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July 30, 2020

CALPERS ID: 1885224868  
Employer Name: CITY OF MONTEBELLO  
Rate Plan: SAFETY PLAN  
BENEFIT DESCRIPTION: ADDITIONAL TWO YEARS OF SERVICE – GOLDEN HANDSHAKE

Dear Requestor:

A contract amendment cost analysis for the valuation requested and related information is enclosed. This amendment actuarial valuation report reflects the following proposed benefit provision changes:

**Additional two years of service for designated members - Golden Handshake**

Number of eligible members	12
Average Pay	\$113,044
Average Service	20.05
Average Age	54.24

California Government Code Section 20903 allows an agency to amend its contract to provide its employees, who retire during a designated period, two years of additional service credit. Before an agency may adopt the Golden Handshake resolution, the governing body must certify that it intends to keep some of the resulting vacancies permanently unfilled and reduce the workforce. The provision permits agencies to reduce staff and provide immediate payroll savings by offering a retirement incentive for eligible employees.

The estimated total increase in retirement benefit costs and analysis regarding estimated changes in required employer contribution rates are provided in the attached cost analysis. If you are aware of others interested in this information (i.e., payroll staff, county court employees, port districts, etc.), please inform them. Sections 20463 (b) and (c) of the California Public Employees' Retirement Law require the governing body of a public agency which requests a contract amendment cost analysis to provide each affected employee organization with a copy within five days of receipt. Likewise, if this cost analysis is requested by an employee organization, the employee organization is required to provide a copy of the analysis to the public agency within five days of receipt.

**Important Risk Disclosure**

- **The Nature of Actuarial Work:** All actuarial calculations, including the ones in this cost estimate, are based on numerous assumptions about the future. This includes demographic assumptions about the percentage of your employees that will terminate, die, become disabled, and retire in each future year, and economic assumptions, about what salary increases each employee receives and the most important assumption, what the assets at CalPERS will earn for each year into the future until the last dollar is paid to current members of your plan. While CalPERS has set these assumptions as our best estimate of the future, it must be understood that these assumptions are very long-term predictors and will not be realized each year as we go forward. **This means that your required employer contributions can vary with or without any benefit changes because short term experience does not conform to the long-term actuarial assumptions.**
- Investment return is much more volatile than liability fluctuations and can cause employer rates to vary significantly. For example, for the past twenty-year period ending June 30, 2020, returns for each fiscal year ranged from -24% to +20.7%. The impact of investment return on employer contribution rates varies significantly based on the plan's volatility ratio (the ratio of the market value of assets to the payroll).

- The risks associated with whether actual future measurements differ significantly from expected future measurements are disclosed in this report. **These risk disclosures are important and should be reviewed.**

If you have questions about the cost analysis, please call (888) CalPERS (225-7377). Please ask to speak to a contract analyst for questions about the timing of the contract amendment. Please ask to speak to either signing actuary below for questions about this cost analysis.



JULIAN ROBINSON, FSA, EA, MAAA  
Senior Pension Actuary, CalPERS



RANDALL DZIUBEK, ASA, MAAA  
Deputy Chief Actuary - Valuation Services, CalPERS

Enclosures

## **Estimated Cost / Savings of Golden Handshake Program**

A Golden Handshake program generally results in increased retirement benefit costs but lower payroll and ancillary benefit costs (at least for some period of time). An appropriate method for determining the ultimate cost / savings of such a program is to compare the estimated increase in retirement benefit costs to the estimated payroll and ancillary benefit savings. There is generally no way to know which of the eligible members will retire under the program. ***All "post-amendment" results provided in this report assume all eligible members will retire.*** If some eligible employees choose to continue working, the cost will be lower. However, it is not necessarily true that if 80% of eligible members choose to retire, the cost will be 80% of the results shown in this report. The cost of the additional service varies by individuals, and those for whom it has a higher value may be more likely to elect to take advantage, meaning that the cost for the 80% that elect to retire could be more than 80% of the cost if all members elect to retire.

The ultimate cost/savings will also depend heavily on the extent to which members who retire under the program are replaced or not replaced. Both the increase in retirement benefit costs and the decrease in payroll/ancillary benefits depend on this.

