Merced County Employees' Retirement Association

Actuarial Valuation as of June 30, 2016

Produced by Cheiron

February 2017

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February 15, 2017

Retirement Board of Merced
County Employees' Retirement Association
3199 M Street
Merced, CA 95348

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the Merced County Employees' Retirement Association (MCERA, the Fund, the Plan) as of June 30, 2016. This report contains information on the Plan's assets, liabilities, and discloses employer contribution levels. Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report.

The purpose of this report is to present the results of the annual actuarial valuation of MCERA. This report is for the use of the Retirement Board of MCERA and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of this report is not an intended user and is considered a third party.

Cheiron's report was prepared solely for the Retirement Board of MCERA for the purposes described herein, except that the plan auditor may rely on this report solely for the purpose of completing an audit related to the matters herein. It is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely,
Cheiron

Graham A. Schmidt, ASA, EA, FCA, MAAA
Consulting Actuary

David Holland, FSA, FCA, MAAA, EA
Consulting Actuary

FOREWORD

Cheiron has performed the actuarial valuation of the Merced County Employees' Retirement Association as of June 30, 2016. The valuation is organized as follows:

- In Section I, the **Executive Summary,** we describe the purpose of an actuarial valuation, summarize the key results found in this valuation, and disclose important trends.

- The **Main Body** of the report presents details on the Plan's

    - Section II - Assets
    - Section III - Liabilities
    - Section IV - Contributions
    - Section V - Comprehensive Annual Financial Reporting Information

- In the **Appendices** we conclude our report with detailed information describing plan membership (Appendix A), actuarial assumptions and methods employed in the valuation (Appendix B), a summary of pertinent plan provisions (Appendix C), tables containing member contribution rates (Appendix D), and a glossary of key actuarial terms (Appendix E).

The results of this report rely on future Plan experience conforming to the underlying assumptions and methods outlined in this report. To the extent that the actual plan experience deviates from the underlying assumptions and methods, or there are any changes in plan provisions or applicable laws, the results would vary accordingly.

In preparing our report, we relied on information (some oral and written) supplied by the MCERA staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice #23.

SECTION I – EXECUTIVE SUMMARY

The primary purpose of the actuarial valuation and this report is to measure, describe, and identify the following as of the valuation date:

- The financial condition of the Plan,
- Past and expected trends in the financial progress of the Plan,
- Employer and employee contribution rates for Fiscal Year 2018, and,
- Information required by the GFOA for the Comprehensive Annual Financial Report.

In the balance of this Executive Summary, we present (A) the basis upon which this year's valuation was completed, (B) the key findings of this valuation including a summary of all key financial results, (C) an examination of the historical trends, and (D) the projected financial outlook for the Plan.

A. Valuation Basis

This valuation determines the employer contributions for the fiscal year ending June 30, 2018. The Plan's funding policy is to collect contributions from the employers and employees equal to the sum of:

- The normal cost under the Entry Age Normal Cost Method,
- Amortization of the Unfunded Actuarial Liability, and
- The Plan's expected administrative expenses.

The Unfunded Actuarial Liability payment is determined as the amount needed to fund the outstanding Unfunded Actuarial Liability (UAL). Effective with the June 30, 2013 valuation, the UAL as of June 30, 2013 is amortized over a closed 16-year period. At the meeting held on January 22, 2015, the Board of Retirement adopted a new funding policy for any subsequent unexpected change in the UAL after June 30, 2013. Effective with the June 30, 2014 valuation, any new sources of UAL due to actuarial gains and losses or method changes are amortized over a closed 24-year period, with a five-year ramp up period at the beginning of the period, a four-year ramp down at the end of the period, and 15 years of level payments as a percentage of payroll between the ramping periods. Assumption changes will be amortized over a closed 22-year period, with a three-year ramp up period, two-year ramp down period, and 17 years of level payments as a percentage of payroll. This amortization method is similar to a traditional five or three year asset smoothing and a 20-year amortization period with level payments as a percentage of payroll. The Board also adopted a policy to replace the smoothed Actuarial Value of Assets with the Market Value of Assets for valuation purposes. These new amortization and funding policies in conjunction are a type of policy known as direct rate smoothing.

Experience studies are performed every three years. This valuation was performed on the basis of the economic and demographic assumptions and methods that were determined in the Actuarial Experience Study dated February 15, 2017. A summary of the assumptions and methods used in the current valuation is shown in Appendix B.

SECTION I – EXECUTIVE SUMMARY

This valuation was prepared based on the Plan provisions shown in Appendix C. Employee contribution rates are shown in Appendix D. The rates for PEPRA members will be recomputed each year to be one-half of the total normal cost rate.

Key Findings of this Valuation

The following discussion summarizes the key results of the June 30, 2016 valuation and how they compare to the results from the June 30, 2015 valuation.

Summary of Key Valuation Results

Table I-1 summarizes the key results of the valuation with respect to assets, liabilities, and contributions.

Table I-1
Merced County Employees' Retirement Association
Summary of Key Valuation Results
(in millions)

Valuation Date **Fiscal Year End**	**June 30, 2016** **2018**	**June 30, 2015** **2017**
Actuarial Liability	$ 1,201.2	$ 1,131.2
Market Value of Assets	670.0	672.3
Unfunded Actuarial Liability	$ 531.2	$ 458.9
Funded Ratio	55.8%	59.4%
Net Employer Contribution Rate	50.58%	50.02%

More discussion of the factors that affected these results can be found in the remainder of this section, but some key points are as follows:

- The employer contribution rate increased from 50.02% to 50.58%.
- The Unfunded Actuarial Liability (UAL) is the excess of the Plan's Actuarial Liability over the Market Value of Assets. The Plan's UAL increased from $458.9 to $531.2 million. This increase in UAL was primarily due to experience losses from assets and liability increases from assumption changes.
- The Plan's funded ratio, the ratio of market assets over Actuarial Liability, decreased from 59.4% last year to 55.8% as of June 30, 2016.

SECTION I – EXECUTIVE SUMMARY

Plan Membership

Table I-2 summarizes Plan membership as of June 30, 2016 and June 30, 2015. More detailed membership statistics are shown in Appendix A.

Table I-2
Membership Total

Item	June 30, 2016	June 30, 2015	% Change
Actives	2,040	1,962	4.0%
Deferred Members	735	677	8.6%
Retired Members	2,234	2,200	1.5%
Total Members	5,009	4,839	3.5%
Active Member Payroll	$ 123,018,313	$ 117,822,103	4.4%
Average Pay per Active	60,303	60,052	0.4%

Some key points are as follows:

- Total Plan membership increased by 3.5%, mostly driven by the increase in active and deferred members. The active membership count increased by 4.0%.
- The pay figures reflect the annualized rate as of June 30, plus expected increases for the upcoming year. The average pay per active member increased slightly by 0.4%.

SECTION I – EXECUTIVE SUMMARY

Components of UAL Change between June 30, 2015 and June 30, 2016

Table I-3 is a detailed reconciliation of the components that affected the UAL between June 30, 2015 and June 30, 2016.

Table I-3
Change in Unfunded Actuarial Liability

	Experience		in millions
1.	Unfunded actuarial liability, 6/30/2015	$	458.9
2.	Expected change in unfunded actuarial liability	$	(13.3)
3.	Unfunded increase due to investment loss		52.4
4.	Unfunded increase due to contributions less than expected (including impact of 12-month rate delay)		2.7
5.	Unfunded increase due to expenses greater than expected		0.7
6.	Unfunded decrease due to liability gain		(8.3)
7.	Unfunded increase due to assumption changes		38.1
8.	Total change in unfunded actuarial liability		72.3
9.	Unfunded actuarial liability, 6/30/2016	$	531.2

The Plan's UAL increased from $458.9 million as of June 30, 2015 to $531.2 million as of June 30, 2016. As shown above, the largest contributing factors were investment losses and the changes in assumptions from the experience study. Contributions less than expected increased the UAL by $2.7 million, largely resulting from lower than expected payroll. There were gains on actuarial liabilities of $8.3 million, most of which were from salary increases less than expected, more retiree deaths than expected, and fewer retirements than expected, offset by cost-of-living adjustments for retirees that were slightly higher than assumed.

SECTION I – EXECUTIVE SUMMARY

Employer Contribution Reconciliation

Table I-4 is a detailed reconciliation between the Fiscal Year 2017 and Fiscal Year 2018 employer contribution rates, in total and by component.

Table I-4
Employer Contribution Reconciliation

Item	Total	Normal Cost	Amortization	Expenses
FYE 2017 Net Employer Contribution Rate	50.02%	8.78%	39.92%	1.32%
Expected Change due to phase-in	-0.56%	0.00%	-0.56%	0.00%
Change due to investment loss	0.73%	0.00%	0.73%	0.00%
Change due to contributions less than expected (including impact of 12-month rate delay)	0.04%	0.00%	0.04%	0.00%
Change due to expenses greater than expected	0.01%	0.00%	0.01%	0.00%
Change due to PEPRA new hires	-0.27%	-0.27%	0.00%	0.00%
Change due to liability gain	-0.18%	-0.06%	-0.12%	0.00%
Change due to effect of payroll on amort / expense	-0.39%	0.00%	-0.37%	-0.02%
Change due to change in expense assumption	0.24%	0.00%	0.00%	0.24%
Change due to change in other assumptions	0.94%	0.86%	0.08%	0.00%
Total change	0.56%	0.53%	-0.19%	0.22%
FYE 2018 Net Employer Contribution Rate	50.58%	9.31%	39.73%	1.54%

The employer contribution rate increased from 50.02% for Fiscal Year 2017 to 50.58% for Fiscal Year 2018:

- The phase-in of the net UAL experience gains from the two years since the adoption of direct rates smoothing (based on a net gain in FYE 2014 and a smaller net loss in FYE 2015) decreased the contribution rate by 0.56%. These net experience gains will continue to be phased-in over the next two years, resulting in similar reductions in the employer contribution rates, after which there will be a small one-year expected increase in the contribution rate from the last portion of the FYE 2015 loss to be phased-in.

- The investment loss for the current fiscal year increased the current year contribution rate by 0.73% of pay. The assets of the Plan returned -0.06% (net of investment expenses) on a market basis, lower than the assumed rate of 7.75%. The amortization payment for the current year investment losses will continue to be phased-in over the next four years.

- Contributions less than expected increased the employer contribution rate by 0.04% of pay, largely due to lower than expected payroll.

- Demographic experience was favorable for a net decrease in cost of about 0.18% of pay, 0.06% of which was for changes in the employer normal cost, and 0.12% of which was

SECTION I – EXECUTIVE SUMMARY

for changes in the UAL amortization payment. As with the investment losses, the changes in the UAL payment will continue to be phased-in over the next four years. The replacement of legacy members by PEPRA members further decreased the normal cost by about 0.27% of pay.

- An increase in the projected payroll more than expected decreased the employer contribution rate by 0.39% of pay, since it results in the Plan's Unfunded Actuarial Liability and administrative expenses being spread over a larger-than-anticipated payroll base.

- The administrative expense assumption was increased to $2.2 million for the next fiscal year, based on a recommendation from Staff, which increased the contribution rate by 0.24% of payroll.

- The other assumption changes from the experience study increased the employers' contribution rate by 0.94%, 0.86% of which was for changes in the employer normal cost rate and 0.08% of which was for current year changes in the UAL rate. The UAL rate increased by approximately 0.81% of pay as a result of the first year of the phase-in of the $38.1 million UAL layer for the assumption changes, and these changes will continue to be phased-in over the next two years. This was offset by the fact that the payments necessary to amortize the other layers of the UAL decreased by approximately 0.73% of pay as a result of the adoption of new economic assumptions.

Plan Risk

Table I-5 Asset to Payroll Ratio as of June 30, 2016		
Active Member Payroll	$	123,018,313
Assets (Market Value)		670,015,824
Ratio of Assets to Payroll		5.45
Ratio with 100% Funding		9.76

One of the most important measures of a plan's risk is the ratio of plan assets to payroll. The table above shows MCERA's assets as a percentage of active member payroll. This ratio indicates the sensitivity of the Plan to the returns earned on Plan assets. We note in the table that assets currently are more than five times covered payroll for the Plan; as funding improves and the Plan reaches 100% funding, the ratio of assets to payroll will increase to over nine times payroll, perhaps higher depending on the Plan's future demographic makeup.

To appreciate the impact of the ratio of assets to payroll on contributions rates, consider the situation for a new plan with almost no assets. Even if the assets suffer a bad year of investment returns, the impact on the contribution rate is nil, because the assets are so small.

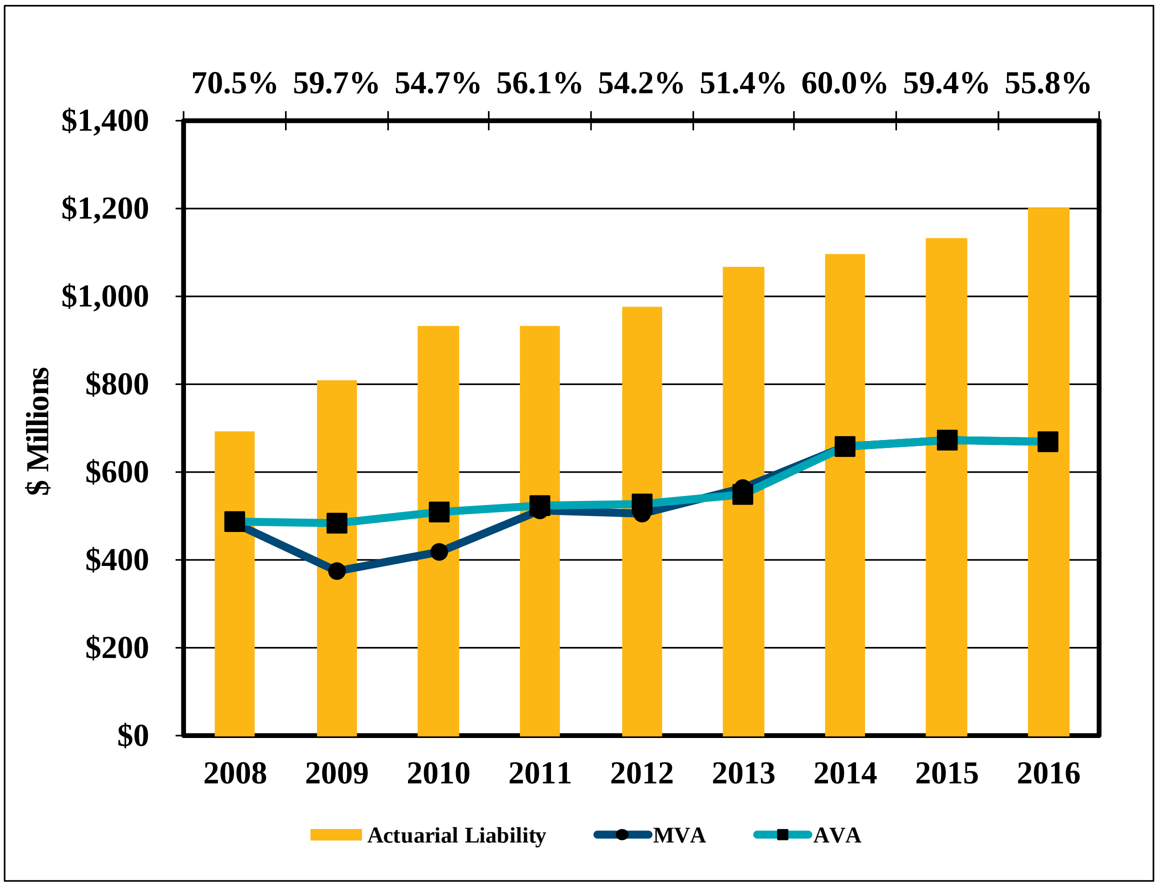
On the other hand, consider the situation for MCERA. Suppose MCERA's assets lose 10% of their value in a year. Since they were assumed to earn 7.25%, there is an actuarial loss of 17.25% of plan assets. Based on the current ratio of assets to payroll (545%), that means the loss in assets is about 94% of active payroll (545% of the 17.25% loss). There is only one source of funding to make up for this loss: the employers. Consequently, barring future offsetting investment gains, the employers must make up the asset loss in future contributions. In this example of a one-year loss of 10%, this shortfall will eventually require an additional amortization payment in the vicinity of 7.8% of payroll once fully phased-in, if amortized over the Plan's 24-year schedule for gains and losses.

