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August 2016

PEPRA MISCELLANEOUS PLAN OF THE CITY OF MILL VALLEY
(CalPERS ID: 3204916161)
Annual Valuation Report as of June 30, 2015

Dear Employer,

As an attachment to this letter, you will find a copy of the June 30, 2015 actuarial valuation report of the pension plan.

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

- Section 1 contains specific information for the plan including the development of the current and projected employer contributions, and
- Section 2 contains the Risk Pool Actuarial Valuation appropriate to the plan as of June 30, 2015.

Section 2 can be found on the CalPERS website at (www.calpers.ca.gov). From the home page, go to "*Forms & Publications*" and select "*View All*". In the search box, enter "*Risk Pool Report*" and from the results list download the Miscellaneous or Safety Risk Pool Actuarial Valuation Report as appropriate.

Your June 30, 2015 actuarial valuation report contains important actuarial information about your pension plan at CalPERS. Your assigned CalPERS staff actuary, whose signature appears in the Actuarial Certification section on page 1, is available to discuss the report with you after August 31, 2016.

Future Employer Contribution

Fiscal Year	Employer Normal Cost Rate	+	Employer Payment of Unfunded Liability
2017-18	6.908%		$606
2018-19 (projected)	6.9%		$1,458

The exhibit above displays the minimum employer contributions, before any cost sharing, for Fiscal Year 2017-18 along with estimates of the contributions for Fiscal Year 2018-19. The total employer contribution is the sum of a Normal Cost Rate applied to reported payroll plus an Unfunded Liability dollar payment. The estimated contributions for Fiscal Year 2018-19 are based on a projection of the most recent information we have available, including an estimated 0.0 percent investment return for Fiscal Year 2015-16 (based on the year to date return through April 30, 2016).

For a projection of employer contributions beyond Fiscal Year 2018-19, please refer to the "Projected Employer Contributions" in the "Highlights and Executive Summary" section. This 5-year projection of future employer contributions supersedes any previous projections we have provided. The "Risk Analysis" section of the valuation report also contains estimated employer contributions in future years under a variety of investment return scenarios. Member contributions, other than cost sharing, are in addition to the above amounts. The employer contributions in this report do not reflect any cost sharing arrangements you may have with your employees.

The estimates for Fiscal Year 2018-19 also assume that there are no future contract amendments and no liability gains or losses (such as larger than expected pay increases, more retirements than expected, etc.) This is an important assumption because these gains and losses do occur and can have a significant effect on required contributions. Even for the largest plans or pools, such gains and losses can impact the employer's contributions. These gains and losses cannot be predicted in advance so the projected employer contributions are estimates. The actual required employer contribution for Fiscal Year 2018-19 will be provided in next year's valuation report.

Changes since the Prior Year's Valuation

The CalPERS Board of Administration adopted a Risk Mitigation Policy which is designed to reduce funding risk over time. The policy establishes a mechanism whereby CalPERS investment performance that significantly outperforms the discount rate triggers adjustments to the discount rate, expected investment return and strategic asset allocation targets. A minimum excess investment return of 4% above the existing discount rate is necessary to cause a funding risk mitigation event. The policy has no impact on the current year valuation results but is expected to have an impact in future years. More details on the Risk Mitigation Policy can be found on our website.

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

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

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

Sincerely,

ALAN MILLIGAN
Chief Actuary

ACTUARIAL VALUATION
as of June 30, 2015

for the
PEPRA MISCELLANEOUS PLAN
of the
CITY OF MILL VALLEY
(CalPERS ID: 3204916161)

REQUIRED CONTRIBUTIONS
FOR FISCAL YEAR
July 1, 2017 - June 30, 2018

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Section 1

Plan Specific Information for the PEPRA MISCELLANEOUS PLAN of the CITY OF MILL VALLEY

(CalPERS ID: 3204916161)
(Rate Plan: 27457)

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ACTUARIAL CERTIFICATION

Section 1 of this report is based on the member and financial data contained in our records as of June 30, 2015 which was provided by your agency and the benefit provisions under your contract with CalPERS. Section 2 of this report is based on the member and financial data as of June 30, 2015 provided by employers participating in the Miscellaneous Risk Pool to which the plan belongs and benefit provisions under the CalPERS contracts for those agencies.