Adoption of the proposed amendment would affect the cost of retirement benefits provided in this plan in two ways:

1. Increase in Past Service Cost – this is the current value of the improved benefit for all past service of eligible members, expressed as a lump-sum dollar amount. According to CalPERS policy, a new Unfunded Accrued Liability base is established in the amount of the past service cost increase for the Golden Handshake program and amortized over 5 years.
2. Decrease in Normal Cost – employer normal costs for remaining active members will be unaffected by the Golden Handshake program. However, to the extent members who retire under the program are not replaced, total required employer normal cost payments will be reduced.

***This report provides estimates of the increase in retirement benefit costs but does not provide estimated payroll/ancillary benefit savings.*** For a full picture of the financial impact of this program, payroll and ancillary benefit costs should be estimated and compared to the retirement benefit costs provided in this report.

## **Present Value of Projected Benefits**

The table below shows the change in the plan's total present value of benefits for the proposed plan amendment. The present value of benefits represents the total dollars needed today to fund all future benefits for *current* members of the plan (i.e., without regard to future employees).

Also provided in the table is the present value of future member contributions for members assumed to retire under the Golden Handshake program. Without the program, these member contributions would be expected to be paid to the plan. If the retiring members are not replaced, these member contributions will not be contributed to the plan.

***The change in the present value of benefits due to the Golden Handshake program plus "lost" member contributions is an estimate of the total retirement benefit cost of program if retiring members are not replaced.***

**CONTRACT AMENDMENT COST ANALYSIS - VALUATION BASIS: June 30, 2019**  
**SAFETY PLAN OF THE CITY OF MONTEBELLO**  
**CALPERS ID: 1885224868**  
**BENEFIT DESCRIPTION: TWO YEARS ADDITIONAL SERVICE – GOLDEN HANDSHAKE**

<b>As of June 30, 2019</b>	<b>Pre-Amendment</b>	<b>Post-Amendment</b>
<b>Present Value of Projected Benefits (PVB)</b>	\$ 297,604,593	\$ 298,396,859
<b>Change to PVB</b>		\$ 792,266
<b>Present Value of Future Member Contributions (eligible members only)</b>	\$ 453,265	\$ 162,954
<b>Reduction in Future Member Contributions</b>		\$ 290,311
<b>Estimated Total Increase in Retirement Benefit Costs (Assuming no replacement)</b>		<b>\$ 1,082,577</b>

As discussed in the Important Risk Disclosure in the cover letter, actual cost in the future will differ from our estimates due to experience deviating from the long-term actuarial assumptions on which the estimates are based.

### **Accrued Liability**

The plan's Accrued Liability is the portion of the Present Value of Projected Benefits attributable to past service. A plan with assets exactly equal to the plan's accrued liability is "on schedule" in funding that plan. A plan with assets below the accrued liability is "behind schedule", or is said to have an *unfunded liability*, and must temporarily increase contributions to get back on schedule. Of course, events such as plan amendments and investment or demographic gains or losses can change a plan's condition from year to year.

The increase in the plan's accrued liability due to the Golden Handshake program determines the increase in unfunded liability that is amortized over a 5-year period which increases required annual employer contributions.

The changes in your plan's accrued liability, unfunded accrued liability, and the funded ratio as of June 30, 2019 due to the plan amendment are shown in the table below.

<b>As of June 30, 2019</b>	<b>Pre-Amendment</b>	<b>Post-Amendment</b>
<b>Entry Age Normal Accrued Liability (AL)</b>	\$ 267,600,897	\$ 269,591,531
<b>Market Value of Assets (MVA)</b>	172,529,486	172,529,486
<b>Unfunded Liability/(Excess Assets) (UAL = AL – MVA)</b>	\$ 95,071,411	\$ 97,062,045
<b>Funded Ratio (MVA / AL)</b>	64.5%	64.0%
<b>Estimated Change to AL</b>		<b>\$ 1,990,634</b>

For a Golden Handshake program, the increase in accrued liability is typically greater than the increase in the present value of projected benefits. The difference is the value of normal costs that would have been charged for the retiring members between the valuation date and their projected retirement date (without the Golden Handshake program). *If these retiring members are replaced (resulting in these normal costs being accrued by replacement members), a more appropriate estimate of the total increase in retirement benefit costs attributable to the Golden Handshake program is the increase in accrued liability shown above.*

## **Estimated Impact on Future Employer Contributions**

While the table above gives the changes in the accrued liability and funded status of the plan due to the amendment, there remains the question of what will happen to required employer contributions because of the Golden Handshake program.