Historical Trends

Despite the fact that for most retirement plans the greatest attention is given to the current valuation results and in particular, the size of the current Unfunded Actuarial Liability and the employer contribution, it is important to remember that each valuation is merely a snapshot in the long-term progress of a pension fund. It is more important to judge a current year's valuation result relative to historical trends, as well as trends expected into the future.

Assets and Liabilities

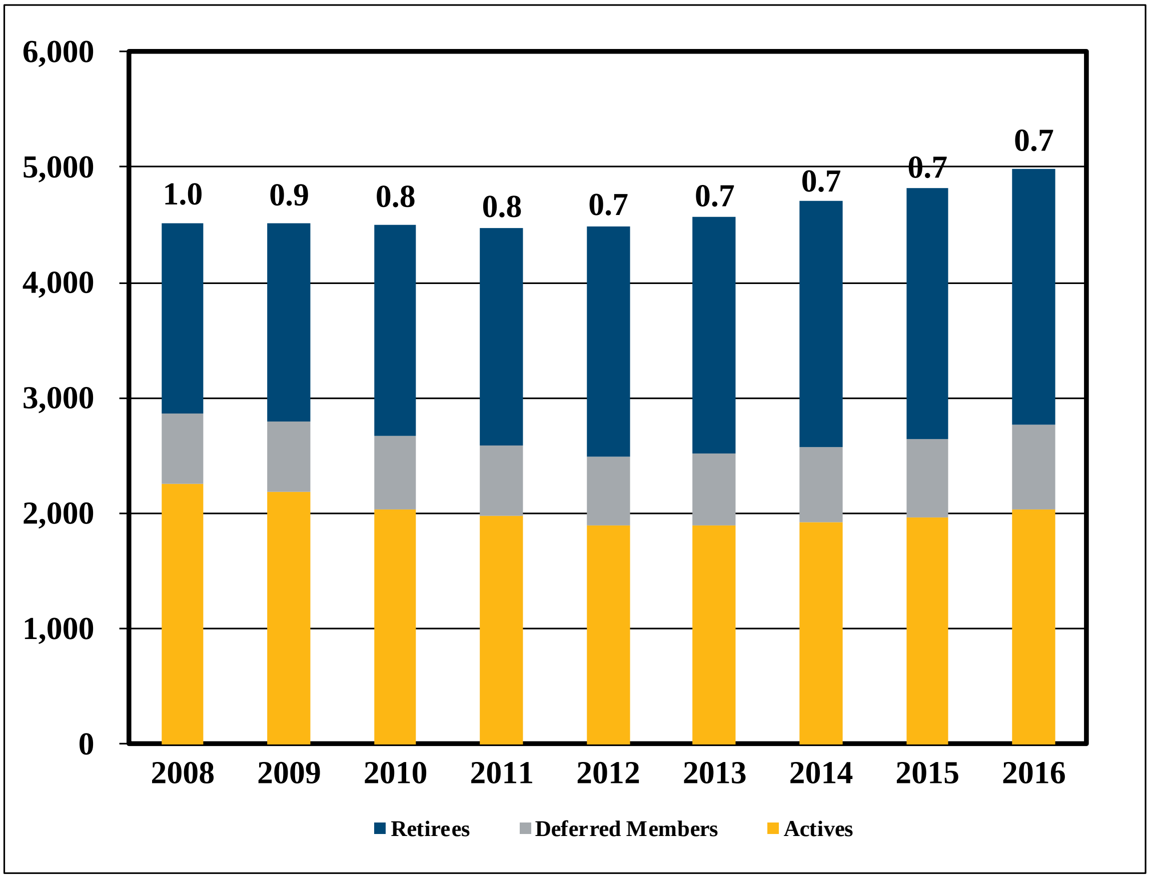
The chart below compares the Market Value of Assets (MVA) and Actuarial Value of Assets (AVA) to the Actuarial Liabilities. The percentage shown at the top of each bar is the ratio of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio). Beginning June 30, 2014, the Actuarial Value of Assets is equal to the Market Value, and thus the funded ratios shown in 2014 and after will be based on the Market Value of Assets. The funded ratio has declined from 70.5% in 2008 to 55.8% as of June 30, 2016.



SECTION I – EXECUTIVE SUMMARY

The extraordinary asset loss of 2008 adversely affected the funded ratio from 2009 to 2013. The 2014 funded ratio increased as a result of asset and liability gains in 2014, and as a result of resetting the Actuarial Value of Assets to the Market Value. The 2016 funded ratio decreased as a result of investment losses and losses from assumption changes.

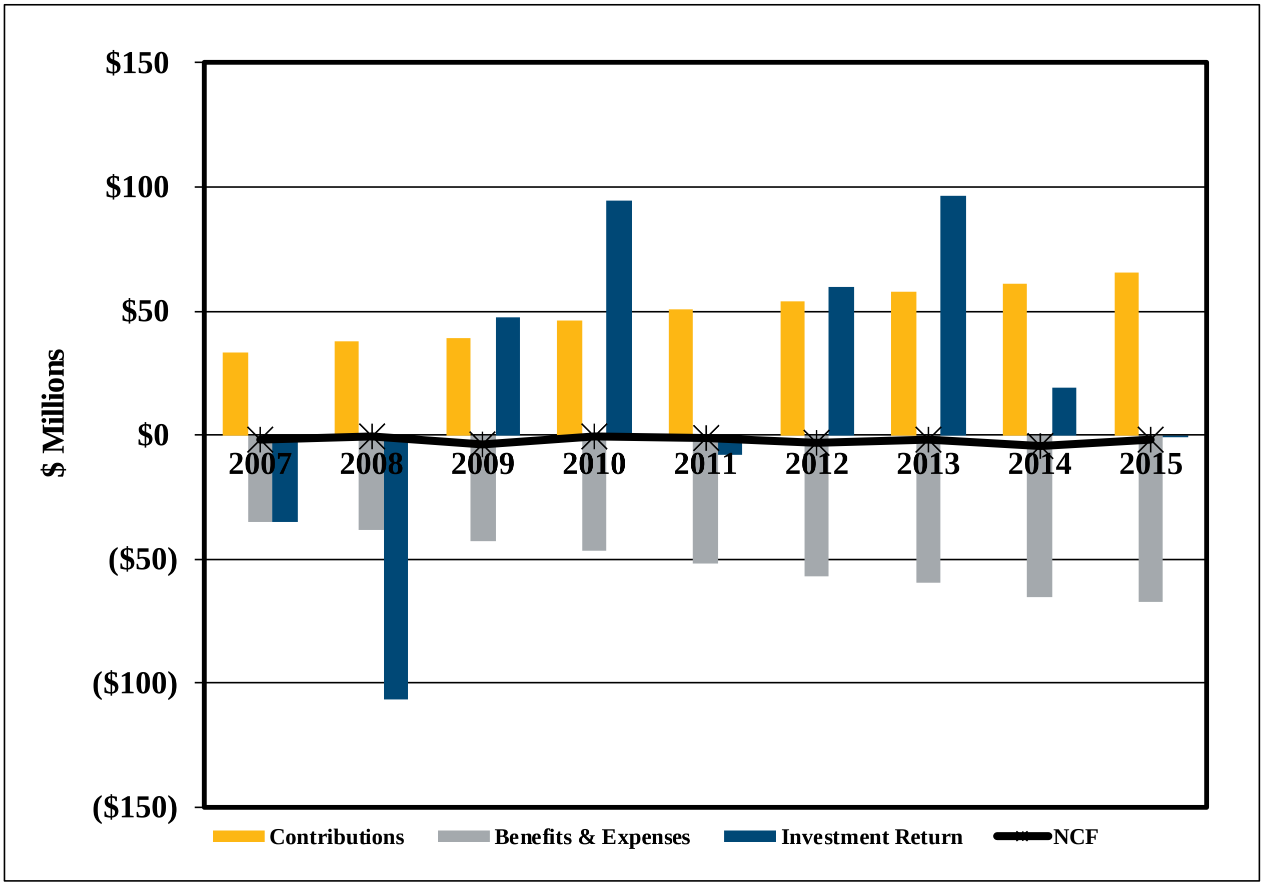
Participant Trends



The chart above provides a measure for Plan maturity by comparing the ratio of active members to inactive members (retirees and deferred members). These ratios are given at the top of each bar. The active-to-inactive ratio has decreased from 2008 to 2016, indicating the ongoing maturation of the Plan. While this is neither good nor bad in itself, it does have implications for the risk profile of the Plan, as discussed under Table I-5 earlier in this section.

Cash Flows

The chart shows the Plan's cash flow (contribution less benefit payments). This is a critical measure, as it reflects the ability to have funds available to meet benefit payments without having to make difficult investment decisions, especially during volatile markets.



In the chart above, the contributions, benefit payments, and investment returns are shown as bars and the Plan's net cash flow (NCF) is shown as a black line. The NCF, which is equal to contributions less benefit payments, has been close to zero for the entire period shown. A negative cash flow magnifies the losses during a market decline hindering the Plan in its ability to absorb market fluctuations. The implications of a plan in negative cash flow are that the impact of market fluctuations can be more severe. As assets are being depleted to pay benefits in down markets, there is less principal available to be reinvested during favorable return periods.

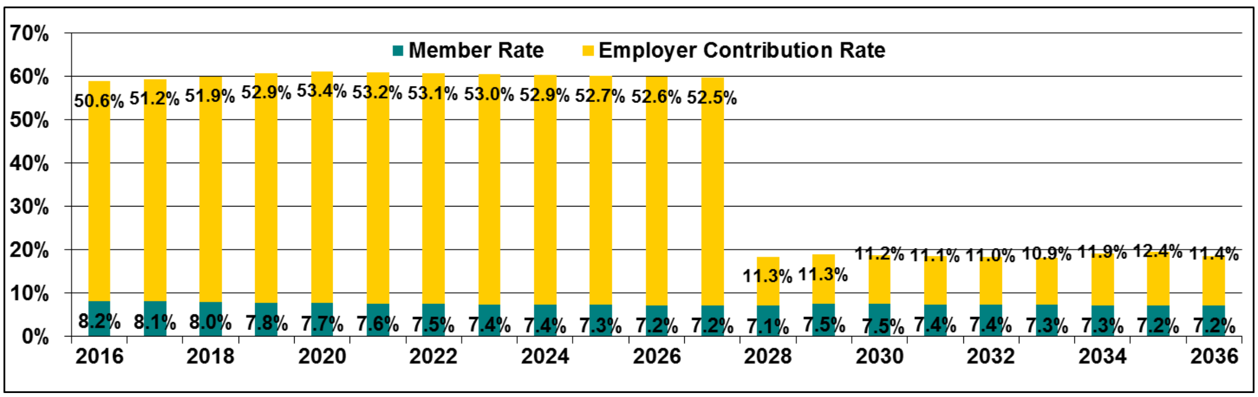
Future Expected Financial Trends

The analysis of projected financial trends is perhaps the most important component of this valuation. In this Section, we present our assessment of the implications of the June 30, 2016 valuation results in terms of benefit security (assets compared to liabilities). All the projections in this section are based on the current interest rate assumption of 7.25%. We have assumed increases in future pensionable payroll of 2.75% per year.

Contribution Projections:

The following graph shows the expected employer and member contribution rates based on actually achieving the 7.25% assumption each year for the next 20 years, which is clearly impossible.

Projection of Employer and Member Contributions, 7.25% return each year



The graph above shows employer contributions peaking at 53.4% in the June 30, 2020 valuation (for Fiscal Year 2022), decreasing slightly in the subsequent years, and then dropping off significantly in 2028 once the amortization of the bulk of the Unfunded Actuarial Liability is complete.

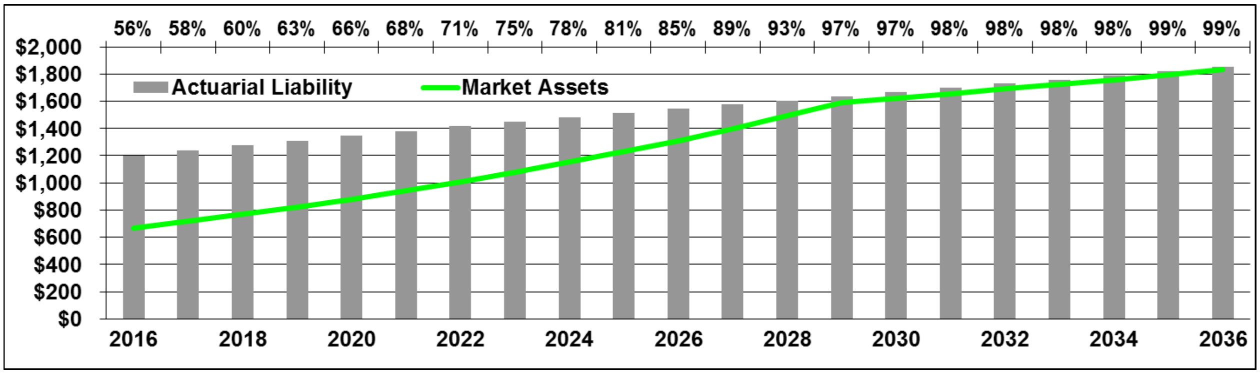
Note that the graph above does not forecast any actuarial gains or losses. Even relatively modest losses relative to the 7.25% assumed return could push the employer contribution rate further above 50% in the next few years.

SECTION I – EXECUTIVE SUMMARY

Asset and Liability Projections:

The graph shows the projection of assets and liabilities assuming that assets will earn the 7.25% assumption each year during the projection period. The percentages along the graph represent the funded ratio or status of the System.

Projection of Assets and Liabilities, 7.25% return each year



The graph shows that the projected funded status increases over the next 20 years to nearly 100%, assuming the actuarial assumptions are achieved. However, as above, it is the actual return on plan assets that will determine the future funded status and contribution rates.

SECTION II – ASSETS

Pension Plan assets play a key role in the financial operation of the Plan and in the decisions the Board may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact benefit levels, employer contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on Plan assets including:

- **Disclosure** of Plan assets as of June 30, 2015 and June 30, 2016,
- Statement of the **changes** in market values during the year, and
- Historical **investment performance.**

As of June 30, 2014, an Actuarial Value of Assets distinct from the Market Value of Assets is no longer used in the calculations of the Unfunded Actuarial Liability or funded status due to the implementation of the new funding policy adopted by the Board on January 22, 2015. This policy change was made in conjunction with the new 24-year layered amortization of any unexpected changes in the Unfunded Actuarial Liability starting with the June 30, 2014 valuation. The calculation of the Actuarial Value of Assets is no longer shown in the valuation report, except to show the history of returns on the actuarial assets in Table II-3.

Also in prior valuations, a distinction was made between actuarial assets and valuation assets, with the latter reduced for non-valuation reserves, such as the Contingency Reserve. Since there are no such reserves as of June 30, 2015 and June 30, 2016, the two asset values are equal, and throughout this report we have used the term Market Value of Assets exclusively, except to show the history of returns on the valuation assets in Table II-3.

Disclosure

The market value represents "snap-shot" or "cash-out" values that provide the principal basis for measuring financial performance from one year to the next.

Table II-1 on the next page discloses and compares each asset value as of June 30, 2015 and June 30, 2016.