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

Having relied upon the information set forth in Section 2 of this report and based on the census and benefit provision information for the plan, it is my opinion as the plan actuary that the side fund and other Unfunded Accrued Liability bases as of June 30, 2015 and employer contribution as of July 1, 2017, have been properly and accurately determined in accordance with the principles and standards stated above.

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

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

HIGHLIGHTS AND EXECUTIVE SUMMARY

- **INTRODUCTION**
- **PURPOSE OF SECTION 1**
- **REQUIRED EMPLOYER CONTRIBUTION**
- **PLAN'S FUNDED STATUS**
- **PROJECTED EMPLOYER CONTRIBUTIONS**
- **CHANGES SINCE THE PRIOR YEAR VALUATION**
- **SUBSEQUENT EVENTS**

Introduction

This report presents the results of the June 30, 2015 actuarial valuation of the PEPRA MISCELLANEOUS PLAN of the CITY OF MILL VALLEY of the California Public Employees' Retirement System (CalPERS). This actuarial valuation sets the required employer contributions for Fiscal Year 2017-18.

The CalPERS Board of Administration adopted a Risk Mitigation Policy which is designed to reduce funding risk over time. The policy establishes a mechanism whereby CalPERS investment performance that significantly outperforms the discount rate triggers adjustments to the discount rate, expected investment return and strategic asset allocation targets. A minimum excess investment return of 4% above the existing discount rate is necessary to cause a funding risk mitigation event. The Risk Mitigation Policy does not have an impact on the current year actuarial valuation. More details on the Risk Mitigation Policy can be found on our website.

Purpose of Section 1

This Section 1 report for the PEPRA MISCELLANEOUS PLAN of the CITY OF MILL VALLEY of the California Public Employees' Retirement System (CalPERS) was prepared by the plan actuary in order to:

- Set forth the assets and accrued liabilities of this plan as of June 30, 2015;
- Determine the required employer contribution for this plan for the fiscal year July 1, 2017 through June 30, 2018; and
- Provide actuarial information as of June 30, 2015 to the CalPERS Board of Administration and other interested parties.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68 for a Cost Sharing Employer Defined Benefit Pension Plan. A separate accounting valuation report for such purposes is available from CalPERS and details for ordering are available on our website.

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

California Actuarial Advisory Panel Recommendations

This report includes all the basic disclosure elements as described in the *Model Disclosure Elements for Actuarial Valuation Reports* recommended in 2011 by the California Actuarial Advisory Panel (CAAP), with the exception of including the original base amounts of the various components of the unfunded liability in the Schedule of Amortization Bases shown on page 8.

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

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

Required Employer Contribution

Required Employer Contribution		Fiscal Year 2016-17 [1]		Fiscal Year 2017-18
Employer Normal Cost Rate		**6.930%**		**6.908%**
Plus Either				
1) Monthly Employer Dollar UAL Payment	**$**	**21.99**	**$**	**50.48**
Or				
2) Annual Lump Sum Prepayment Option	**$**	**254**	**$**	**584**

*The total minimum required employer contribution is the **sum** of the Plan's Employer Normal Cost Rate (expressed as a percentage of payroll) **plus** the Employer Unfunded Accrued Liability (UAL) Contribution Amount (billed monthly in dollars). Only the UAL portion of the employer contribution can be prepaid (which must be received in full no later than July 31). Plan Normal Cost contributions will be made as part of the payroll reporting process. If there is contractual cost sharing or other change, this amount will change. § 20572 of the Public Employees' Retirement Law assesses interest at an annual rate of 10 percent if a contracting agency fails to remit the required contributions when due.*

		Fiscal Year 2016-17 [1]		Fiscal Year 2017-18
Development of Normal Cost as a Percentage of Payroll				
Base Total Normal Cost for Formula		12.805%		12.783%
Surcharge for Class 1 Benefits[3]				
a) PRSA		0.625%		0.625%
Phase out of Normal Cost Difference[4]		0.000%		0.000%
Plan's Total Normal Cost		13.430%		13.408%
Plan's Employee Contribution Rate		6.500%		6.500%
Employer Normal Cost Rate		6.930%		6.908%
Projected Payroll for the Contribution Fiscal Year	$	1,158,176	$	1,836,685
Estimated Employer Contributions Based on Projected Payroll				
Plan's Estimated Employer Normal Cost	$	80,258	$	126,878
Plan's Payment on Amortization Bases[2]		264		606
Total Employer Contribution[5]	$	80,522	$	127,484

[1] The results shown for Fiscal Year 2016-17 reflect the prior year valuation and do not take into account any lump sum payment, side fund payoff, or rate adjustment made after June 30, 2015.