CalPERS policy provides that the change in unfunded liability due to a Golden Handshake program will be separately amortized over a period of 5 years and all other components of the plan's unfunded liability/excess assets will continue to be amortized separately. Future employer normal costs are expected to be lower provided at least some of the retiring members are not replaced.

### Normal Cost for Fiscal Year 2021-22

The employer normal cost rate determined in the June 30, 2019 actuarial valuation, and applicable to fiscal year 2021-22, is unaffected by the Golden Handshake program. However, if member payroll for that year is reduced due to this program, this normal cost rate will be applied to lower payroll which will result in lower normal cost dollars paid during that year. **The reduction in fiscal year 2021-22 employer normal cost can be estimated by multiplying the plan's current employer normal cost rate by the estimated decrease in payroll due to this program.**

### Normal Cost for Fiscal Year 2022-23

The employer normal cost rate that will be determined in the June 30, 2020 actuarial valuation (applicable to the 2022-23 fiscal year) will also be unaffected by this Golden Handshake program as all eligible members will be retiring after that date. **An estimate for the employer normal cost reduction in fiscal year 2022-23 can be determined by multiplying the plan's current employer normal cost rate by the estimated decrease in payroll due to this program in fiscal year 2022-23.**

### Normal Costs for Fiscal Years 2023-24 and Beyond

The plan's employer normal cost rate determined in the June 30, 2021 actuarial valuation (applicable to the 2023-24 fiscal year) will reflect membership changes due to this Golden Handshake program. Individual member normal cost rates are not affected, but the mix of classic and PEPRA members is likely to change as a result of the Golden Handshake program. This will affect the plan's overall normal cost rate which is likely to decrease somewhat as we would expect a higher proportion of PEPRA members in the plan after this program. **Current employer normal cost rates for classic members and PEPRA members are provided in the table below. These can be used to estimate employer normal cost savings in fiscal years 2023-24 and beyond based on expected payroll decreases attributable to this program.** For example, an estimate for the long-term expected normal cost savings due to a permanently eliminated position is the PEPRA employer normal cost rate shown below, multiplied by the eliminated payroll.

**CONTRACT AMENDMENT COST ANALYSIS - VALUATION BASIS: June 30, 2019**  
**SAFETY PLAN OF THE CITY OF MONTEBELLO**  
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<b>Based on June 30, 2019 Actuarial Valuation</b>		
<b><u>Employer Normal Cost Rates</u></b>		
<b>Miscellaneous Plan</b>		21.18%
<b>Classic Members Only</b>		23.49%
<b>PEPRA Members Only</b>		12.98%
<p>Note – individual member normal cost rates are not impacted by the Golden Handshake program. However, the program is expected to change the mix of Classic and PEPRA members in this plan which will likely decrease the plan’s employer normal cost rate. The first actuarial report that will reflect these demographic changes will be the June 30, 2021 report. Future employer normal cost reductions can be estimated using the procedures described in the text above.</p>		
	<b>Pre-Amendment</b>	<b>Post-Amendment</b>
<b>Projected Unfunded Accrued Liability Payment (FY 2023-24)</b>	\$65,011	\$680,230
<b>Change to Unfunded Accrued Liability Payment (persists for 5 years)</b>		\$615,219

## **Additional Risk Disclosures**

With the adoption of the Actuarial Standards of Practice Number 51 (ASOP 51), there is an increase in the amounts of disclosures about the risk associated with pension plans. These risks are shown in both the annual valuation report, as well as this amendment valuation report. The following are some risk disclosures that your actuary feels you should be aware of before amending your contract to provide this benefit.

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 required contributions from year to year. As a result, the required contributions will fluctuate, especially due to the unpredictability of investment returns.

Provided on the following pages are several measures to help your agency understand the risks associated with the proposed contract.

Specifically, these exhibits illustrate the risk associated with:

- The Plan's Sensitivity to the Discount Rate, Mortality, and Inflation
- The Plan's Maturity, and
- The Potential Costs for Terminating the Proposed Contract

The risks analyzed here are not a comprehensive list but are instead the risks we believe to have the greatest impact on the additional retirement benefit costs due to the Golden Handshake program. There are other risks associated with the proposed contract not analyzed here that could impact the cost of the plan.