SECTION II – ASSETS

Table II-1
Statement of Assets at Market Value

Assets		**June 30, 2016**		**June 30, 2015**
Cash and Short-Term Investments:				
Cash invested with Merced County Treasurer	$	$1,293,296	$	1,577,066
Cash invested with BNY Mellon		5,960,492		5,379,699
Other cash and cash equivalents with BNY Mellon		3,576,091		3,803,346
Securities lending collateral		4,972,033		2,638,976
Total Cash and Short-Term Investments	$	15,801,912	$	13,399,087
Receivables:				
Bond interest	$	640,636	$	645,358
Dividends		235,304		235,575
Contributions		3,557,195		2,951,115
Distributions		255,139		594,498
Securities sold		921,498		2,186,877
Other		6,450		1,574
Total Receivables	$	5,616,222	$	6,614,997
Investments at Market Value:				
U.S. government and agency obligations	$	63,790,914	$	53,798,734
Domestic fixed income		108,687,312		90,975,193
Common stocks (domestic)		39,432,005		40,995,445
Common stocks (index funds)		160,011,327		169,455,988
Common stocks (international)		138,263,801		154,854,029
Common stocks (international index funds)		18,259,912		0
Real estate		58,116,070		53,867,884
Alternative investments		70,181,549		92,061,348
Total Investments at Market Value	$	656,742,890	$	656,008,621
Other Assets:				
Prepaid expense	$	0	$	16,681
Capital assets, net of accumulated depreciation of $610,802 and $214,320 respectively		2,336,218		2,271,829
Total Assets		680,497,242		678,311,215
Liabilities				
Accounts payable	$	606,906	$	692,498
Securities lending obligation		4,972,033		2,638,976
Securities purchased		4,817,076		2,649,013
Unclaimed contributions		85,403		11,359
Total Liabilities		10,481,418		5,991,846
Market Value of Assets	**$**	**670,015,824**	**$**	**672,319,369**

SECTION II – ASSETS

Changes in Market Value

The components of asset change are:

- Contributions (employer and employee)
- Benefit payments
- Expenses (investment and administrative)
- Investment income (realized and unrealized)

Table II-2 shows the components of change in the Market Value of Assets during 2015 and 2016.

Table II-2
Changes in Market Values

Additions		**Fiscal Year ending June 30, 2016**		**Fiscal Year ending June 30, 2015**
Contributions:				
Employer	$	56,617,088	$	52,005,656
Plan members		9,042,663		8,945,316
Total Contributions	$	65,659,751	$	60,950,972
Investment Income/(Loss) from Investment Activities:				
Net appreciation/(depreciation) in fair value of investments	$	(7,297,000)	$	12,647,924
Investment income		9,240,309		9,642,717
Other revenue		12,834		13,018
Less investment expenses		(2,361,966)		(3,007,179)
Total Investment Income/(Loss) from Investment Activities	$	(405,823)	$	19,296,480
Securities Lending Income:				
Securities lending income	$	4,893	$	11,990
Securities lending rebates		12,721		10,380
Total Securities Lending Income	$	17,614	$	22,370
Total Investment Income/(Loss)	$	(388,209)	$	19,318,850
Total Additions		65,271,542		80,269,822
Deductions				
Benefits paid	$	63,928,672	$	61,780,089
Refunds of contributions		1,153,731		1,171,835
Administrative expense		2,416,563		2,197,281
Actuarial expense		76,121		126,165
401(h) distribution to County		0		0
Total Deductions		67,575,087		65,275,370
Net Increase/(Decrease)	$	(2,303,545)	$	14,994,452
Market Value of Assets, Beginning of Year		672,319,369		657,324,917
Market Value of Assets, End of Year	**$**	**670,015,824**	**$**	**672,319,369**

SECTION II – ASSETS

Investment Performance

The following table shows the historical annual asset returns on a market value and actuarial value basis, as well in the increase in the Consumer Price Index (CPI) since 1995. Beginning June 30, 2014, the Actuarial Value of Assets is equal to the Market Value of Assets, so the net returns are the same for FY 2015 and FY 2016.

Table II-3
Net Return on Assets vs. Increase in Consumer Price Index

Year Ended June 30	Net Return at Market Value	Net Return at Actuarial Value	Net Return at Valuation Assets	Increase in Consumer Price Index[1]
1995		4.4%		3.0%
1996	9.8%	9.8%		2.8%
1997	16.7%	11.6%		2.3%
1998	13.9%	12.7%		1.7%
1999	10.0%	12.3%		2.0%
2000	9.1%	11.5%		3.7%
2001	-3.6%	8.6%		3.2%
2002	-5.6%	4.9%		1.1%
2003	4.6%	3.3%		2.1%
2004	12.6%	3.3%		3.3%
2005	8.7%	2.5%		2.5%
2006	7.6%	4.7%		4.3%
2007	16.3%	8.9%		2.7%
2008	-6.7%	1.2%		5.0%
2009	-22.1%	-4.9%	2.7%	-1.4%
2010	12.7%	7.0%	6.0%	1.1%
2011	22.6%	2.6%	2.7%	3.6%
2012	-1.6%	0.6%	1.0%	1.7%
2013	11.8%	3.8%	3.8%	1.8%
2014	17.1%	11.8%	11.8%	2.1%
2015	2.9%	2.9%	2.9%	0.1%
2016	-0.1%	-0.1%	-0.1%	1.0%
15-Year Compound Average	**4.8%**	**3.4%**	**N/A**	**2.1%**
10-Year Compound Average	**4.5%**	**3.3%**	**N/A**	**1.8%**
5-Year Compound Average	**5.8%**	**3.7%**	**3.8%**	**1.3%**

[1] *Based on All Urban Consumers - U.S. City Average, June indices.*

SECTION III – LIABILITIES

In this section, we present detailed information on Plan liabilities including:

- **Disclosure** of Plan liabilities at June 30, 2015 and June 30, 2016, and
- Plan liabilities by **tier** as of June 30, 2016.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them. Note that these liabilities are not applicable for settlement purposes, including the purchase of annuities and the payment of lump sums.

- **Present Value of Future Benefits:** Used for measuring all future Plan obligations, represents the amount of money needed today to fully fund all benefits of the Plan both earned as of the valuation date and those to be earned in the future by current plan participants, under the current Plan provisions.

- **Actuarial Liability:** Used for funding calculations, this liability is calculated taking the Present Value of Future Benefits and subtracting the present value of future Member Contributions and future Employer Normal Costs under an acceptable actuarial funding method. The method used for this Plan is called the **Entry Age Normal** (EAN) funding method.

- **Unfunded Actuarial Liability:** The excess of the Actuarial Liability over the Actuarial Value of Assets.

Table III-1 on the following page discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of Plan assets yields, for each respective type, a **net surplus,** or an **Unfunded Actuarial Liability**.

SECTION III – LIABILITIES

Table III-1
Present Value of Future Benefits and Actuarial Liability
(in thousands)

Item	June 30, 2016	June 30, 2015
Present Value of Future Benefits		
Actives	$ 493,837	$ 449,558
Deferred Members	47,561	44,037
Retirees	688,324	658,382
Disabled	64,872	60,369
Beneficiaries	51,461	46,987
Total MCERA	$ 1,346,056	$ 1,259,334
Actuarial Liability		
Total Present Value of Benefits	$ 1,346,056	$ 1,259,334
Present Value of Future Normal Costs		
Employer Portion	75,422	66,921
Employee Portion	69,439	61,232
Actuarial Liability	$ 1,201,195	$ 1,131,181
Market Value of Assets	$ 670,016	$ 672,319
Unfunded Actuarial Liability/(Surplus)	$ 531,180	$ 458,862

SECTION III – LIABILITIES

Table III-2 discloses the liabilities of the Plan as of June 30, 2016, split by tier.

Table III-2
Liabilities by Group as of June 30, 2016
(in thousands)

	General					Safety					All
Present Value of Future Benefits	**Tier 1**	**Tier 2**	**Tier 3**	**Tier 4**	**Total**	**Tier 1**	**Tier 2**	**Tier 3**	**Tier 4**	**Total**	**Total**
Actives	$ 104,226	$ 252,341	$ 4,548	$ 30,810	$ 391,925	$ 30,651	$ 62,498	$ 549	$ 8,214	$ 101,912	$ 493,837
Deferred Members	15,072	24,052	122	159	39,405	2,261	5,819	3	73	8,156	47,561
Retirees	518,549	58,701	5	-	577,255	106,911	4,158	-	-	111,069	688,324
Disabled	18,440	5,763	-	-	24,203	35,423	5,247	-	-	40,669	64,872
Beneficiaries	31,552	1,789	-	-	33,340	17,527	594	-	-	18,121	51,461
Total	**$ 687,838**	**$ 342,646**	**$ 4,675**	**$ 30,969**	**$ 1,066,128**	**$ 192,773**	**$ 78,317**	**$ 552**	**$ 8,287**	**$ 279,928**	**$ 1,346,056**
Actuarial Liability											
Actives	$ 94,900	$ 178,813	$ 1,024	$ 4,312	$ 279,050	$ 28,296	$ 40,535	$ 112	$ 984	$ 69,926	$ 348,976
Deferred Members	15,072	24,052	122	159	39,405	2,261	5,819	3	73	8,156	47,561
Retirees	518,549	58,701	5	-	577,255	106,911	4,158	-	-	111,069	688,324
Disabled	18,440	5,763	-	-	24,203	35,423	5,247	-	-	40,669	64,872
Beneficiaries	31,552	1,789	-	-	33,340	17,527	594	-	-	18,121	51,461
Total	**$ 678,513**	**$ 269,118**	**$ 1,152**	**$ 4,471**	**$ 953,253**	**$ 190,418**	**$ 56,354**	**$ 114**	**$ 1,056**	**$ 247,942**	**$ 1,201,195**

SECTION IV – CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this Plan, the actuarial funding method used to determine the normal cost and the Unfunded Actuarial Liability is the **Entry Age Normal (EAN)** cost method. There are three primary components to the total contribution: the **normal cost rate** (employee and employer), the **Unfunded Actuarial Liability rate** (UAL rate), and the **administrative expense rate**.

The normal cost rate is determined in the following steps. First, an individual normal cost rate is determined by taking the value, as of entry age into the Plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of the member's expected future salary producing a normal cost rate that should remain relatively constant over a member's career.

The total normal cost is computed by adding the expected dollar amount of each active member's normal cost for the current year- known as the Individual Entry Age Method. The total normal cost is adjusted with interest to the middle of the year, to reflect the fact that the normal cost contributions are paid throughout the year as member payroll payments are made. Finally, the total normal cost rate, calculated by dividing the total normal cost by expected payroll of the closed group, is reduced by the member contribution rate to produce the employer normal cost rate.

Starting with the June 30, 2014 valuation, the Unfunded Actuarial Liability (UAL) is the difference between the EAN Actuarial Liability and the Market Value of Assets. The Unfunded Actuarial Liability payment is determined as the amount needed to fund the outstanding Unfunded Actuarial Liability as of June 30, 2013 over a closed period with 16 years remaining, as a level percentage of pay. Any subsequent unexpected change in the Unfunded Actuarial Liability after June 30, 2013 is amortized over 24 years (22 years for assumption changes) that includes a five-year phase-in/out (three years for assumption changes) of the payments/credits for each annual layer.

The administrative expenses are assumed to be $2.20 million for the current Plan year, and are expected to increase by the inflation rate in future years.

SECTION IV – CONTRIBUTIONS

The tables below present the employer contribution rates for the Plan for this valuation.

Table IV-1
Development of the Net Employer Contribution Rate as of June 30, 2016 for FYE 2018

	June 30, 2016	June 30, 2015
1. Total Normal Cost Rate	17.29%	16.45%
2. Member Contribution Rate[1]	7.98%	7.67%
3. Employer Normal Cost Rate (1-2)	9.31%	8.78%
4. UAL Amortization Rate	39.73%	39.92%
5. Administrative Expense Rate	1.54%	1.32%
6. Net Employer Contribution Rate (3+4+5)	50.58%	50.02%

[1] *Not including member's share of administrative expenses.*

SECTION IV – CONTRIBUTIONS

Table IV-2
FYE 2018 Net Employer Contribution Rate by Group

	General					Safety					All
	Tier 1	Tier 2	Tier 3	Tier 4	Total	Tier 1	Tier 2	Tier 3	Tier 4	Total	Total
County											
1. Total Normal Cost Rate	21.79%	17.33%	13.35%	11.49%	16.23%	29.82%	22.27%	19.18%	18.88%	22.57%	17.29%
2. Member Contribution Rate[1]	10.39%	8.34%	5.65%	5.75%	7.83%	10.68%	8.20%	7.99%	9.44%	8.76%	7.98%
3. Employer Normal Cost Rate (1-2)	11.40%	8.99%	7.70%	5.74%	8.40%	19.14%	14.07%	11.19%	9.44%	13.81%	9.31%
4. UAL Amortization Rate	37.94%	37.94%	37.94%	37.94%	37.94%	48.76%	48.76%	48.76%	48.76%	48.76%	39.73%
5. Administrative Expense Rate	1.55%	1.47%	1.43%	1.37%	1.46%	2.13%	1.97%	1.88%	1.83%	1.96%	1.54%
6. Net Employer Contribution Rate (3+4+5)	**50.89%**	**48.40%**	**47.07%**	**45.05%**	**47.80%**	**70.03%**	**64.80%**	**61.83%**	**60.03%**	**64.53%**	**50.58%**
Cemetery District											
1. Total Normal Cost Rate		13.93%									
2. Member Contribution Rate[1]		7.48%									
3. Employer Normal Cost Rate (1-2)		6.45%									
4. UAL Amortization Rate		37.94%									
5. Administrative Expense Rate		1.39%									
6. Net Employer Contribution Rate (3+4+5)		**45.78%**									

[1] *Not including member's share of administrative expenses.*

SECTION IV – CONTRIBUTIONS

The assets of the Plan are allocated between the General and Safety groups based on their share of the liability for non-active members. If the assets of the Plan exceed the liabilities of the non-active members, the remaining assets are allocated between the General and Safety groups based on their share of the liabilities for active members.

Table IV-3
Development of UAL Amortization Rates for FYE 2018

	General	Safety	Total
1. Unfunded Actuarial Liability (UAL)	$ 423,193,711	$ 107,985,821	$ 531,179,532
2. UAL Amortization (see table IV-4)	$ 38,941,598	$ 9,936,680	$ 48,878,278
3. Total Payroll	102,637,672	20,380,641	123,018,313
4. UAL Amortization Rate (2 divided by 3)	37.94%	48.76%	39.73%

SECTION IV – CONTRIBUTIONS

The table presents the calculation of the UAL payments for the System.

Table IV-4
Development of Amortization Payment
For the June 30, 2016 Actuarial Valuation

Type of Base	Date Established	Initial Amount	Initial Amortization Years	June 30, 2016 Outstanding Balance	Remaining Amortization Years	Current Phase In/Out Percentage	Amortization Amount	% of Pay	% of Pay After Phase-In
1. Initial UAL	6/30/2013	$ 518,034,325	16	$ 488,524,613	13	100%	$ 49,689,376	40.39%	40.39%
2. (Gain)/Loss Base	6/30/2014	(71,384,203)	24	(78,966,272)	22	60%	(3,742,664)	-3.04%	-5.07%
3. (Gain)/Loss Base	6/30/2015	34,000,650	24	36,041,934	23	40%	1,152,010	0.94%	2.34%
4. (Gain)/Loss Base	6/30/2016	47,466,429	24	47,466,429	24	20%	779,257	0.63%	3.17%
5. (Gain)/Loss Assumption	6/30/2016	38,112,827	22	38,112,827	22	33%	1,000,299	0.81%	2.44%
Total				$ 531,179,532			$ 48,878,278	39.73%	43.27%

The single period equivalent amortization period – i.e. the length of time required to amortize the overall UAL as a level percentage of payroll based on the total current amortization payment – is approximately 15 years.

SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION

The GASB adopted Statement Nos. 67 and 68 replaced GASB Statement Nos. 25 and 27. GASB 67 is effective for periods beginning after June 15, 2013 (first effective for the fiscal year ending June 30, 2014 for the Plan) and GASB 68 is effective for fiscal years beginning after June 15, 2014 (first effective for the fiscal year ending June 30, 2015 for the Employer). The disclosures needed to satisfy the new GASB requirements can be found in the MCERA GASB 67/68 Report as of June 30, 2016.

In accordance with Governmental Finance Officers Association (GFOA) and their recommended checklist for Comprehensive Annual Financial Reports (CAFRSs), we continue to prepare the following disclosures:

Analysis of Financial Experience

This schedule shows the history of gains or losses arising from investment and liability sources, as well as non-recurring items.