[2] See page 8 for a breakdown of the Amortization Bases.

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

[4] The normal cost difference is phased out over a five year period. The phase out of normal cost difference is 100 percent for the first year of pooling, and is incrementally reduced by 20 percent of the original normal cost difference for each subsequent year. This is non-zero only for plans that joined a pool within the past 5 years. Most plans joined a pool June 30, 2003, when risk pooling was implemented.

[5] As a percentage of projected payroll the UAL contribution is 0.033 percent for an estimated total employer contribution rate of 6.941 percent.

Plan's Funded Status

		June 30, 2014		June 30, 2015
1. Present Value of Projected Benefits (PVB)	$	1,545,597	$	2,665,527
2. Entry Age Normal Accrued Liability (AL)		147,367		420,439
3. Plan's Market Value of Assets (MVA)		155,381		403,100
4. Unfunded Accrued Liability (UAL) [(2) - (3)]		(8,014)		17,339
5. Funded Ratio [(3) / (2)]		105.4%		95.9%

Projected Employer Contributions

The estimate for Fiscal Year 2018-19 is based on a projection of the most recent information we have available, including an estimated 0.0 percent investment return for Fiscal Year 2015-16 (based on year to date return through April 30, 2016).

The table below shows projected employer contributions (before cost sharing) for the next five fiscal years, ***assuming CalPERS earns 0.0 percent for Fiscal Year 2015-16 and 7.50 percent every fiscal year thereafter***, and assuming that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur between now and the beginning of the projection period.

	Required Contribution	Projected Future Employer Contributions				
Fiscal Year	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Normal Cost %	6.908%	6.9%	6.9%	6.9%	6.9%	6.9%
UAL $	$606	$1,458	$2,360	$3,316	$4,326	$5,007

Changes since the Prior Year's Valuation

Benefits

None. This valuation generally reflects plan changes by amendments effective before the date of the report. Please refer to the "Plan's Major Benefit Options" and Appendix B of Section 2 for a summary of the plan provisions used in this valuation.

Actuarial Methods and Assumptions

None.

Subsequent Events

Risk Mitigation

The CalPERS Board of Administration adopted a Risk Mitigation Policy which is designed to reduce funding risk over time. The policy establishes a mechanism whereby CalPERS investment performance that significantly outperforms the discount rate triggers adjustments to the discount rate, expected investment return and strategic asset allocation targets. A minimum excess investment return of 4% above the existing discount rate is necessary to cause a funding risk mitigation event. More details on the Risk Mitigation Policy can be found on our website.

ASSETS AND LIABILITIES

- **ALLOCATION OF PLAN'S SHARE OF POOL'S EXPERIENCE/ASSUMPTION CHANGE**
- **DEVELOPMENT OF PLAN'S SHARE OF POOL'S MVA**
- **SCHEDULE OF PLAN'S SIDE FUND & OTHER AMORTIZATION BASES**
- **30-YEAR AMORTIZATION SCHEDULE AND ALTERNATIVES**
- **EMPLOYER CONTRIBUTION HISTORY**
- **FUNDING HISTORY**

Allocation of Plan's Share of Pool's Experience/Assumption Change

It is the policy of CalPERS to ensure equity within the risk pools by allocating the pool's experience gains/losses and assumption changes in a manner that treats each employer equitably and maintains benefit security for the members of the System while minimizing substantial variations in employer contributions. The Pool's experience gains/losses and impact of assumption/method changes is allocated to the plan as follows:

1.	Plan's Accrued Liability	$	420,439
2.	Projected UAL balance at 6/30/15		(3,211)
3.	Pool's Accrued Liability	$	13,889,938,645
4.	Sum of Pool's Individual Plan UAL Balances at 6/30/15		2,423,468,906
5.	Pool's 2014/15 Investment & Asset (Gain)/Loss		596,365,421
6.	Pool's 2014/15 Other (Gain)/Loss		(49,030,273)
7.	Plan's Share of Pool's Asset (Gain)/Loss [(1)-(2)]/[(3)-(4)] * (5)		22,034
8.	Plan's Share of Pool's Other (Gain)/Loss [(1)]/[(3)] * (6)		(1,484)
9.	Plan's New (Gain)/Loss as of 6/30/2015 [(7)+(8)]	$	20,550
10.	Increase in Pool's Accrued Liability due to Change in Assumptions		0
11.	Plan's Share of Pool's Change in Assumptions [(1)]/[(3)] * (10)	$	0

