	Duration of Service					
Age	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

	Duration of Service					
Age	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	01700
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

	Duration of Service					
Age	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

	Duration of Service					
Age	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	01900
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

	Duration of Service					
Age	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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