Solvency Test

The solvency test shows the portion of actuarial liabilities for active member contributions, inactive members, and the employer financed portion of the active members that are covered by the Actuarial Value of Assets.

Actuarial Balance Sheet

The actuarial balance sheet shows the components of the actuarial liabilities of the Plan and the actuarial assets that are intended to satisfy those liabilities.

SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION

Table V-1
ANALYSIS OF FINANCIAL EXPERIENCE
Gain (or Loss) in Actuarial Liability During Years Ended June 30
Resulting from Differences Between Assumed Experience
and Actual Experience
(in thousands)

	Gain (or Loss) for Year Ending June 30								
Type of Activity	2016	2015	2014	2013	2012	2011	2010	2009	2008
Investment Income and Expenses	$ (52,420)	$ (31,459)	$ 22,058	$ (20,749)	$ (40,054)	$ (30,955)	$ (16,151)	$ (66,987)	$ (48,840)
Combined Liability Experience	8,327	5,096	12,533	(4,199)	(11,401)	13,824	(8,100)	(23,892)	14,186
Gain (or Loss) During Year from Financial Experience	$ (44,093)	$ (26,363)	$ 34,591	$ (24,948)	$ (51,455)	$ (17,131)	$ (24,251)	$ (90,879)	$ (34,654)
Non-Recurring Gain (or Loss) Items	(41,488)	(7,636)	36,803	(49,294)	16,069	12,918	(63,410)	-	-
Composite Gain (or Loss) During Year	$ (85,581)	$ (33,999)	$ 71,394	$ (74,242)	$ (35,386)	$ (4,213)	$ (87,661)	$ (90,879)	$ (34,654)

SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION

Table V-2
SOLVENCY TEST
(dollars in thousands)

Valuation Date June 30,	(A) Active Member Contributions	(B) Retirees And Beneficiaries	(C) Remaining Active Members' Liabilities[1]	Reported Assets[2]	Portion of Actuarial Liabilities Covered by Reported Assets (A)	(B)	(C)
2016 [3]	$ 81,880	$ 804,658	$ 314,657	$ 670,016	100%	73%	0%
2015	78,078	765,738	287,365	672,319	100%	78%	0%
2014	75,582	739,428	281,231	657,325	100%	79%	0%
2013 [4]	73,311	694,137	297,850	547,264	100%	68%	0%
2012 [5]	66,407	632,319	276,882	528,728	100%	73%	0%
2011 [6]	65,723	558,483	309,711	523,980	100%	82%	0%
2010 [7]	64,917	532,695	333,220	509,561	100%	83%	0%
2009	65,126	448,231	296,324	483,145	100%	93%	0%

[1] *Includes deferred members.*

[2] *Actuarial Value of Assets. As of June 30, 2014, the Market Value of Assets is used.*

[3] *Reflects revised economic and demographic assumptions.*

[4] *Reflects revised economic and demographic assumptions.*

[5] *Reflects revised demographic assumptions.*

[6] *Reflects revised EAN methodology and economic assumptions.*

[7] *Reflects revised economic and demographic assumptions.*

Table V-3
Actuarial Balance Sheet as of June 30, 2016

Assets		
1. Market value of assets	$	670,015,824
2. Present value of future contributions by members		69,438,728
3. Present value of future employer contributions for normal cost		75,421,676
4. Present value of other future employer contributions (UAL)		531,179,532
5. **Total actuarial assets**	**$**	**1,346,055,760**
Liabilities		
6. Present value of retirement allowances payable to retired/disabled members and their survivors	$	804,657,805
7. Present value of service retirement allowances payable to presently active members and their survivors		431,405,600
8. Present value of allowances payable to current and future vested terminated and their survivors		81,835,632
9. Present value of disability retirement allowances payable to presently active members and their survivors		17,228,318
10. Present value of death benefits payable on behalf of presently active members		3,475,114
11. Present value of members' contributions to be returned upon withdrawal		7,453,291
12. Special Reserves		-
13. **Total actuarial liabilities**	**$**	**1,346,055,760**

APPENDIX A – MEMBERSHIP INFORMATION

Summary of Participant Data (By Group) as of June 30, 2016	General	Safety	Total
Active Participants			
Number	1,729	311	2,040
Average Age	43.90	38.43	43.06
Average Service	10.02	10.12	10.03
Average Pay	$56,297	$62,363	$57,222
Service Retired			
Number	1,531	189	1,720
Average Age	70.16	65.18	69.61
Average Annual Total Benefit	$30,738	$42,107	$31,988
Beneficiaries & QDROs			
Number	260	67	327
Average Age	75.97	68.96	74.53
Average Annual Total Benefit	$14,933	$27,116	$17,429
Duty Disabled			
Number	54	82	136
Average Age	68.87	62.49	65.02
Average Annual Total Benefit	$25,237	$32,251	$29,466
Non-Duty Disabled			
Number	48	3	51
Average Age	67.79	61.72	67.43
Average Annual Total Benefit	$14,928	$21,221	$15,299
Total Receiving Benefits			
Number	1,893	341	2,234
Average Age	70.86	65.24	70.00
Average Annual Total Benefit	$28,010	$36,608	$29,322
Terminated Vested			
Number	244	31	275
Average Age	50.62	39.52	49.37
Average Service	10.14	9.12	10.03
Transfers			
Number	202	56	258
Average Age	50.40	42.94	48.78
Average Service	17.83	16.96	17.64
Funds on Account			
Number	173	29	202
Average Age	42.78	31.57	41.17
Average Service	1.57	1.35	1.54
Total Deferred			
Number	619	116	735
Average Age	48.36	39.18	46.91
Average Service	10.25	10.97	10.37

APPENDIX A – MEMBERSHIP INFORMATION

Summary of Participant Data (General) as of June 30, 2016	General Tier 1	General Tier 2	General Tier 3	General Tier 4	General Total
Active Participants					
Number	141	1,014	49	525	1,729
Average Age	54.91	46.64	39.45	36.06	43.90
Average Service	24.84	12.46	7.82	1.53	10.02
Average Pay	$79,373	$58,653	$62,404	$44,980	$56,297
Service Retired					
Number	1,248	282	1	N/A	1,531
Average Age	71.11	65.99	57.10	N/A	70.16
Average Annual Total Benefit	$33,473	$18,744	$356	N/A	$30,738
Beneficiaries & QDROs					
Number	242	18	N/A	N/A	260
Average Age	77.23	58.91	N/A	N/A	75.97
Average Annual Total Benefit	$15,364	$9,141	N/A	N/A	$14,933
Duty Disabled					
Number	42	12	N/A	N/A	54
Average Age	71.84	58.45	N/A	N/A	68.87
Average Annual Total Benefit	$24,906	$26,393	N/A	N/A	$25,237
Non-Duty Disabled					
Number	34	14	N/A	N/A	48
Average Age	71.48	58.82	N/A	N/A	67.79
Average Annual Total Benefit	$16,089	$12,109	N/A	N/A	$14,928
Total Receiving Benefits					
Number	1,566	326	1	N/A	1,893
Average Age	72.09	65.01	57.10	N/A	70.86
Average Annual Total Benefit	$30,067	$18,211	$356	N/A	$28,010
Terminated Vested					
Number	72	163	8	1	244
Average Age	57.80	47.65	46.30	53.01	50.62
Average Service	11.01	9.64	12.80	8.65	10.14
Transfers					
Number	54	146	N/A	2	202
Average Age	56.87	48.09	N/A	45.12	50.40
Average Service	27.23	14.56	N/A	3.01	17.83
Funds on Account					
Number	11	94	8	60	173
Average Age	62.19	44.31	31.77	38.28	42.78
Average Service	3.10	1.82	1.89	0.84	1.57
Total Deferred					
Number	137	403	16	63	619
Average Age	57.78	47.03	39.03	38.73	48.36
Average Service	16.77	9.60	7.35	1.03	10.25

APPENDIX A – MEMBERSHIP INFORMATION

Summary of Participant Data (Safety) as of June 30, 2016

	Safety Tier 1	Safety Tier 2	Safety Tier 3	Safety Tier 4	Safety Total
Active Participants					
Number	32	198	4	77	311
Average Age	50.01	39.87	33.45	30.20	38.43
Average Service	23.37	11.39	6.28	1.54	10.12
Average Pay	$84,624	$64,854	$57,483	$46,959	$62,363
Service Retired					
Number	174	15	N/A	N/A	189
Average Age	65.70	59.10	N/A	N/A	65.18
Average Annual Total Benefit	$43,776	$22,752	N/A	N/A	$42,107
Beneficiaries & QDROs					
Number	65	2	N/A	N/A	67
Average Age	69.83	40.37	N/A	N/A	68.96
Average Annual Total Benefit	$27,268	$22,169	N/A	N/A	$27,116
Duty Disabled					
Number	67	15	N/A	N/A	82
Average Age	64.62	52.97	N/A	N/A	62.49
Average Annual Total Benefit	$33,602	$26,218	N/A	N/A	$32,251
Non-Duty Disabled					
Number	2	1	N/A	N/A	3
Average Age	58.19	68.78	N/A	N/A	61.72
Average Annual Total Benefit	$22,253	$19,156	N/A	N/A	$21,221
Total Receiving Benefits					
Number	308	33	N/A	N/A	341
Average Age	66.29	55.47	N/A	N/A	65.24
Average Annual Total Benefit	$37,939	$24,183	N/A	N/A	$36,608
Terminated Vested					
Number	2	29	N/A	N/A	31
Average Age	55.60	38.41	N/A	N/A	39.52
Average Service	12.67	8.88	N/A	N/A	9.12
Transfers					
Number	12	43	N/A	1	56
Average Age	51.91	40.83	N/A	26.10	42.94
Average Service	26.53	14.62	N/A	3.02	16.96
Funds on Account					
Number	N/A	9	2	18	29
Average Age	N/A	36.67	27.60	29.46	31.57
Average Service	N/A	2.55	0.39	0.86	1.35
Total Deferred					
Number	14	81	2	19	116
Average Age	52.44	39.50	27.60	29.29	39.18
Average Service	24.55	11.22	0.39	0.98	10.97

APPENDIX A – MEMBERSHIP INFORMATION

Change in Plan Membership: Total

	Actives	Transfers	Non-Vested Terminations	Vested Terminations	Non - Duty Disabled	Duty Disabled	Retired	Beneficiaries & QDROs	Total
July 1, 2015	**1,962**	**265**	**154**	**258**	**49**	**134**	**1,703**	**314**	**4,839**
New Entrants	247	0	0	0	0	0	0	0	247
Rehires	9	(1)	(4)	(3)	0	0	(1)	0	0
Duty Disabilities	(3)	0	0	(1)	0	4	0	0	0
Non-Duty Disabilities	(1)	0	0	(1)	2	0	0	0	0
Retirements	(37)	(13)	(1)	(10)	0	0	61	0	0
Dual Service Retirements	0	0	0	0	0	0	0	0	0
Vested Terminations	(42)	0	0	42	0	0	0	0	0
Transfers	(8)	9	(1)	0	0	0	0	0	0
Non-Vested Terminations with Funds on Account	(40)	(2)	63	0	0	0	0	0	21
Withdrawals Paid	(46)	0	(13)	(8)	0	0	0	0	(67)
Died, With Beneficiary	0	0	0	0	0	(1)	(14)	15	0
Died, Without Beneficiary	(1)	0	0	0	0	(1)	(29)	0	(31)
Beneficiary Deaths	0	0	0	0	0	0	0	(3)	(3)
Domestic Relations Orders	0	0	0	0	0	0	0	1	1
Data Corrections	0	0	4	(2)	0	0	0	0	2
July 1, 2016	**2,040**	**258**	**202**	**275**	**51**	**136**	**1,720**	**327**	**5,009**

APPENDIX A – MEMBERSHIP INFORMATION

Change in Plan Membership: General

	Actives	Transfers	Non-Vested Terminations	Vested Terminations	Non - Duty Disabled	Duty Disabled	Retired	Beneficiaries & QDROs	Total
July 1, 2015	**1,664**	**204**	**134**	**231**	**46**	**53**	**1,518**	**252**	**4,102**
New Entrants	208	0	0	0	0	0	0	0	208
Rehires	8	(1)	(3)	(3)	0	0	(1)	0	0
Duty Disabilities	(1)	0	0	(1)	0	2	0	0	0
Non-Duty Disabilities	(1)	0	0	(1)	2	0	0	0	0
Retirements	(33)	(9)	(1)	(10)	0	0	53	0	0
Dual Service Retirements	0	0	0	0	0	0	0	0	0
Vested Terminations	(34)	0	0	34	0	0	0	0	0
Transfers	(8)	9	(1)	0	0	0	0	0	0
Non-Vested Terminations with Funds on Account	(34)	(1)	53	0	0	0	0	0	18
Withdrawals Paid	(39)	0	(12)	(5)	0	0	0	0	(56)
Died, With Beneficiary	0	0	0	0	0	0	(11)	11	0
Died, Without Beneficiary	(1)	0	0	0	0	(1)	(28)	0	(30)
Beneficiary Deaths	0	0	0	0	0	0	0	(3)	(3)
Domestic Relations Orders	0	0	0	0	0	0	0	0	0
Data Corrections	0	0	3	(1)	0	0	0	0	2
July 1, 2016	**1,729**	**202**	**173**	**244**	**48**	**54**	**1,531**	**260**	**4,241**

APPENDIX A – MEMBERSHIP INFORMATION

Change in Plan Membership: Safety

	Actives	Transfers	Non-Vested Terminations	Vested Terminations	Non - Duty Disabled	Duty Disabled	Retired	Beneficiaries & QDROs	Total
July 1, 2015	**298**	**61**	**20**	**27**	**3**	**81**	**185**	**62**	**737**
New Entrants	39	0	0	0	0	0	0	0	39
Rehires	1	0	(1)	0	0	0	0	0	0
Duty Disabilities	(2)	0	0	0	0	2	0	0	0
Non-Duty Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(4)	(4)	0	0	0	0	8	0	0
Dual Service Retirements	0	0	0	0	0	0	0	0	0
Vested Terminations	(8)	0	0	8	0	0	0	0	0
Transfers	0	0	0	0	0	0	0	0	0
Non-Vested Terminations with Funds on Account	(6)	(1)	10	0	0	0	0	0	3
Withdrawals Paid	(7)	0	(1)	(3)	0	0	0	0	(11)
Died, With Beneficiary	0	0	0	0	0	(1)	(3)	4	0
Died, Without Beneficiary	0	0	0	0	0	0	(1)	0	(1)
Beneficiary Deaths	0	0	0	0	0	0	0	0	0
Domestic Relations Orders	0	0	0	0	0	0	0	1	1
Data Corrections	0	0	1	(1)	0	0	0	0	0
July 1, 2016	**311**	**56**	**29**	**31**	**3**	**82**	**189**	**67**	**768**

APPENDIX A – MEMBERSHIP INFORMATION

Active Member Data by Plan					
Valuation at Year End	**Plan Type**	**Member Count**	**Annual Payroll**	**Average Annual Salary**	**Average Salary Increase**
2007	General	1,917	$85,308,000	$44,501	-0.54%
	Safety	318	$15,281,000	$48,053	-2.47%
	Total	**2,235**	**$100,589,000**	**$45,006**	**-0.81%**
2008	General	1,921	$92,116,000	$47,952	7.75%
	Safety	339	$17,137,000	$50,552	5.20%
	Total	**2,260**	**$109,253,000**	**$48,342**	**7.41%**
2009	General	1,848	$99,266,589	$53,716	12.02%
	Safety	342	$19,363,697	$56,619	12.00%
	Total	**2,190**	**$118,630,286**	**$54,169**	**12.05%**
2010	General	1,708	$94,915,436	$55,571	3.45%
	Safety	330	$19,692,515	$59,674	5.40%
	Total	**2,038**	**$114,607,951**	**$56,235**	**3.81%**
2011	General	1,659	$94,976,978	$57,250	3.02%
	Safety	321	$19,768,859	$61,585	3.20%
	Total	**1,980**	**$114,745,837**	**$57,954**	**3.05%**
2012	General	1,596	$90,706,280	$56,834	-0.73%
	Safety	305	$19,145,091	$62,771	1.93%
	Total	**1,901**	**$109,851,371**	**$57,786**	**-0.29%**
2013	General	1,604	$91,737,348	$57,193	0.63%
	Safety	295	$18,699,145	$63,387	0.98%
	Total	**1,899**	**$110,436,493**	**$58,154**	**0.64%**
2014	General	1,624	$91,704,083	$56,468	-1.27%
	Safety	300	$18,620,870	$62,070	-2.08%
	Total	**1,924**	**$110,324,953**	**$57,341**	**-1.40%**
2015	General	1,664	$93,938,857	$56,454	-0.02%
	Safety	298	$18,397,233	$61,736	-0.54%
	Total	**1,962**	**$112,336,090**	**$57,256**	**-0.15%**
2016	General	1,729	$97,337,917	$56,297	-0.28%
	Safety	311	$19,394,922	$62,363	1.02%
	Total	**2,040**	**$116,732,839**	**$57,222**	**-0.06%**

Payroll figures represent active members' annualized pay rates on June 30.