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

1.	Plan's Accrued Liability	$	420,439
2.	Plan's UAL	$	17,339
3.	Plan's Share of Pool's MVA [(1)-(2)]	$	**403,100**

Schedule of Plan's Side Fund and Other Amortization Bases

There is a two-year lag between the valuation date and the start of the contribution fiscal year.

- The assets, liabilities, and funded status of the plan are measured as of the valuation date: June 30, 2015.
- The employer contribution determined by the valuation is for the fiscal year beginning two years after the valuation date: Fiscal Year 2017-18.

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

The Unfunded Accrued Liability (UAL) is used to determine the employer contribution and therefore must be rolled forward two years from the valuation date to the first day of the fiscal year for which the contribution is being determined. The UAL is rolled forward each year by subtracting the payment on the UAL for the fiscal year and adjusting for interest.

							Amounts for Fiscal 2017-18	
Reason for Base	**Date Established**	**Amortization Period**	**Balance 6/30/15**	**Payment 2015-16**	**Balance 6/30/16**	**Payment 2016-17**	**Balance 6/30/17**	**Scheduled Payment for 2017-18**
FRESH START	06/30/14	9	$(3,211)	$(5,369)	$2,115	$264	$2,000	$272
NON-ASSET (GAIN)/LOSS	06/30/15	30	$(1,484)	$0	$(1,595)	$0	$(1,715)	$(24)
ASSET (GAIN)/LOSS	06/30/15	30	$22,034	$0	$23,686	$0	$25,463	$358
TOTAL			**$17,339**	**$(5,369)**	**$24,206**	**$264**	**$25,748**	**$606**

The (gain)/loss bases are the plan's allocated share of the risk pool's (gain)/loss for the fiscal year as disclosed on the previous page. These (gain)/loss bases will be amortized according to Board policy over 30 years with a 5-year ramp-up.

If the total Unfunded Liability is negative (i.e., plan has a surplus), the scheduled payment is $0, because the minimum required contribution under PEPRA must be at least equal to the normal cost.

30-Year Amortization Schedule and Alternatives

The amortization schedule on the previous page shows the minimum contributions required according to CalPERS amortization policy. There has been considerable interest from many agencies in paying off these unfunded accrued liabilities sooner and the possible savings in doing so. As a result, we have provided alternate amortization schedules to help analyze the current amortization schedule and illustrate the advantages of accelerating unfunded liability payments.

Shown on the following page are future year amortization payments based on 1) the current amortization schedule reflecting the individual bases and remaining periods shown on the previous page, and 2) alternate "fresh start" amortization schedules using two sample periods that would both result in interest savings relative to the current amortization schedule. Note that the payments under each alternate scenario increase by 3 percent for each year into the future. The schedules do not attempt to reflect any experience after June 30, 2015 that may deviate from the actuarial assumptions. Therefore, future amortization payments displayed in the Current Amortization Schedule may not match projected amortization payments shown in connection with Projected Employer Contributions provided elsewhere in this report.

The Current Amortization Schedule typically contains individual bases that are both positive and negative. Positive bases result from plan changes, assumption changes or plan experience that result in increases to unfunded liability. Negative bases result from plan changes, assumption changes or plan experience that result in decreases to unfunded liability. The combination of positive and negative bases within an amortization schedule can result in unusual or problematic circumstances in future years such as:

- A positive total unfunded liability with a negative total payment,
- A negative total unfunded liability with a positive total payment, or
- Total payments that completely amortize the unfunded liability over a very short period of time

In any year where one of the above scenarios occurs, the actuary will consider corrective action such as replacing the existing unfunded liability bases with a single "fresh start" base and amortizing it over a reasonable period.

