CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

New Agency Actuarial Valuation

As of October 1, 2017

For the Proposed MISCELLANEOUS PLAN for the TRANSPORTATION AUTHORITY OF MARIN, 2% at 62 MISCELLANEOUS Full Formula with 3-year Final Average Compensation 0% Prior Service

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October 1, 2017

PROPOSED MISCELLANEOUS PLAN FOR TRANSPORTATION AUTHORITY OF MARIN
2% @ 62 MISCELLANEOUS RISK POOL

Dear Employer,

Enclosed please find a copy of the actuarial valuation conducted to determine the contributions necessary should the TRANSPORTATION AUTHORITY OF MARIN elect to participate in the California Public Employees' Retirement System (CalPERS) and adopt the proposed MISCELLANEOUS PLAN. CalPERS staff actuaries are available to discuss the contents of this report with you.

Since your public agency has less than 100 active members, your proposed plan would be required to participate in a risk pool. The following valuation report provides specific information for your proposed plan, including the development of your pooled employer contribution rate, and an appendix with plan provisions and assumptions.

In the event your public agency elects to contract for CalPERS membership, your employees will be entitled to retirement benefits as provided by CalPERS per the Public Employees' Retirement Law. The contract for CalPERS membership will specify that, to the extent, if any, your employees may claim entitlement to additional benefits resulting from prior membership in a different retirement plan, such benefits will be the responsibility of your agency alone, and not of CalPERS.

Actuarial Cost Estimates in General

What will this pension plan cost? Unfortunately, there is no simple answer. There are two major reasons for the complexity of the answer. First, actuarial calculations, including the ones in this report, are based on a number of assumptions about the future. These assumptions can be divided into two categories.

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

While CalPERS has set these assumptions to reflect our best estimate of the real future of your plan, it must be understood that these assumptions are very long-term predictors and will surely not be realized in any one year. For example, while the asset earnings at CalPERS have averaged more than the assumed return of 7.5 percent for the past twenty year period ending June 30, 2014, returns for each fiscal year ranged from negative -24 percent to +21.7 percent.

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

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

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

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

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

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

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

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

Contribution Rates

The actuarially required contribution, both in dollars and as a rate of payroll are shown below.

		Estimated Contribution Amount FY 2017-18	Required Contribution Rate FY 2017-18
1.	Plan's Employer Normal Cost	$ 12,301	6.533%
2.	Plan's Payment on Amortization Bases	0	0.000%
3.	Surcharge for Class 1 Benefits	0	0.000%
4.	Total Employer Share of Contributions	12,301	6.533%
5.	Total Member Share of Contributions	11,768	6.250%

Required Employer Contribution for Fiscal Year 2017-18	
Employer Normal Cost Rate	6.533%
***Plus* Monthly Employer Dollar UAL Amortization Payment**	**$ 0**

		Estimated Contribution Amount FY 2018-19	Required Contribution Rate FY 2018-19
1.	Plan's Employer Normal Cost	$ 17,692	6.842%
2.	Plan's Payment on Amortization Bases	0	0.000%
3.	Surcharge for Class 1 Benefits	0	0.000%
4.	Total Employer Share of Contributions	17,692	6.842%
5.	Total Member Share of Contributions	16,161	6.250%

Required Employer Contribution for Fiscal Year 2018-19		
Employer Normal Cost Rate		**6.842%**
***Plus* Monthly Employer Dollar UAL Amortization Payment**	**$**	**0**

These rates will be in effect for Fiscal Years 2017-18 and 2018-19 unless there are further benefits or funding changes. If the membership or asset information is significantly different at the actual contract date or if the actual contract effective date is delayed beyond the proposed effective date of October 1, 2017 by more than 90 days, the employer contribution rates shown above may have to be recalculated. The contribution rates shown above were based on the results of the June 30, 2015 and June 30, 2016 valuations.

In accordance with PEPRA the member contribution rate shown above is set at 50% of the expected normal cost rate for the benefits that will apply to your safety plan. The first actuarial valuation of the PEPRA risk pools based on actual member data was the June 30, 2014 valuation which was completed the fall of 2015. This valuation established the employer and employee contributions for fiscal year 2016-17. Note that the member contribution rate may change over time if the total normal cost for PEPRA members fluctuates by more than one percent of payroll in future valuations.

In February 2014, the CalPERS Board adopted new demographic actuarial assumptions to be used to set the fiscal year 2016-17 contribution rates for public agency employers.

Rate Volatility

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

The actuarial methods and assumptions used in determining your rate can be found in Section 2, Appendix A. A list of class 1 benefit provisions used in determining your rate is included in Section 1 of the report. A description of these provisions can be found in Section 2, Appendix B.

If your agency would like to consider other benefit formulas or other combinations of benefit provisions, please contact us and we will be pleased to assist you.

Sincerely,

Barbara J. Ware

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

Actuarial Certification

This report was prepared by the Agency Actuary in order to:

- Provide the employer with information about the cost of benefits and the contributions required in order to assist in the decision as to whether or not to contract for the benefits.
- Certify that the actuarially required employer contribution rate of the proposed MISCELLANEOUS PLAN for the TRANSPORTATION AUTHORITY OF MARIN from the effective date of the contract through June 30, 2018 is 6.533% and for the fiscal year commencing July 1, 2018 is 6.842%.