APPENDIX A – MEMBERSHIP INFORMATION

Retirants and Beneficiaries Added to and Removed from Retiree Payroll										
Fiscal Year	Beginning of Year	Added During Year	Allowances Added	Removed During Year	Allowances Removed	End of Year	Annual Retirement Payroll (in 000s)	Total Allowance Percentage Increase	Average Annual Allowance	Average Allowance Percentage Increase
2005	1,441	109	2,445,000	49	450,000	1,501	24,867,000	9.16%	16,567	4.80%
2006	1,477	98	2,007,000	53	785,000	1,522	27,297,000	9.77%	16,836	1.62%
2007	1,521	136	4,419,000	38	560,000	1,619	31,823,000	16.58%	17,947	6.60%
2008	1,620	105	2,757,000	67	902,000	1,658	34,603,000	8.74%	19,644	9.46%
2009	1,658	105	3,402,523	52	812,828	1,711	37,747,525	9.09%	22,062	12.31%
2010	1,711	171	6,097,956	56	981,465	1,826	43,653,374	15.65%	23,907	8.36%
2011	1,826	103	2,627,234	44	781,283	1,885	46,116,686	5.64%	24,465	2.34%
2012	1,885	175	6,484,652	64	960,185	1,996	52,887,845	14.68%	26,497	8.31%
2013	1,996	103	3,028,612	49	855,980	2,050	56,048,022	5.98%	27,340	3.18%
2014	2,050	116	3,950,045	31	590,636	2,135	60,297,112	7.58%	28,242	3.30%
2015	2,135	100	2,508,828	35	720,242	2,200	63,254,229	4.90%	28,752	1.80%
2016	2,200	68	1,716,361	34	946,189	2,234	65,505,679	3.56%	29,322	1.98%

APPENDIX A – MEMBERSHIP INFORMATION

GENERAL

Count

	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 20	0	0	0	0	0	0	0	0	0	0	0
20 to 25	14	11	0	0	0	0	0	0	0	0	25
25 to 29	69	84	11	0	0	0	0	0	0	0	164
30 to 34	39	117	58	25	1	0	0	0	0	0	240
35 to 39	37	80	59	80	22	0	0	0	0	0	278
40 to 44	18	56	62	56	53	10	0	0	0	0	255
45 to 49	13	26	28	40	55	26	11	0	0	0	199
50 to 54	9	18	32	54	54	32	19	11	0	0	229
55 to 59	6	17	21	42	58	31	23	9	1	0	208
60 to 64	2	10	17	22	34	12	4	3	0	0	104
65 to 69	0	2	6	3	7	1	1	0	0	1	21
70 & up	0	1	1	3	0	0	1	0	0	0	6
Total	207	422	295	325	284	112	59	23	1	1	1,729

Compensation

	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 20	0	0	0	0	0	0	0	0	0	0	0
20 to 25	35,109	39,239	0	0	0	0	0	0	0	0	36,926
25 to 29	40,507	44,045	47,009	0	0	0	0	0	0	0	42,755
30 to 34	42,884	46,851	49,500	55,534	45,985	0	0	0	0	0	47,747
35 to 39	42,542	48,198	59,588	59,610	58,869	0	0	0	0	0	53,991
40 to 44	40,199	48,470	61,613	60,358	62,217	67,302	0	0	0	0	57,288
45 to 49	48,899	54,986	57,190	66,393	67,155	63,605	59,032	0	0	0	61,905
50 to 54	47,140	59,770	50,168	54,698	64,142	60,209	73,870	68,048	0	0	59,396
55 to 59	39,238	59,405	65,387	61,243	63,760	78,817	78,027	88,789	46,987	0	67,177
60 to 64	64,074	88,132	54,818	51,528	60,382	64,728	93,430	80,985	0	0	62,706
65 to 69	0	62,650	67,569	46,271	89,058	164,036	51,008	0	0	100,728	76,605
70 & up	0	43,243	30,313	42,796	0	0	100,058	0	0	0	50,334
Total	41,933	49,167	56,513	58,830	63,980	68,192	74,107	77,851	46,987	100,728	56,297

APPENDIX A – MEMBERSHIP INFORMATION

SAFETY

Count

	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 20	0	0	0	0	0	0	0	0	0	0	0
20 to 25	8	7	0	0	0	0	0	0	0	0	15
25 to 29	10	21	6	0	0	0	0	0	0	0	37
30 to 34	9	10	34	13	0	0	0	0	0	0	66
35 to 39	6	5	25	30	2	0	0	0	0	0	68
40 to 44	1	4	9	17	14	3	0	0	0	0	48
45 to 49	2	0	4	9	15	9	10	0	0	0	49
50 to 54	0	0	4	2	6	5	2	1	0	0	20
55 to 59	1	0	3	0	0	1	1	1	0	0	7
60 to 64	0	0	0	0	0	0	0	0	0	0	0
65 to 69	0	0	1	0	0	0	0	0	0	0	1
70 & up	0	0	0	0	0	0	0	0	0	0	0
Total	37	47	86	71	37	18	13	2	0	0	311

Compensation

	Service										
Age	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	Total
Under 20	0	0	0	0	0	0	0	0	0	0	0
20 to 25	41,324	40,005	0	0	0	0	0	0	0	0	40,709
25 to 29	44,638	47,108	65,232	0	0	0	0	0	0	0	49,379
30 to 34	46,527	51,318	65,523	57,569	0	0	0	0	0	0	59,214
35 to 39	53,224	47,018	61,472	62,714	66,770	0	0	0	0	0	60,385
40 to 44	58,864	60,275	62,570	64,838	74,966	87,437	0	0	0	0	68,274
45 to 49	60,195	0	59,838	60,745	71,693	70,768	87,426	0	0	0	71,286
50 to 54	0	0	53,947	85,282	66,756	78,647	72,370	70,564	0	0	69,771
55 to 59	93,725	0	76,015	0	0	93,187	67,171	181,247	0	0	94,768
60 to 64	0	0	0	0	0	0	0	0	0	0	0
65 to 69	0	0	113,942	0	0	0	0	0	0	0	113,942
70 & up	0	0	0	0	0	0	0	0	0	0	0
Total	48,325	48,057	64,142	62,667	71,865	76,980	83,551	125,906	0	0	62,363

APPENDIX A – MEMBERSHIP INFORMATION

Service Retired Benefits						
	General		Safety		Total	
Current Age	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	0	$0	0	$0	0	$0
25-29	0	$0	0	$0	0	$0
30-34	0	$0	0	$0	0	$0
35-39	0	$0	0	$0	0	$0
40-44	0	$0	1	$49,356	1	$49,356
45-49	0	$0	1	$23,089	1	$23,089
50-54	29	$28,629	22	$46,163	51	$36,192
55-59	140	$30,585	39	$46,018	179	$33,947
60-64	290	$34,806	30	$35,921	320	$34,911
65-69	383	$36,771	49	$47,107	432	$37,944
70-74	303	$29,077	23	$32,048	326	$29,287
75-79	170	$23,890	12	$40,381	182	$24,977
80-84	117	$23,338	5	$45,375	122	$24,241
85-89	57	$24,031	4	$31,334	61	$24,510
90-94	29	$19,443	1	$56,517	30	$20,679
95+	13	$18,096	2	$29,605	15	$19,630
All Ages	1,531	$30,738	189	$42,107	1,720	$31,988

Duty Disabled Benefits						
	General		Safety		Total	
Current Age	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	0	$0	0	$0	0	$0
25-29	0	$0	0	$0	0	$0
30-34	0	$0	0	$0	0	$0
35-39	0	$0	3	$20,630	3	$20,630
40-44	1	$41,533	4	$33,832	5	$35,372
45-49	2	$26,593	1	$49,908	3	$34,365
50-54	2	$39,090	12	$38,603	14	$38,673
55-59	8	$24,648	6	$20,706	14	$22,959
60-64	3	$26,791	19	$28,908	22	$28,619
65-69	13	$26,232	19	$35,201	32	$31,557
70-74	10	$21,494	9	$32,032	19	$26,486
75-79	7	$22,783	9	$33,736	16	$28,944
80-84	4	$17,076	0	$0	4	$17,076
85-89	4	$32,149	0	$0	4	$32,149
90-94	0	$0	0	$0	0	$0
95+	0	$0	0	$0	0	$0
All Ages	54	$25,237	82	$32,251	136	$29,466

APPENDIX A – MEMBERSHIP INFORMATION

Non-Duty Disabled Benefits						
	General		Safety		Total	
Current Age	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	0	$0	0	$0	0	$0
25-20	0	$0	0	$0	0	$0
30-34	0	$0	0	$0	0	$0
35-39	0	$0	0	$0	0	$0
40-44	2	$15,004	0	$0	2	$15,004
45-49	1	$15,021	1	$27,963	2	$21,492
50-54	3	$15,626	0	$0	3	$15,626
55-59	6	$15,859	0	$0	6	$15,859
60-64	8	$15,028	0	$0	8	$15,028
65-69	6	$14,320	2	$17,850	8	$15,203
70-74	9	$12,252	0	$0	9	$12,252
75-79	7	$19,906	0	$0	7	$19,906
80-84	4	$12,926	0	$0	4	$12,926
85-89	2	$11,018	0	$0	2	$11,018
90-94	0	$0	0	$0	0	$0
95+	0	$0	0	$0	0	$0
All Ages	48	$14,928	3	$21,221	51	$15,299

Surviving Beneficiary & QDRO Benefits (all benefit types)						
	General		Safety		Total	
Current Age	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	0	$0	0	$0	0	$0
25-29	1	$1,309	0	$0	1	$1,309
30-34	1	$12,809	0	$0	1	$12,809
35-39	0	$0	1	$36,028	1	$36,028
40-44	5	$6,646	2	$29,916	7	$13,295
45-49	3	$6,786	2	$9,853	5	$8,013
50-54	6	$12,721	5	$12,436	11	$12,592
55-59	20	$10,795	4	$26,915	24	$13,482
60-64	13	$16,500	5	$24,691	18	$18,776
65-69	28	$21,649	14	$35,745	42	$26,348
70-74	27	$18,321	13	$22,971	40	$19,832
75-79	41	$13,573	10	$30,170	51	$16,828
80-84	45	$14,797	5	$31,742	50	$16,491
85-89	33	$13,398	5	$24,458	38	$14,853
90-94	30	$14,415	1	$26,170	31	$14,794
95+	7	$15,764	0	$0	7	$15,764
All Ages	260	$14,933	67	$27,116	327	$17,429

APPENDIX B -- STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the actuarial valuation reflect the results of an Experience Study performed by Cheiron covering the period from July 1, 2013 through June 30, 2016 and adopted by the Board. More details on the rationale for the demographic and economic assumptions can be found in the Experience Analysis dated February 15, 2016.

A. Actuarial Assumptions

1. Rate of Return

Assets are assumed to earn 7.25% net of investment expenses.

2. Administrative Expenses

Administrative expenses are assumed to be $2.20 million for the next year to be allocated between the employer and employees based on each group's share of the non-expense related contributions. Administrative expenses in future years are expected to increase with the Consumer Price Index (CPI).

3. Cost of Living

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 2.50% per year.

4. Post Retirement COLA

Benefits are assumed to increase after retirement at the rate of 2.40% per year for Tier 1 members.

5. Increases in Pay

Wage inflation component: 2.75%
Additional longevity and promotion component:

Years of Service	General	Safety
0-1	7.00%	7.50%
2-3	5.00%	5.00%
4	5.00%	3.00%
5	3.00%	1.50%
6-9	2.00%	1.50%
10-14	1.50%	1.00%
15-19	1.00%	1.00%
20+	0.50%	0.50%

APPENDIX B -- STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

6. Final Average Compensation Load

None

7. Family Composition

50% of female General members, 70% of male General members and 90% of Safety members are assumed to be married at retirement. Male members are assumed to be three years older than their spouses and female members are assumed to be three years younger than their spouses.

8. Rates of Mortality

Mortality rates for actives, retirees, disabled members, beneficiaries, terminated vesteds, and reciprocal transfers are based on the sex-distinct employee and annuitant CalPERS mortality tables as described below. Future mortality improvements are reflected by applying the SOA MP-2016 projection scale on a generational basis from the base year of 2009.

Category	Base Mortality Table
Healthy Annuitant	CalPERS 2009 Healthy Annuitant Mortality Table
Disabled Annuitant	CalPERS 2009 Industrial Disability Mortality Table
Healthy Non-Annuitant	CalPERS 2009 Non-Industrial Employees Mortality Table
Actives, Line of Duty (Safety only)	CalPERS 2009 Industrial Employees Mortality Table

APPENDIX B -- STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

9. Rates of Termination

Sample rates of termination[1] are shown in the following table.

Years of Service	General Male	General Female	Safety
0	22.5%	12.0%	20.8%
5	8.2%	7.5%	4.6%
10	4.5%	3.6%	4.6%
15	4.5%	3.0%	2.5%
20	4.5%	3.0%	0.0%
25	4.5%	3.0%	0.0%
30	0.0%	0.0%	0.0%

[1] *Termination rates do not apply once a member is eligible for retirement.*

There are three types of terminations: withdrawals, reciprocal transfers, and vested terminations. Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits. Rates of reciprocal transfer are for members who leave their member contributions on deposit and engage in employment covered by a pension plan with a reciprocal relationship with MCERA. Finally, rates of vested termination apply to active Members who terminate their employment and leave their member contributions on deposit with the Plan.

The table below shows the percentages of total terminations falling into these categories.

	Years of Service				
	General			Safety	
	0 – 4	5 – 14	15+	0 – 4	5+
Withdrawals	90.0%	40.0%	10.0%	90.0%	30.0%
Transfers	10.0%	10.0%	10.0%	10.0%	25.0%
Vested Terminations	0.0%	50.0%	80.0%	0%	45.0%

Vested terminated General Members are assumed to begin receiving benefits at age 59; vested terminated Safety Members are assumed to begin receiving benefits at age 53. Future reciprocal transfer General members are assumed to begin receiving benefits at age 61; future reciprocal transfer safety members are assumed to begin receiving benefits at age 55. Current reciprocal transfer members are assumed to begin receiving benefits based on the probabilities of retirement applied to the active members.

Future reciprocal transfers' pay growth is assumed to be 3.25% while employed by a reciprocal employer. Current reciprocal transfers' pay growth is assumed to increase according to the assumptions applied to the active members until the assumed retirement age.

APPENDIX B -- STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

10. Rates of Service-Connected Disability

Sample service-connected disability rates of active participants are provided in the table.

	Safety	General	
Age	All	Male	Female
20	0.0000%	0.0027%	0.0040%
25	0.0825%	0.0053%	0.0075%
30	0.2380%	0.0133%	0.0115%
35	0.3940%	0.0240%	0.0150%
40	0.5500%	0.0320%	0.0190%
45	0.7060%	0.0480%	0.0340%
50	0.9230%	0.0640%	0.0600%
55	2.3925%	0.0800%	0.1050%
60	3.0120%	0.1120%	0.1575%
65	3.6385%	0.0000%	0.0000%

11. Rates of Non Service-Connected Disability

Sample non service-connected disability rates of active participants are provided in the table. Rates are applied once members have at least five years of service.