The Current Amortization Schedule on the following page may appear to show that, based on the current amortization bases, one of the above scenarios will occur at some point in the future. It is impossible to know today whether such a scenario will in fact arise since there will be additional bases added to the amortization schedule in each future year. Should such a scenario arise in any future year, the actuary will take appropriate action based on guidelines in the CalPERS amortization policy. For purposes of this display, total payments include any negative payments. Therefore, the amount of estimated savings may be understated to the extent that negative payments appear in the current schedule.

30-Year Amortization Schedule and Alternatives

			Alternate Schedules			
	Current Amortization Schedule		25 Year Amortization		20 Year Amortization	
Date	**Balance**	**Payment**	**Balance**	**Payment**	**Balance**	**Payment**
6/30/2017	25,748	606	25,748	1,702	25,748	1,944
6/30/2018	27,051	968	25,914	1,753	25,663	2,002
6/30/2019	28,076	1,351	26,041	1,805	25,512	2,062
6/30/2020	28,781	1,757	26,122	1,860	25,287	2,124
6/30/2021	29,118	2,185	26,153	1,915	24,981	2,188
6/30/2022	29,035	2,251	26,128	1,973	24,585	2,254
6/30/2023	28,879	2,319	26,042	2,032	24,093	2,321
6/30/2024	28,641	2,388	25,889	2,093	23,493	2,391
6/30/2025	28,313	2,460	25,660	2,156	22,776	2,463
6/30/2026	27,886	2,179	25,350	2,220	21,930	2,537
6/30/2027	27,718	2,244	24,949	2,287	20,945	2,613
6/30/2028	27,470	2,312	24,449	2,356	19,807	2,691
6/30/2029	27,134	2,381	23,840	2,426	18,503	2,772
6/30/2030	26,700	2,453	23,112	2,499	17,016	2,855
6/30/2031	26,159	2,526	22,255	2,574	15,333	2,941
6/30/2032	25,502	2,602	21,255	2,651	13,434	3,029
6/30/2033	24,717	2,680	20,100	2,731	11,301	3,120
6/30/2034	23,792	2,760	18,776	2,813	8,914	3,213
6/30/2035	22,715	2,843	17,268	2,897	6,251	3,310
6/30/2036	21,471	2,928	15,559	2,984	3,288	3,409
6/30/2037	20,045	3,016	13,632	3,074		
6/30/2038	18,420	3,107	11,468	3,166		
6/30/2039	16,581	3,200	9,046	3,261		
6/30/2040	14,506	3,296	6,343	3,359		
6/30/2041	12,177	3,395	3,337	3,459		
6/30/2042	9,570	3,497				
6/30/2043	6,663	2,881				
6/30/2044	4,175	2,226				
6/30/2045	2,180	1,528				
6/30/2046	759	787				
Totals		**71,127**		**62,046**		**52,239**
Estimated Savings				**9,082**		**18,889**

Current CalPERS Board policy prioritizes the order for which lump sum contributions in excess of the required employer contribution shall be applied. Excess contributions shall first be applied toward payment on the plan's side fund, and any remainder shall then be applied toward the plan's share of the pool's unfunded accrued liability.

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

Employer Contribution History

The table below provides a recent history of the required employer contributions for the plan, as determined by the annual actuarial valuation. It does not account for prepayments or benefit changes made during a fiscal year.

Fiscal Year	Employer Normal Cost	Unfunded Liability Payment ($)
2016 - 17	6.930%	264
2017 - 18	6.908%	606

Funding History

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

Valuation Date	Accrued Liability (AL)	Share of Pool's Market Value of Assets (MVA)	Plan's Share of Pool's Unfunded Liability	Funded Ratio	Annual Covered Payroll
06/30/2013	$ 3,649	$ 4,896	$ (1,247)	134.2%	$ 445,270
06/30/2014	147,367	155,381	(8,014)	105.4%	1,059,896
06/30/2015	420,439	403,100	17,339	95.9%	1,680,827

RISK ANALYSIS

- ANALYSIS OF FUTURE INVESTMENT RETURN SCENARIOS
- ANALYSIS OF DISCOUNT RATE SENSITIVITY
- VOLATILITY RATIOS
- HYPOTHETICAL TERMINATION LIABILITY

Analysis of Future Investment Return Scenarios

The investment return for Fiscal Year 2015-16 was not known at the time this report was produced. The investment return in Fiscal Year 2015-16 as of April 30, 2016 is 0.0 percent before administrative expenses. For purposes of projecting future employer contributions, we are assuming a 0.0 percent investment return for Fiscal Year 2015-16.