Use of this report for other purposes is inappropriate.

This report is based on the member and financial data as of August 2017 provided by the agency, and the proposed benefits under this contract with CalPERS.

It is my opinion that the valuation has been performed in accordance with generally accepted actuarial principles, in accordance with standards of practice prescribed by the Actuarial Standards Board, and that the assumptions and methods are internally consistent and reasonable for this plan, as prescribed by the CalPERS Board of Administration according to provisions set forth in the California Public Employees' Retirement Law.

Barbara J. Ware

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

Section 1

Plan Specific Information for
The Proposed MISCELLANEOUS PLAN for
TRANSPORTATION AUTHORITY OF MARIN

Funding Information

- **REQUIRED EMPLOYER CONTRIBUTION**
- **PLAN'S UNFUNDED LIABILITY**
- **SUMMARY OF PARTICIPANT DATA**
- **LIST OF CLASS 1 BENEFIT PROVISIONS**
- **SUBSEQUENT EVENTS**
- **SUMMARY OF MAJOR BENEFIT OPTIONS**

Required Employer Contribution

As part of a risk pool, your employer contribution rate will be the sum of the parts shown below. Unless there are further benefit or funding changes, your required employer contribution rate will be 6.533% from the effective date of the contract through June 30, 2018 and 6.842% from July 1, 2018 through June 30, 2019.

		Estimated Contribution Amount FY 2017-18[2]	Required Contribution Rate FY 2017-18
1.	Plan's Employer Normal Cost	$ 12,301	6.533%
2.	Plan's Payment on Amortization Bases	0	0.000%
3.	Surcharge for Class 1 Benefits[1]	0	0.000%
4.	Total Employer Share of Contributions	12,301	6.533%
5.	Total Member Share of Contributions	11,768	6.250%

Required Employer Contribution for Fiscal Year 2017-18	
Employer Normal Cost Rate	**6.533%**
***Plus* Monthly Employer Dollar UAL Amortization Payment**	**$ 0**

		Estimated Contribution Amount FY 2018-19[3]	Required Contribution Rate FY 2018-19
1.	Plan's Employer Normal Cost	$ 17,692	6.842%
2.	Plan's Payment on Amortization Bases	0	0.000%
3.	Surcharge for Class 1 Benefits[1]	0	0.000%
4.	Total Employer Share of Contributions	17,692	6.842%
5.	Total Member Share of Contributions	16,161	6.250%

Required Employer Contribution for Fiscal Year 2018-19	
Employer Normal Cost Rate	**6.842%**
***Plus* Monthly Employer Dollar UAL Amortization Payment**	**$ 0**

[1] Appendix C of Section 2 contains the list of class 1 benefits with their corresponding surcharges.
[2] Based on a start date of October 1, 2017
[3] Payroll from prior year is assumed to increase by the 3.00 percent payroll growth assumption.

Plan's Unfunded Liability

At the time of joining a risk pool, an unfunded liability will be created to account for whether the assets that were brought into the pool were more or less than what was required to maintain the funded ratio of the pool. The unfunded liability for your proposed MISCELLANEOUS PLAN at the effective date of the contract was developed as follows:

1.	Entry Age Normal Accrued Liabilities	0
2.	Market Value of Assets	0
3.	Plan's Unfunded Liability as of the Effective Date of the Contract	0
4.	Amortization Period in Years	N/A

Summary of Participant Data

Below is a table showing a summary of the participant data for your plan upon which this valuation is based

1.	Number of Active Members	2
2.	Total Payroll	$251,044
3.	Average Salary	$125,522
4.	Number of Transferred Members	0
5.	Number of Separated Members	0
6.	Number of Retired Members and Beneficiaries	0

List of Class 1 Benefit Provisions

- N/A

If Section 21031 (Public Service Credit for Limited Prior Service) is included in the contract, there is a risk that employer contribution rates will increase in the future as a result of members electing to purchase prior service.

Subsequent Events

Discount Rate Change

On December 21, 2016, CalPERS Board of Administration adopted policy to lower the discount rate from 7.5% to 7.0% over the next three years to reduce risk in the pension system. Lowering the discount rate will result in higher normal cost, higher unfunded liability payments, and a lower funded status. The Fiscal Year 2017-2018 contribution rates and payments in this report are based on a 7.5% discount rate. The Fiscal Year 2018-2019 contribution rates and payments in this report are based on a 7.375% discount rate. A discount rate of 7.25% will be used to determine FY 2019-20 contribution rates and payments, and a discount rate of 7.0% will be used in subsequent years. Please refer to CalPERS website for the details on the new discount rate policy.

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 stragegic 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 found on our website.

Summary of 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 Section 2, Appendix B of this report.

Benefit Provision	PEPRA Provisions
Benefit Formula	2% @ 62
Social Security Coverage	No
Full/Modified	Full
Employee Contribution Rate	6.25%
Final Average Compensation Period	3 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 4
Special	No
Alternate (firefighters)	No
Post-Retirement Death Benefits	
Lump Sum	$500
Survivor Allowance (PRSA)	No
COLA	2%
Employee Contributions	
Contractual employer paid	No
Contractual Employee Cost sharing	0%

*1959 Survivor Benefit is provided by a separate program and will be billed separately by the agency.

Section 2

CALIFORNIA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

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