	Safety	General	
Age	All	Male	Female
20	0.0050%	0.0000%	0.0000%
25	0.0050%	0.0267%	0.0033%
30	0.0100%	0.0533%	0.0067%
35	0.0150%	0.0533%	0.0100%
40	0.0200%	0.0867%	0.0133%
45	0.0250%	0.1267%	0.0300%
50	0.0400%	0.1600%	0.0600%
55	0.0650%	0.2133%	0.0933%
60	0.1000%	0.2800%	0.1533%
65	0.1000%	0.0000%	0.0000%

APPENDIX B -- STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

12. Rates of Retirement

Rates of retirement are based on age and service according to the following table.

	General Male			General Female			Safety	
	Years of Service			Years of Service				Years of Service	
Age	10 – 19	20 – 29	30+	10 – 19	20 – 29	30+	Age	10 – 19	20+
50	5.00%	10.00%	7.50%	2.50%	7.50%	25.00%	40	0.00%	3.10%
51	5.00%	10.00%	7.50%	2.50%	7.50%	25.00%	41	0.00%	3.10%
52	5.00%	10.00%	15.00%	5.00%	12.50%	25.00%	42	0.00%	3.10%
53	5.00%	10.00%	15.00%	5.00%	12.50%	25.00%	43	0.00%	3.10%
54	5.00%	10.00%	15.00%	5.00%	12.50%	25.00%	44	0.00%	3.10%
55	10.00%	12.50%	27.00%	12.00%	25.00%	35.00%	45	0.00%	7.60%
56	10.00%	12.50%	22.50%	8.50%	25.00%	35.00%	46	0.00%	7.60%
57	10.00%	12.50%	22.50%	8.50%	25.00%	35.00%	47	0.00%	7.60%
58	10.00%	12.50%	22.50%	8.50%	25.00%	35.00%	48	0.00%	7.60%
59	10.00%	12.50%	22.50%	10.00%	30.00%	35.00%	49	0.00%	7.60%
60	20.00%	25.00%	37.50%	15.00%	30.00%	35.00%	50	15.00%	32.90%
61	20.00%	25.00%	37.50%	27.50%	40.00%	45.00%	51	12.80%	32.90%
62	20.00%	25.00%	37.50%	27.50%	40.00%	45.00%	52	12.80%	32.90%
63	20.00%	25.00%	37.50%	27.50%	40.00%	45.00%	53	12.80%	32.90%
64	20.00%	25.00%	37.50%	27.50%	40.00%	45.00%	54	12.80%	32.90%
65	35.00%	50.00%	40.00%	40.00%	50.00%	50.00%	55	25.00%	32.90%
66	35.00%	50.00%	45.00%	45.00%	50.00%	50.00%	56	25.00%	32.90%
67	35.00%	50.00%	50.00%	50.00%	50.00%	50.00%	57	25.00%	32.90%
68	35.00%	50.00%	60.00%	60.00%	60.00%	60.00%	58	25.00%	32.90%
69	35.00%	50.00%	80.00%	80.00%	80.00%	80.00%	59	25.00%	32.90%
70+	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	60	100.00%	100.00%

13. Changes Since Last Valuation

All demographic assumptions were updated based on the most recent experience study covering the period from July 1, 2013 through June 30, 2016. Please refer to the full experience study report for detail on the specific changes.

APPENDIX B -- STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Actuarial Funding Method

The Entry Age Normal actuarial funding method was used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each Member's date of hire and assumed retirement. The Actuarial Liability is the difference between the present value of future benefits and the present value of future normal cost. The Unfunded Actuarial Liability is the difference between the Actuarial Liability and the Actuarial Value of Assets.

The UAL (or Surplus Funding) is amortized as a percentage of the projected salaries of present and future members of MCERA. Effective with the June 30, 2013 valuation, the UAL as of June 30, 2013 is amortized over a closed 16-year period. Effective with the June 30, 2014 valuation, any new sources of UAL due to actuarial gains and losses or method changes is amortized over a closed 24-year period, with five-year ramp up period at the beginning of the period, a four-year ramp down at the end of the period, and 15 years of level payments as a percentage of payroll. Assumption changes will be amortized over a closed 22-year period, with a three-year ramp up period, two-year ramp down period, and 17 years of level payments as a percentage of payroll. This method is a type of direct rate smoothing method.

2. Asset Valuation Method

As of June 30, 2014, the Market Value of Assets is used to determine the System's UAL.

3. Changes Since Last Valuation

None

APPENDIX C – SUMMARY OF PLAN PROVISIONS

A. Definitions

Compensation: Compensation means the cash remuneration for services paid by the employer. It includes base pay and certain differential, incentive, and special pay allowances defined by the Board of Retirement. Overtime is excluded, with the exception of overtime paid under the Fair Labor Standards Act that is regular and recurring.

PEPRA: For members joining the Plan on and after January 1, 2013 (Tier 4 Members), only pensionable compensation up to the Social Security Taxable Wage Base ($113,700 for 2013) will count for computing Plan benefits and employee contributions and employer contributions for those participating in Social Security. For those not participating in Social Security, the compensation cap is 120% of the Taxable Wage Base ($136,440 for 2013.) In future years, the cap on pensionable compensation will increase with the increase in the CPI-U, rather than the increase in the Taxable Wage Base. In addition, it is possible that some sources of compensation, such as any payments deemed to be terminal or special pays, may be excluded from benefit and contribution computations for Tier 4 Members.

Credited Service: In general, Credited Service is earned for the period during which Member Contributions are paid. One year of service credit is earned for each 2,080 hours worked (not including overtime), not to exceed one year of service per year.

Temporary service for which the Member was not credited, or service for which the Member withdrew his or her Member Contributions, may be purchased by paying or repaying the Member Contributions with interest. The categories of services for which credit may be purchased are listed below:

Prior Part-Time Service: If a Member worked for an employer within the Association on a part-time or 'extra help' basis before his membership in the Retirement Association, the Member may buyback this service.

Intermittent Part-Time Service.

Prior Full-Time Service: Member may buyback full-time service that may have been cashed out upon termination.

Leave of Absence (Including Absence with State Disability or Worker's Compensation): No unpaid leave of absence can be bought back except for absence due to medical reasons up to one year.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Public Service: Members may purchase service credit for prior service in the following public agencies: Federal Civil Service, Military Service, and some public employers in California. This service is only eligible for purchase when the Board of Supervisors opens the window for purchase.

Military Time: Members who resign or obtain a leave of absence to enter the military may purchase service credit for the period of military service. Members must re-enter employment within one year of terminating military service to be eligible to purchase service.

At retirement, Members have the option to convert 100% of sick leave time into retirement years of service credit. Unrepresented Management and Unit 7 will instead have some or all of their sick leave contributed to the Post Employment Health Plan.

Final Compensation: For Tier 1 Members, Final Compensation means the highest average Compensation earned during any 26 consecutive pay periods of the Member's employment. For Tier 2 and Tier 3 Members, Final Compensation means the highest average Compensation earned during any 78 consecutive pay periods of the Member's employment.

The following compensation may be included in the Final Compensation computation:

- Loyalty Bonus
- Up to 160 hours of vacation payoff
- Sick Leave sold back during 25^{th} pay period
- Vacation sold back during 25^{th} pay period (management only)

PEPRA: For Tier 4 Members, highest average Compensation will be based on the highest 36 consecutive months of the Member's employment.

General Member: Any Member who is not a Safety Member is a General Member.

Public Service: During designated periods of time authorized by the County Board of Supervisors, Members may elect to purchase Public Service for time spent while employed in another recognized public agency. The public agency must have a reciprocal agreement with the Plan or be one of several specified municipalities, counties, special districts, or State and Federal agencies. Public Service cannot be purchased if it is used for eligibility for another pension.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

The cost to purchase Public Service is twice the Member Contributions and interest applicable for the period of time purchased. Public Service is used to compute benefits, but does not count toward eligibility for benefits or vesting.

Safety Member: Any sworn Member engaged in law enforcement or as a probation officer is a Safety Member.

B. Membership

Eligibility: All full-time and variable-shift permanent employees of Merced County and other participating employers become Members on their first date of service. Membership is mandatory; only elected officials and those entering employment at age 60 or older who are not reciprocal members of another system may choose not to participate.

PEPRA: A New Member is any Member joining the Plan for the first time on or after January 1, 2013. Employees who transfer from and are eligible for reciprocity with another public employer will not be Tier 4 Members if their service in the reciprocal system was under a pre-PEPRA tier. Employees who were Members of MCERA prior to January 1, 2013, experienced a break in service of more than six months, and then were re-employed by a *different* MCERA-participating employer on or after January 1, 2013 will be considered Tier 4 Members for all subsequent service.

Member Contributions: Each Member contributes a percentage of Compensation to the Plan through a pre-tax payroll deduction. The percentage contributed depends on the Member's age upon joining the Plan. Complete Rates are shown in Appendix D.

Members covered by Social Security have their contributions reduced by one-third on the first $161.54 of biweekly Compensation. General Members who joined the Plan prior to March 7, 1973, and who have earned 30 years of Credited Service do not contribute; Safety Members do not contribute after earning 30 years of Credited Service.

PEPRA: Tier 4 Members must contribute half of the normal cost of the Plan. Contributions for these Members will be based on the Normal Cost associated with their benefits; General and Safety members will pay different Rates.

Tier 4 Members will pay a single contribution rate, not a rate based on entry age. All Tier 4 Members are expected to continue contributing after earning 30 years of service.

Interest is credited semi-annually to each Member's accumulated contributions. The crediting rate is set by the Board, and will fluctuate between zero and two percent less than the assumed rate of return (currently 7.25% - 2.00% = 5.25%), based in part on the investment earnings during that period.

C. Service Retirement:

Eligibility: Tier 1 General Members are eligible to retire at age 50 if they have earned 10 years of Credited Service. Tier 1 General Members hired prior to December 31, 1978, may retire upon reaching age 65 with no service requirement.

Tier 2 and Tier 3 General Members are eligible to retire at age 55 if they have earned 10 years of Credited Service or upon reaching age 70 with no service requirement.

Alternatively, all Tier 1, 2 and 3 General Members are eligible to retire at any age after having earned 30 years of Credited Service, or upon reaching age 70 with no service requirement.

Safety Members are eligible to retire at age 50 if they have earned 10 years of Credited Service. Alternatively, Safety Members are eligible to retire at any age after having earned 20 years of Credited Service, or upon reaching age 70 with no service requirement. All Tier 1, 2, and 3 Safety Members hired prior to December 31, 1978, may retire upon reaching age 65 with no service requirement.

PEPRA: Tier 4 General Members are eligible to retire upon attaining age 52 and completing five or more years of service. Tier 4 Safety Members are eligible to retire upon attaining age 50 and completing five or more years of service. Tier 4 Members are eligible to retire, regardless of service, after attaining age 70.

Benefit Amount: The Service Retirement Benefit payable to the Member is equal to the Member's Final Compensation multiplied by credited service, the benefit factor from Table 1, and the age factor from Table 2 corresponding to the Member's code section. The appropriate code sections for each group are listed in Table 1. For General Members in the Merced County Cemetery District and those in Deferred Inactive Reciprocity status prior to March 15, 2005, benefits are calculated using the formula in Government Code Section 31676.11 or 31676.1.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

For Tiers 1, 2 and 3, the percentage of Final Compensation may not exceed 100%. For those members integrated with Social Security, Retirement Benefits based on the first $350 of monthly Final Average Compensation are reduced by one-third.

Table 1:

Group	Open or Closed	FAP	Max COLA	Code Section	Description	Top Retirement Factor Age	Benefit Factor
General Tier 1	Closed	1	3	31676.17	3% at 60	60	2.00%
General Tier 2	Closed	3	0	31676.17	3% at 60	60	2.00%
General Tier 2 (Cemetery)	Closed	3	0	31676.11	2% at 58 1/2	65	1.67%
General Tier 3	Closed	3	0	31676.1	2.43% at 65	65	1.67%
General Tier 4	Open	3	0	7522.20(a)	PEPRA	67	1.00%
Safety Tier 1	Closed	1	3	31664.1	3% at 50	50	3.00%
Safety Tier 2	Closed	3	0	31664.1	3% at 50	50	3.00%
Safety Tier 3	Closed	3	0	31664	2% at 50	55	2.00%
Safety Tier 4	Open	3	0	7522.25(d)	PEPRA	57	1.00%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Table 2:

Age	General 3% @ 60 CERL: 31676.17	General 2% @ 58 1/2 CERL: 31676.11	General 2.43% @ 65 CERL: 31676.1	General PEPRA GC: 7522.20(a)	Safety 3% @ 50 CERL: 31664.1	Safety 2% @ 50 CERL: 31664	Safety PEPRA GC: 7522.25(d)
41	N/A	N/A	N/A	N/A	0.6258	0.6258	N/A
42	N/A	N/A	N/A	N/A	0.6625	0.6625	N/A
43	N/A	N/A	N/A	N/A	0.7004	0.7004	N/A
44	N/A	N/A	N/A	N/A	0.7397	0.7397	N/A
45	N/A	N/A	N/A	N/A	0.7805	0.7805	N/A
46	N/A	N/A	N/A	N/A	0.8226	0.8226	N/A
47	N/A	N/A	N/A	N/A	0.8678	0.8678	N/A
48	N/A	N/A	N/A	N/A	0.9085	0.9085	N/A
49	N/A	N/A	N/A	N/A	0.9522	0.9522	N/A
50	1.0000	0.7454	0.7091	N/A	1.0000	1.0000	2.0000
51	1.0500	0.7882	0.7457	N/A	1.0000	1.0516	2.1000
52	1.1000	0.8346	0.7816	1.0000	1.0000	1.1078	2.2000
53	1.1500	0.8850	0.8181	1.1000	1.0000	1.1692	2.3000
54	1.2000	0.9399	0.8556	1.2000	1.0000	1.2366	2.4000
55	1.2500	1.0000	0.8954	1.3000	1.0000	1.3099	2.5000
56	1.3000	1.0447	0.9382	1.4000	1.0000	1.3099	2.6000
57	1.3500	1.1048	0.9846	1.5000	1.0000	1.3099	2.7000
58	1.4000	1.1686	1.0350	1.6000	1.0000	1.3099	2.7000
59	1.4500	1.2365	1.0899	1.7000	1.0000	1.3099	2.7000
60	1.5000	1.3093	1.1500	1.8000	1.0000	1.3099	2.7000
61	1.5000	1.3608	1.1947	1.9000	1.0000	1.3099	2.7000
62	1.5000	1.4123	1.2548	2.0000	1.0000	1.3099	2.7000
63	1.5000	1.4638	1.3186	2.1000	1.0000	1.3099	2.7000
64	1.5000	1.5153	1.3865	2.2000	1.0000	1.3099	2.7000
65	1.5000	1.5668	1.4593	2.3000	1.0000	1.3099	2.7000
66	1.5000	1.5668	1.4593	2.4000	1.0000	1.3099	2.7000
67	1.5000	1.5668	1.4593	2.5000	1.0000	1.3099	2.7000

Form of Benefit: The Service Retirement Benefit will be paid monthly beginning at retirement and for the life of the Member. If the member selects the unmodified benefit form, in the event of the Member's death 60% of the benefit will continue for the life of the Member's eligible spouse, domestic partner, or to the age of majority of dependent minor children if there is no eligible spouse or domestic partner. To be eligible to receive this benefit, a surviving spouse or domestic partner must be married or state-registered at least one year prior to retirement. In the event there is no eligible surviving spouse, domestic partner, or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Annually on April 1, Tier 1 benefits are increased to reflect increases in the CPI for the San Francisco Bay Area. Annual increases may not exceed 3%, but CPI increases in excess of 3% are "banked" and used for future increases when the CPI increases by less than 3%.

A lump sum benefit of $3,000 will be payable upon the death of a retired member.

D. Service-Connected Disability

Eligibility: Members are eligible for Service-Connected Disability Retirement benefits at any age if they are permanently disabled as a result of injuries or illness sustained in the line of duty.