The investment return realized during a fiscal year first affects the contribution for the fiscal year two years later. For example, the investment return for Fiscal Year 2015-16 will first be reflected in the June 30, 2016 actuarial valuation that will be used to set the Fiscal Year 2018-19 employer contributions, the Fiscal Year 2016-17 investment return will first be reflected in the June 30, 2017 actuarial valuation that will be used to set the Fiscal Year 2019-20 employer contributions, and so forth.

A sensitivity analysis was performed to determine the effects of various investment returns during fiscal years 2016-17, 2017-18, and 2018-19 on the employer contributions for fiscal years 2019-20, 2020-21, and 2021-22. The projected contributions assume that all other actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur.

Five different investment return scenarios were selected.

- The first scenario is a -3.8 percent return for each of the 2016-17, 2017-18, and 2018-19 fiscal years. Based on the current investment allocation, this is what one would expect if the markets were to give us about a 5th percentile return from July 1, 2016 through June 30, 2019.
- The second scenario is a 2.8 percent return for each of the 2016-17, 2017-18, and 2018-19 fiscal years. Based on the current investment allocation, this is what one would expect if the markets were to give us about a 25th percentile return from July 1, 2016 through June 30, 2019.
- The third scenario is a 7.5 percent return for each of the 2016-17, 2017-18, and 2018-19 fiscal years. Based on the current investment allocation, this is what one would expect if the markets were to give us about a 49th percentile return from July 1, 2016 through June 30, 2019.
- The fourth scenario is a 12.0 percent return for each of the 2016-17, 2017-18, and 2018-19 fiscal years. Based on the current investment allocation, this is what one would expect if the markets were to give us about a 75th percentile return from July 1, 2016 through June 30, 2019.
- Finally, the last scenario is an 18.9 percent return for each of the 2016-17, 2017-18, and 2018-19 fiscal years. Based on the current investment allocation, this is what one would expect if the markets were to give us about a 95th percentile return from July 1, 2016 through June 30, 2019.

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

2016-19 Investment Return Scenario	**Fiscal Year**			**Estimated Change Between 2018-19 and 2021-22**
	2019-20	**2020-21**	**2021-22**	
(3.8%)				
Normal Cost	6.9%	6.9%	6.9%	0.0%
UAL Contribution	$3,095	$5,532	$8,788	$7,330
2.8%				
Normal Cost	6.9%	6.9%	6.9%	0.0%
UAL Contribution	$2,666	$4,258	$6,264	$4,806
7.5%				
Normal Cost	6.9%	6.9%	6.9%	0.0%
UAL Contribution	$2,360	$3,316	$4,326	$2,868
12.0%				
Normal Cost	6.8%	6.9%	6.9%	0.0%
UAL Contribution	$2,117	$2,543	$2,687	$1,229
18.9%				
Normal Cost	6.9%	7.2%	7.4%	0.5%
UAL Contribution	$1,772	$0	$0	$(1,458)

For the last two scenarios in the table above the results incorporate the impact of CalPERS Risk Mitigation Policy. A 12.0% return would result in a reduction of the discount rate by 0.05% and a return of 18.9% would reduce the discount rate by 0.15%. Reducing the discount rate increases both the plan's accrued liability and normal cost. More details about Risk Mitigation policy can be found on our website.

Analysis of Discount Rate Sensitivity

The following analysis looks at the Fiscal Year 2017-18 total normal cost rates and liabilities under two different discount rate scenarios. Shown below are the total normal cost rates assuming discount rates that are 1 percent lower and 1 percent higher than the current valuation discount rate. This analysis shows the potential plan impacts if the Public Employees' Retirement Fund (PERF) were to realize investment returns of 6.50 percent or 8.50 percent over the long-term.

This analysis is intended to illustrate the long-term risk to the contribution rates.