Benefit Amount: The Service-Connected Disability Retirement Benefit payable to Members is equal to the greater of 50% of their Final Compensation or – if the Member is eligible at disability for a Service Retirement Benefit – the Service Retirement Benefit accrued on the date of disability.

Members who return to work at a different position with lower pay may receive a Supplemental Disability Allowance that, when added to their new pay, may bring the Member's total income up to the current pay for his or her position at the time of disability. The Supplemental Disability Allowance may not exceed the Service-Connected Disability Retirement benefit.

Form of Benefit: The Service-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement and for the life of the Member; in the event of the Member's death, 100% of the benefit will continue for the life of the Member's eligible spouse, domestic partner, or to the age of majority of dependent minor children if there is no eligible spouse or domestic partner. In the event there is no eligible surviving spouse, domestic partner, or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, Tier 1 benefits are increased to reflect increases in the CPI for the San Francisco Bay Area. Annual increases may not exceed 3%, but CPI increases in excess of 3% are "banked" and used for future increases when the CPI increases by less than 3%.
A lump sum benefit of $3,000 will be payable upon the death of a retired member.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

E. Non Service-Connected Disability

Eligibility: Members are eligible for Non Service-Connected Disability Retirement benefits if they are permanently disabled at any age after earning five years of Credited Service or after becoming eligible for a deferred vested benefit.

Benefit Amount: The Non Service-Connected Disability Retirement Benefit payable to General Members is equal to the greatest of:

- 1.5% of Final Compensation at disability multiplied by years of Credited Service at disability,
- 1.5% of Final Compensation at disability multiplied by years of Credited Service projected to age 65, but not to exceed one-third of Final Compensation or,
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

The Non Service-Connected Disability Retirement Benefit payable to Safety Members is equal to the greatest of:

- 1.8% of Final Compensation at disability multiplied by years of Credited Service at disability,
- 1.8% of Final Compensation at disability multiplied by years of Credited Service projected to age 55, but not to exceed one-third of Final Compensation or,
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

Members who return to work at a different position with lower pay may receive a Supplemental Disability Allowance that, when added to their new pay, may bring the Member's total income up to the current pay for his or her position at the time of disability. The Supplemental Disability Allowance may not exceed the Non Service-Connected Disability Retirement benefit.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Form of Benefit: The Non Service-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement, and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's eligible spouse, domestic partner, or to the age of majority of dependent minor children if there is no spouse. In the event there is no eligible surviving spouse, domestic partner, or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, Tier 1 benefits are increased to reflect increases in the CPI for the San Francisco Bay Area. Annual increases may not exceed 3%, but CPI increases in excess of 3% are "banked" and used for future increases when the CPI increases by less than 3%.

A lump sum benefit of $3,000 will be payable upon the death of a retired member.

F. Service-Connected Death

Eligibility: A Member's survivors are eligible to receive Service-Connected Death benefits if the Member's death resulted from injury or illness sustained in connection with the Member's duties.

Benefit Amount: The Service-Connected Death benefit payable to an eligible surviving spouse, domestic partner, or minor children will be 50% of the Member's Final Compensation.

Furthermore, for Safety Members only, there will be an additional lump sum benefit of 12 months of pay at the time of death. An additional benefit of 25% of the above basic benefit will be paid for the first minor child, 15% for the second, and 10% for the third.

Form of Benefit: The Service-Connected Death Benefit will be paid monthly beginning at the Member's death and for the life of the eligible surviving spouse, domestic partner, or to the age of majority of dependent minor children if there is no eligible surviving spouse or domestic partner.

Annually on April 1, Tier 1 benefits are increased to reflect increases in the CPI for the San Francisco Bay Area. Annual increases may not exceed 3%, but CPI increases in excess of 3% are "banked" and used for future increases when the CPI increases by less than 3%.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

G. Non Service-Connected Death

Eligibility: A Member's survivors are eligible to receive Non Service-Connected Death benefits if the Member's death arose from causes unrelated to the Member's duties.

Benefit Amount: In the event the Member had earned fewer than five years of Credited Service and has no or insufficient reciprocity service from another system, the Non Service-Connected Death benefit will be a refund of the Member's accumulated contributions with interest plus a payment of one month of Final Compensation for each year of Credited Service, not to exceed six months.

In the event the Member had earned five or more years of Credited Service, the Non Service-Connected Death benefit payable to an eligible surviving spouse, domestic partner, or minor children will be 60% of the amount the Member would have received as a Non Service-Connected Disability Retirement Benefit on the date of death.

Form of Benefit: For Members who had earned fewer than five years of Credited Service at death, the benefit will be paid as a lump sum.

For Members with five or more years of Credited Service, the Non Service-Connected Death Benefit will be paid monthly beginning at the Member's death and for the life of the eligible surviving spouse, domestic partner, or to the age of majority of dependent minor children if there is no eligible spouse or domestic partner.

Annually on April 1, Tier 1 benefits are increased to reflect increases in the CPI for the San Francisco Bay Area. Annual increases may not exceed 3%, but CPI increases in excess of 3% are "banked" and used for future increases when the CPI increases by less than 3%.

H. Withdrawal Benefit:

Eligibility: A Member is eligible for a Withdrawal Benefit upon termination of employment.

Benefit Amount: The Withdrawal Benefit is a refund of the Member's accumulated Contributions with interest. Upon receipt of the Withdrawal Benefit, the Member forfeits all Credited Service.

Form of Benefit: The Withdrawal Benefit is paid in a lump sum upon election by the Member.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

I. Deferred Vested Benefit:

Eligibility: A Member is eligible for a Deferred Vested Benefit upon termination of employment after earning five years of Credited Service, including reciprocity service from another system. The Member must leave his or her Member Contributions with interest on deposit with the Plan.

Benefit Amount: The Deferred Vested Benefit is computed in the same manner as the Service Retirement Benefit, but it is based on Credited Service and Final Compensation on the date of termination.

Form of Benefit: The Deferred Vested Benefit will be paid monthly beginning at retirement and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's eligible surviving spouse, domestic partner, or to the age of majority of dependent minor children if there is no eligible surviving spouse or domestic partner. In the event there is no eligible surviving spouse, domestic partner, or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, Tier 1 benefits are increased to reflect increases in the CPI for the San Francisco Bay Area. Annual increases may not exceed 3%, but CPI increases in excess of 3% are "banked" and used for future increases when the CPI increases by less than 3%.

A lump sum benefit of $3,000 will be payable upon the death of a retired member.

J. Reciprocal Benefit:

Eligibility: A Member is eligible for a Reciprocal Benefit upon termination of employment and entry, within a specified period of time, into another retirement system recognized as a reciprocal system by the Plan. In addition, the Member must leave his or her Member Contributions with interest on deposit with the Plan.

Benefit Amount: The Reciprocal Benefit is computed in the same manner as the Service Retirement Benefit, but it is based on Credited Service on the date of termination and Final Compensation on the date of retirement; Final Compensation is based on the highest of the Compensation earned under this Plan or the reciprocal plan.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Form of Benefit: The Reciprocal Benefit will be paid monthly beginning at retirement and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's eligible surviving spouse, domestic partner, or to the age of majority of dependent minor children if there is no eligible surviving spouse or domestic partner. In the event there is no eligible surviving spouse, domestic partner, or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, Tier 1 benefits are increased to reflect increases in the CPI for the San Francisco Bay Area. Annual increases may not exceed 3%, but CPI increases in excess of 3% are "banked" and used for future increases when the CPI increases by less than 3%.

A lump sum benefit may be payable upon the death of a retired Member by the last system under which the Member's service was covered.

K. Changes Since Last Valuation

None

APPENDIX D – MEMBER CONTRIBUTION RATES

Contribution Rates

Employee contribution Rates vary by member Group and Tier. For non-PEPRA members, the Rates were updated this year, following an experience study covering the period July 1, 2013 – June 30, 2016. For PEPRA members, the Rates were also re-computed, in accordance with the requirement that employees pay half of the total normal cost rate from the actuarial valuation.

Non-PEPRA Members

- The basic Rates are determined based on Government Code Section 31621.8 for General Tier 1 and Tier 2 members (31621.1 for Tier 2 members under benefit section 31676.11), 31621 for General Tier 3 members, and Section 31639.25 for Safety members. The COLA Rates for members in Tier 1 are determined based on 50% of the normal cost associated with the expected COLA benefits, including joint and survivor benefits, determined for each individual entry age.

- The Rates are determined based on an interest rate of 7.25% per annum, an average salary increase of 2.75% per year (plus service-based increases for merit/longevity), and the CalPERS 2009 Healthy Annuitants & Employees, projected using Projection Scale MP-2016 to 2037. The Rates are blended based on a male/female weighting of 30% male / 70% female for General members, and 70% male / 30% female for Safety members.

- Effective with the June 30, 2013 valuation, an administrative expense load was added to the Rates. The expense load added this year is 3.13%. This load was determined to account for the employees' share of the $2.20 million administrative expense assumption, assuming the employer and employees would share administrative expenses in proportion to their overall share of the contributions. The 3.13% load produces an average increase in the employee Rates of approximately 0.25% of payroll.

PEPRA Members

- Employee contribution Rates are equal to half of the total normal cost rate from the actuarial valuation, determined separately for General and Safety. Due to the passage of SB13, contribution Rates for PEPRA members are not rounded, and will be recomputed each year.

- The same 3.13% load for administrative expenses was applied to the PEPRA Rates.

APPENDIX D – MEMBER CONTRIBUTION RATES

Current Year Contribution Rates (General Non-PEPRA):

	Tier 1						Tier 2		Tier 2 (Cemetry)		Tier 3	
	Basic		COLA		Total		Basic		Basic		Basic	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350
16	4.32%	6.49%	1.04%	1.57%	5.36%	8.06%	4.20%	6.29%	3.50%	5.24%	2.94%	4.40%
17	4.32%	6.49%	1.04%	1.57%	5.36%	8.06%	4.20%	6.29%	3.50%	5.24%	2.94%	4.40%
18	4.32%	6.49%	1.04%	1.57%	5.36%	8.06%	4.20%	6.29%	3.50%	5.24%	2.94%	4.40%
19	4.32%	6.49%	1.04%	1.57%	5.36%	8.06%	4.20%	6.29%	3.50%	5.24%	2.94%	4.40%
20	4.32%	6.49%	1.04%	1.57%	5.36%	8.06%	4.20%	6.29%	3.50%	5.24%	2.94%	4.40%
21	4.43%	6.65%	1.09%	1.64%	5.52%	8.29%	4.30%	6.45%	3.58%	5.38%	3.01%	4.52%
22	4.55%	6.82%	1.13%	1.70%	5.68%	8.52%	4.40%	6.60%	3.67%	5.50%	3.08%	4.63%
23	4.65%	6.98%	1.19%	1.77%	5.84%	8.75%	4.51%	6.77%	3.76%	5.64%	3.17%	4.74%
24	4.77%	7.16%	1.23%	1.84%	6.00%	9.00%	4.62%	6.93%	3.85%	5.78%	3.24%	4.86%
25	4.89%	7.33%	1.27%	1.91%	6.16%	9.24%	4.73%	7.11%	3.94%	5.93%	3.32%	4.98%
26	5.01%	7.52%	1.32%	1.98%	6.33%	9.50%	4.86%	7.28%	4.05%	6.07%	3.40%	5.10%
27	5.14%	7.70%	1.37%	2.05%	6.51%	9.75%	4.97%	7.46%	4.14%	6.22%	3.49%	5.23%
28	5.26%	7.89%	1.41%	2.12%	6.67%	10.01%	5.09%	7.64%	4.24%	6.37%	3.57%	5.35%
29	5.39%	8.09%	1.47%	2.21%	6.86%	10.30%	5.23%	7.84%	4.36%	6.53%	3.66%	5.49%
30	5.53%	8.29%	1.52%	2.28%	7.05%	10.57%	5.35%	8.03%	4.46%	6.69%	3.74%	5.62%
31	5.67%	8.51%	1.57%	2.35%	7.24%	10.86%	5.50%	8.24%	4.58%	6.87%	3.85%	5.76%
32	5.82%	8.72%	1.62%	2.43%	7.44%	11.15%	5.63%	8.45%	4.69%	7.04%	3.94%	5.91%
33	5.97%	8.95%	1.67%	2.51%	7.64%	11.46%	5.76%	8.65%	4.80%	7.21%	4.03%	6.05%
34	6.12%	9.18%	1.72%	2.58%	7.84%	11.76%	5.90%	8.85%	4.92%	7.38%	4.14%	6.21%
35	6.25%	9.37%	1.77%	2.66%	8.02%	12.03%	6.02%	9.03%	5.02%	7.53%	4.24%	6.36%
36	6.38%	9.58%	1.83%	2.74%	8.21%	12.32%	6.16%	9.23%	5.13%	7.69%	4.35%	6.53%
37	6.53%	9.79%	1.89%	2.83%	8.42%	12.62%	6.29%	9.44%	5.24%	7.87%	4.47%	6.69%
38	6.67%	10.00%	1.94%	2.91%	8.61%	12.91%	6.42%	9.63%	5.35%	8.03%	4.57%	6.86%
39	6.82%	10.23%	1.99%	2.99%	8.81%	13.22%	6.55%	9.82%	5.46%	8.18%	4.67%	7.01%
40	6.94%	10.42%	2.03%	3.05%	8.97%	13.47%	6.66%	9.99%	5.55%	8.33%	4.77%	7.16%
41	7.07%	10.61%	2.05%	3.08%	9.12%	13.69%	6.80%	10.19%	5.67%	8.49%	4.88%	7.31%
42	7.21%	10.82%	2.07%	3.11%	9.28%	13.93%	6.92%	10.37%	5.77%	8.64%	4.98%	7.48%
43	7.35%	11.03%	2.09%	3.15%	9.44%	14.18%	7.04%	10.57%	5.87%	8.81%	5.08%	7.63%
44	7.51%	11.26%	2.11%	3.18%	9.62%	14.44%	7.17%	10.76%	5.98%	8.97%	5.19%	7.78%
45	7.63%	11.45%	2.13%	3.21%	9.76%	14.66%	7.29%	10.93%	6.08%	9.11%	5.28%	7.92%
46	7.77%	11.65%	2.15%	3.22%	9.92%	14.87%	7.42%	11.13%	6.18%	9.28%	5.37%	8.06%
47	7.92%	11.88%	2.16%	3.24%	10.08%	15.12%	7.54%	11.31%	6.28%	9.43%	5.48%	8.22%
48	8.10%	12.14%	2.18%	3.26%	10.28%	15.40%	7.61%	11.42%	6.34%	9.52%	5.58%	8.37%
49	8.22%	12.32%	2.19%	3.28%	10.41%	15.60%	7.62%	11.44%	6.35%	9.53%	5.68%	8.52%
50	8.20%	12.30%	2.20%	3.29%	10.40%	15.59%	7.62%	11.43%	6.35%	9.53%	5.78%	8.66%
51	8.20%	12.30%	2.18%	3.27%	10.38%	15.57%	7.58%	11.36%	6.32%	9.47%	5.88%	8.82%
52	8.22%	12.32%	2.13%	3.21%	10.35%	15.53%	7.50%	11.24%	6.25%	9.37%	5.97%	8.96%
53	8.12%	12.18%	2.09%	3.15%	10.21%	15.33%	7.75%	11.62%	6.46%	9.68%	6.02%	9.03%
54	8.01%	12.02%	2.05%	3.08%	10.06%	15.10%	8.01%	12.02%	6.68%	10.02%	6.04%	9.07%
55	7.95%	11.92%	2.01%	3.02%	9.96%	14.94%	7.95%	11.92%	6.63%	9.93%	6.03%	9.05%
56	7.87%	11.81%	1.95%	2.93%	9.82%	14.74%	7.87%	11.81%	6.56%	9.84%	6.00%	9.00%
57	7.80%	11.69%	1.89%	2.84%	9.69%	14.53%	7.80%	11.69%	6.50%	9.74%	5.94%	8.91%
58	7.70%	11.56%	1.83%	2.74%	9.53%	14.30%	7.70%	11.56%	6.42%	9.63%	6.14%	9.21%
59+	7.62%	11.43%	1.77%	2.66%	9.39%	14.09%	7.62%	11.43%	6.35%	9.53%	6.35%	9.53%

APPENDIX D – MEMBER CONTRIBUTION RATES

Current Year Contribution Rates (Safety Non-PEPRA):

	Tier 1						Tiers 2 and 3	
	Basic		COLA		Total		Basic	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350
20	4.88%	7.31%	1.99%	2.99%	6.87%	10.30%	4.72%	7.09%
21	5.00%	7.50%	2.05%	3.08%	7.05%	10.58%	4.84%	7.26%
22	5.12%	7.67%	2.12%	3.19%	7.24%	10.86%	4.96%	7.44%
23	5.24%	7.86%	2.19%	3.28%	7.43%	11.14%	5.08%	7.62%
24	5.37%	8.05%	2.26%	3.38%	7.63%	11.43%	5.20%	7.80%
25	5.50%	8.25%	2.32%	3.49%	7.82%	11.74%	5.33%	7.99%
26	5.63%	8.45%	2.38%	3.58%	8.01%	12.03%	5.46%	8.19%
27	5.78%	8.66%	2.44%	3.67%	8.22%	12.33%	5.59%	8.38%
28	5.91%	8.87%	2.51%	3.76%	8.42%	12.63%	5.72%	8.58%
29	6.06%	9.10%	2.57%	3.86%	8.63%	12.96%	5.85%	8.77%
30	6.18%	9.27%	2.63%	3.94%	8.81%	13.21%	5.96%	8.94%
31	6.31%	9.47%	2.66%	3.99%	8.97%	13.46%	6.08%	9.13%
32	6.44%	9.65%	2.69%	4.04%	9.13%	13.69%	6.20%	9.30%
33	6.57%	9.85%	2.73%	4.09%	9.30%	13.94%	6.33%	9.50%
34	6.70%	10.06%	2.78%	4.18%	9.48%	14.24%	6.47%	9.69%
35	6.84%	10.26%	2.85%	4.27%	9.69%	14.53%	6.59%	9.89%
36	6.98%	10.48%	2.93%	4.39%	9.91%	14.87%	6.73%	10.11%
37	7.14%	10.70%	3.02%	4.53%	10.16%	15.23%	6.88%	10.32%
38	7.29%	10.94%	3.10%	4.66%	10.39%	15.60%	7.02%	10.54%
39	7.47%	11.20%	3.21%	4.81%	10.68%	16.01%	7.17%	10.75%
40	7.60%	11.41%	3.31%	4.97%	10.91%	16.38%	7.29%	10.94%
41	7.76%	11.63%	3.33%	4.99%	11.09%	16.62%	7.44%	11.16%
42	7.92%	11.88%	3.36%	5.04%	11.28%	16.92%	7.60%	11.40%
43	8.10%	12.15%	3.41%	5.12%	11.51%	17.27%	7.73%	11.60%
44	8.31%	12.47%	3.47%	5.20%	11.78%	17.67%	7.82%	11.73%
45	8.45%	12.66%	3.54%	5.30%	11.99%	17.96%	7.84%	11.76%
46	8.45%	12.66%	3.58%	5.36%	12.03%	18.02%	7.79%	11.67%
47	8.47%	12.71%	3.63%	5.45%	12.10%	18.16%	7.69%	11.54%
48	8.34%	12.52%	3.70%	5.55%	12.04%	18.07%	7.95%	11.93%
49+	8.23%	12.34%	3.80%	5.69%	12.03%	18.03%	8.23%	12.34%

APPENDIX D – MEMBER CONTRIBUTION RATES

Prior Year Contribution Rates (General Non-PEPRA):

	Tier 1 Basic		Tier 1 COLA		Tier 1 Total		Tier 2 Basic		Tier 2 (Cemetry) Basic		Tier 3 Basic	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350
16	3.93%	5.90%	0.93%	1.41%	4.86%	7.31%	3.66%	5.49%	3.05%	4.58%	2.48%	3.72%
17	3.93%	5.90%	0.93%	1.41%	4.86%	7.31%	3.66%	5.49%	3.05%	4.58%	2.48%	3.72%
18	3.93%	5.90%	0.93%	1.41%	4.86%	7.31%	3.66%	5.49%	3.05%	4.58%	2.48%	3.72%
19	3.93%	5.90%	0.93%	1.41%	4.86%	7.31%	3.66%	5.49%	3.05%	4.58%	2.48%	3.72%
20	3.93%	5.90%	0.93%	1.41%	4.86%	7.31%	3.66%	5.49%	3.05%	4.58%	2.48%	3.72%
21	4.06%	6.08%	0.98%	1.47%	5.04%	7.55%	3.77%	5.65%	3.14%	4.71%	2.56%	3.83%
22	4.18%	6.27%	1.03%	1.54%	5.21%	7.81%	3.88%	5.83%	3.23%	4.86%	2.63%	3.95%
23	4.30%	6.46%	1.08%	1.61%	5.38%	8.07%	4.00%	6.00%	3.33%	5.00%	2.71%	4.07%
24	4.44%	6.66%	1.12%	1.68%	5.56%	8.34%	4.12%	6.18%	3.43%	5.15%	2.79%	4.19%
25	4.57%	6.85%	1.17%	1.76%	5.74%	8.61%	4.24%	6.37%	3.53%	5.31%	2.88%	4.32%
26	4.72%	7.07%	1.22%	1.84%	5.94%	8.91%	4.38%	6.57%	3.65%	5.48%	2.97%	4.45%
27	4.86%	7.28%	1.27%	1.91%	6.13%	9.19%	4.51%	6.77%	3.76%	5.64%	3.05%	4.58%
28	5.00%	7.51%	1.33%	1.99%	6.33%	9.50%	4.65%	6.98%	3.88%	5.82%	3.15%	4.73%
29	5.16%	7.74%	1.39%	2.08%	6.55%	9.82%	4.80%	7.19%	4.00%	5.99%	3.25%	4.87%
30	5.31%	7.97%	1.44%	2.16%	6.75%	10.13%	4.94%	7.42%	4.12%	6.18%	3.34%	5.01%
31	5.49%	8.23%	1.49%	2.24%	6.98%	10.47%	5.10%	7.64%	4.25%	6.37%	3.44%	5.17%
32	5.66%	8.49%	1.55%	2.33%	7.21%	10.82%	5.25%	7.88%	4.38%	6.57%	3.55%	5.33%
33	5.84%	8.75%	1.61%	2.41%	7.45%	11.16%	5.40%	8.11%	4.50%	6.76%	3.67%	5.50%
34	6.03%	9.04%	1.66%	2.50%	7.69%	11.54%	5.54%	8.31%	4.62%	6.93%	3.77%	5.66%
35	6.15%	9.24%	1.72%	2.58%	7.87%	11.82%	5.67%	8.51%	4.73%	7.09%	3.89%	5.84%
36	6.30%	9.45%	1.78%	2.66%	8.08%	12.11%	5.79%	8.69%	4.83%	7.24%	4.02%	6.02%
37	6.44%	9.67%	1.82%	2.73%	8.26%	12.40%	5.93%	8.90%	4.94%	7.42%	4.14%	6.21%
38	6.59%	9.88%	1.88%	2.82%	8.47%	12.70%	6.05%	9.07%	5.04%	7.56%	4.26%	6.39%
39	6.75%	10.12%	1.92%	2.89%	8.67%	13.01%	6.15%	9.23%	5.13%	7.69%	4.37%	6.54%
40	6.84%	10.26%	1.96%	2.95%	8.80%	13.21%	6.24%	9.35%	5.20%	7.79%	4.47%	6.70%
41	6.93%	10.41%	1.99%	2.99%	8.92%	13.40%	6.32%	9.48%	5.27%	7.90%	4.56%	6.84%
42	7.04%	10.55%	2.01%	3.02%	9.05%	13.57%	6.41%	9.62%	5.34%	8.02%	4.67%	7.01%
43	7.13%	10.70%	2.03%	3.05%	9.16%	13.75%	6.50%	9.75%	5.42%	8.13%	4.76%	7.14%
44	7.23%	10.85%	2.05%	3.08%	9.28%	13.93%	6.60%	9.89%	5.50%	8.24%	4.84%	7.26%
45	7.34%	11.00%	2.07%	3.10%	9.41%	14.10%	6.69%	10.03%	5.58%	8.36%	4.91%	7.37%
46	7.45%	11.17%	2.09%	3.12%	9.54%	14.29%	6.78%	10.17%	5.65%	8.48%	4.98%	7.47%
47	7.55%	11.32%	2.10%	3.14%	9.65%	14.46%	6.88%	10.33%	5.73%	8.61%	5.04%	7.57%
48	7.66%	11.50%	2.11%	3.16%	9.77%	14.66%	6.99%	10.48%	5.83%	8.73%	5.13%	7.68%
49	7.78%	11.67%	2.13%	3.18%	9.91%	14.85%	7.08%	10.62%	5.90%	8.85%	5.19%	7.79%
50	7.91%	11.87%	2.13%	3.20%	10.04%	15.07%	7.16%	10.75%	5.97%	8.96%	5.27%	7.90%
51	8.02%	12.03%	2.09%	3.13%	10.11%	15.16%	7.22%	10.83%	6.02%	9.03%	5.34%	8.01%
52	8.11%	12.15%	2.04%	3.06%	10.15%	15.21%	7.24%	10.87%	6.03%	9.06%	5.41%	8.13%
53	8.13%	12.18%	2.00%	3.00%	10.13%	15.18%	7.51%	11.27%	6.26%	9.39%	5.50%	8.25%
54	8.15%	12.23%	1.95%	2.93%	10.10%	15.16%	7.80%	11.69%	6.50%	9.74%	5.58%	8.37%
55	8.07%	12.10%	1.91%	2.87%	9.98%	14.97%	7.72%	11.58%	6.43%	9.65%	5.64%	8.47%
56	7.98%	11.97%	1.84%	2.76%	9.82%	14.73%	7.63%	11.46%	6.36%	9.55%	5.68%	8.53%
57	7.89%	11.84%	1.78%	2.67%	9.67%	14.51%	7.55%	11.33%	6.29%	9.44%	5.70%	8.56%
58	7.80%	11.70%	1.72%	2.58%	9.52%	14.28%	7.46%	11.19%	6.22%	9.33%	5.92%	8.88%
59+	7.70%	11.55%	1.65%	2.49%	9.35%	14.04%	7.37%	11.05%	6.14%	9.21%	6.13%	9.21%

APPENDIX D – MEMBER CONTRIBUTION RATES

Prior Year Contribution Rates (Safety Non-PEPRA):

	Tier 1						Tiers 2 and 3	
	Basic		COLA		Total		Basic	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350	First $350	Over $350
20	4.90%	7.35%	2.23%	3.35%	7.13%	10.70%	4.53%	6.79%
21	5.02%	7.53%	2.30%	3.45%	7.32%	10.98%	4.64%	6.97%
22	5.16%	7.74%	2.36%	3.54%	7.52%	11.28%	4.77%	7.15%
23	5.29%	7.93%	2.43%	3.65%	7.72%	11.58%	4.89%	7.34%
24	5.42%	8.14%	2.50%	3.74%	7.92%	11.88%	5.02%	7.53%
25	5.57%	8.35%	2.56%	3.83%	8.13%	12.18%	5.15%	7.73%
26	5.72%	8.58%	2.62%	3.92%	8.34%	12.50%	5.29%	7.93%
27	5.87%	8.80%	2.67%	4.01%	8.54%	12.81%	5.43%	8.15%
28	6.03%	9.04%	2.73%	4.10%	8.76%	13.14%	5.58%	8.36%
29	6.20%	9.29%	2.78%	4.18%	8.98%	13.47%	5.72%	8.59%
30	6.36%	9.53%	2.85%	4.26%	9.21%	13.79%	5.88%	8.82%
31	6.53%	9.80%	2.88%	4.32%	9.41%	14.12%	6.04%	9.06%
32	6.72%	10.08%	2.91%	4.37%	9.63%	14.45%	6.22%	9.32%
33	6.91%	10.37%	2.95%	4.43%	9.86%	14.80%	6.36%	9.54%
34	7.12%	10.67%	3.01%	4.52%	10.13%	15.19%	6.48%	9.73%
35	7.22%	10.83%	3.07%	4.60%	10.29%	15.43%	6.59%	9.87%
36	7.33%	10.99%	3.13%	4.71%	10.46%	15.70%	6.69%	10.03%
37	7.45%	11.17%	3.20%	4.80%	10.65%	15.97%	6.79%	10.18%
38	7.56%	11.34%	3.27%	4.90%	10.83%	16.24%	6.89%	10.34%
39	7.68%	11.53%	3.34%	5.01%	11.02%	16.54%	7.00%	10.50%
40	7.81%	11.71%	3.42%	5.14%	11.23%	16.85%	7.12%	10.68%
41	7.94%	11.92%	3.42%	5.14%	11.36%	17.06%	7.22%	10.83%
42	8.10%	12.14%	3.43%	5.15%	11.53%	17.29%	7.30%	10.96%
43	8.17%	12.26%	3.45%	5.18%	11.62%	17.44%	7.39%	11.08%
44	8.26%	12.39%	3.47%	5.21%	11.73%	17.60%	7.46%	11.19%
45	8.35%	12.53%	3.48%	5.23%	11.83%	17.76%	7.50%	11.25%
46	8.48%	12.71%	3.50%	5.25%	11.98%	17.96%	7.51%	11.27%
47	8.46%	12.69%	3.51%	5.27%	11.97%	17.96%	7.49%	11.24%
48	8.43%	12.66%	3.52%	5.28%	11.95%	17.94%	7.78%	11.66%
49+	8.42%	12.64%	3.54%	5.31%	11.96%	17.95%	8.07%	12.09%

APPENDIX D – MEMBER CONTRIBUTION RATES

Current Year Contribution Rates (PEPRA):

PEPRA Rates		
	General	**Safety**
	5.93%	9.74%
Assumptions:		
Interest	7.25%	
Salary	2016 Valuation Scale (service-based, includes inflation at 2.5%)	
Mortality	CalPERS 2009 tables, projected with MP-2016	
Other	Same as June 30, 2016 valuation (see Appendix B)	

Prior Year Contribution Rates (PEPRA):

PEPRA Rates		
	General	**Safety**
	5.27%	8.85%
Assumptions:		
Interest	7.75%	
Salary	2015 Valuation Scale (service-based, includes inflation at 3.00%)	
Mortality	RP-2000 Combined Healthy, projected to 2027 using Scale BB	
Other	Same as June 30, 2015 valuation (see Appendix B)	

APPENDIX E – GLOSSARY

1. **Actuarial Assumptions**

   Assumptions as to the occurrence of future events affecting pension costs such as mortality, withdrawal, disability, retirement, changes in compensation, and Rates of investment return.

2. **Actuarial Cost Method**

   A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a Normal Cost and an Actuarial Liability.

3. **Actuarial Gain (Loss)**

   The difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

4. **Actuarial Liability**

   The portion of the Actuarial Present Value of Projected Benefits which will not be paid by future Normal Costs. It represents the value of the past Normal Costs with interest to the valuation date.

5. **Actuarial Present Value (Present Value)**

   The value as of a given date of a future amount or series of payments. The Actuarial Present Value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made.

6. **Actuarial Valuation**

   The determination, as of a specified date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

APPENDIX E – GLOSSARY

7. Actuarial Value of Assets

The value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an Actuarial Valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values. No longer applicable as of the June 30, 2014 actuarial valuation.

8. Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date, with each value based on the same set of actuarial assumptions.

9. Amortization Payment

The portion of the pension plan contribution that is designed to pay interest and principal on the unfunded actuarial liability in order to pay for that liability in a given number of years.

10. Entry Age Normal Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

11. Funded Ratio

The ratio of the Market Value of Assets to the Actuarial Liabilities.

12. Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses, which is allocated to a valuation year by the Actuarial Cost Method.

13. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of Actuarial Assumptions, taking into account such items as increases in future compensation and service credits.

14. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Market Value of Assets.

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