Sensitivity Analysis			
As of June 30, 2015	**6.50% Discount Rate (-1%)**	**7.50% Discount Rate (assumed rate)**	**8.50% Discount Rate (+1%)**
Plan's Total Normal Cost	16.5%	13.4%	11.0%
Accrued Liability	$489,805	$420,439	$363,590
Unfunded Accrued Liability	$86,705	$17,339	$(39,510)

Volatility Ratios

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

Asset Volatility Ratio (AVR)

Plans that have higher asset-to-payroll ratios experience more volatile employer contributions (as a percentage of payroll) due to investment return. For example, a plan with an asset-to-payroll ratio of 8 may experience twice the contribution volatility due to investment return volatility, than a plan with an asset-to-payroll ratio of 4. Shown below is the asset volatility ratio, a measure of the plan's current contribution volatility. It should be noted that this ratio is a measure of the current situation. It increases over time but generally tends to stabilize as the plan matures.

Liability Volatility Ratio (LVR)

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

Rate Volatility		**As of June 30, 2015**
1. Market Value of Assets	$	403,100
2. Payroll		1,680,827
3. Asset Volatility Ratio (AVR) [(1) / (2)]		0.2
4. Accrued Liability	$	420,439
5. Liability Volatility Ratio (LVR) [(4) / (2)]		0.3

Hypothetical Termination Liability

The hypothetical termination liability is an estimate of the financial position of the plan had the contract with CalPERS been terminated as of June 30, 2015. The plan liability on a termination basis is calculated differently compared to the plan's ongoing funding liability. For the hypothetical termination liability calculation, both compensation and service are frozen as of the valuation date and no future pay increases or service accruals are assumed.

A more conservative investment policy and asset allocation strategy was adopted by the CalPERS Board for the Terminated Agency Pool. The Terminated Agency Pool has limited funding sources since no future employer contributions will be made. Therefore, expected benefit payments are secured by risk-free assets and benefit security for members is increased while funding risk is limited. However, this asset allocation has a lower expected rate of return than the PERF and consequently, a lower discount rate is assumed. The lower discount rate for the Terminated Agency Pool results in higher liabilities for terminated plans.

The effective termination discount rate will depend on actual market rates of return for risk-free securities on the date of termination. As market discount rates are variable, the table below shows a range for the hypothetical termination liability based on the lowest and highest interest rates observed during an approximate 2-year period centered around the valuation date.

Market Value of Assets (MVA)	Hypothetical Termination Liability[1,2] @ 2.00%	Funded Status	Unfunded Termination Liability @ 2.00%	Hypothetical Termination Liability[1,2] @ 3.25%	Funded Status	Unfunded Termination Liability @ 3.25%
$403,100	$318,831	126.4%	$(84,269)	$280,177	143.9%	$(122,923)

For plans where active members have little service the hypothetical termination liability methodology used does not fully vest active members upon termination. In these cases the hypothetical termination liability is understated.

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

[2] The current discount rate assumption used for termination valuations is a weighted average of the 10-year and 30-year U.S. Treasury yields where the weights are based on matching asset and liability durations as of the termination date. The discount rates used in the table are based on 20-year Treasury bonds, rounded to the nearest quarter percentage point, which is a good proxy for most plans. The 20-year Treasury yield was 2.75 percent on June 30, 2015.

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

Participant Data

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

	June 30, 2014	June 30, 2015
Reported Payroll	$ 1,059,896	$ 1,680,827
Projected Payroll for Contribution Purposes	$ 1,158,176	$ 1,836,685
Number of Members		
Active	20	27
Transferred	2	4
Separated	1	3
Retired	0	0

List of Class 1 Benefit Provisions

This plan has the additional Class 1 Benefit Provisions:

- Post-Retirement Survivor Allowance (PRSA)

PLAN'S MAJOR BENEFIT OPTIONS

Plan's Major Benefit Options

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

	Contract package	
Benefit Provision	Active Misc	
Benefit Formula	2.0% @ 62	
Social Security Coverage	No	
Full/Modified	Full	
Employee Contribution Rate	6.50%	
Final Average Compensation Period	Three Year	
Sick Leave Credit	Yes	
Non-Industrial Disability	Standard	
Industrial Disability	No	
Pre-Retirement Death Benefits		
Optional Settlement 2W	Yes	
1959 Survivor Benefit Level	level 3	
Special	No	
Alternate (firefighters)	No	
Post-Retirement Death Benefits		
Lump Sum	$500	
Survivor Allowance (PRSA)	Yes	
COLA	2%	

Section 2

Section 2 may be found on the CalPERS website (www.calpers.ca.gov) in the Forms and Publications section