## Analysis of Discount Rate Sensitivity

Shown below are various valuation results as of June 30, 2019 assuming alternate discount rates. Results are shown using the current discount rate of 7.0 percent as well as alternate discount rates of 6.0 percent and 8.0 percent. The rates of 6.0 percent and 8.0 percent were selected since they illustrate the impact of a 1 percent increase or decrease to the 7.0 percent assumption. This analysis shows the potential plan impacts if the PERF were to realize investment returns of 6.0 percent or 8.0 percent over the long-term.

This type of analysis gives the reader a sense of the long-term risk to required contributions. For a measure of funded status that is appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" at the end of this section.

The following tables indicate the sensitivity of key valuation results, both pre- and post-amendment, to changes in the discount rate. For the scenarios below, the inflation assumption was unchanged at 2.50%.

<b>Sensitivity Analysis (Pre-Amendment)</b>				
<b>As of June 30, 2019</b>	<b>Present Value of Projected Benefits</b>	<b>Accrued Liability</b>	<b>Unfunded Accrued Liability</b>	<b>Funded Status</b>
7.0% (current discount rate)	\$297,604,593	\$267,600,897	\$95,071,411	64.5%
6.0%	\$344,551,156	\$303,303,612	\$130,774,126	56.9%
8.0%	\$260,500,299	\$238,332,175	\$65,802,689	72.4%

<b>Sensitivity Analysis (Post-Amendment)</b>				
<b>As of June 30, 2019</b>	<b>Present Value of Projected Benefits</b>	<b>Accrued Liability</b>	<b>Unfunded Accrued Liability</b>	<b>Funded Status</b>
7.0% (current discount rate)	\$298,396,859	\$269,591,531	\$97,062,045	64.0%
6.0%	\$347,170,245	\$306,959,164	\$134,429,678	56.2%
8.0%	\$259,800,444	\$238,954,907	\$66,425,421	72.2%

## Mortality Rate Sensitivity

The following table looks at the change in the June 30, 2019 plan costs and funded ratio under two different longevity scenarios, namely assuming rates of mortality are 10 percent lower or 10 percent higher than our current mortality assumptions adopted in 2017. This type of analysis highlights the impact on the plan of improving or worsening mortality over the long-term.

<b>Sensitivity Analysis Pre-Amendment</b>			
<b>As of June 30, 2019</b>	<b>Current Mortality</b>	<b>10% Lower Mortality Rates</b>	<b>10% Higher Mortality Rates</b>
a) Accrued Liability	\$267,600,897	\$272,101,148	\$263,441,121
b) Market Value of Assets	\$172,529,486	\$172,529,486	\$172,529,486
c) Unfunded Liability (Surplus) [(a)-(b)]	\$95,071,411	\$99,571,662	\$90,911,635
d) Funded Status	64.5%	63.4%	65.5%

<b>Sensitivity Analysis Post-Amendment</b>			
<b>As of June 30, 2019</b>	<b>Current Mortality</b>	<b>10% Lower Mortality Rates</b>	<b>10% Higher Mortality Rates</b>
a) Accrued Liability	\$269,591,531	\$274,256,197	\$265,278,120
b) Market Value of Assets	\$172,529,486	\$172,529,486	\$172,529,486
c) Unfunded Liability (Surplus) [(a)-(b)]	\$97,062,045	\$101,726,711	\$92,748,634
d) Funded Status	64.0%	62.9%	65.0%

## **Inflation Rate Sensitivity**

The following analysis looks at the change in the June 30, 2019 plan costs and funded ratio under two different inflation rate scenarios, namely assuming the inflation rate is 1 percent lower or 1 percent higher than our current valuation inflation rate assumption of 2.50%. This type of analysis highlights the impact on the plan of increased or decreased inflation over the long-term.

<b>Sensitivity Analysis Pre-Amendment</b>			
<b>As of June 30, 2019</b>	<b>Current Inflation Rate</b>	<b>-1% Inflation Rate</b>	<b>+1% Inflation Rate</b>
a) Accrued Liability	\$267,600,897	\$282,614,130	\$249,560,723
b) Market Value of Assets	\$172,529,486	\$172,529,486	\$172,529,486
c) Unfunded Liability (Surplus) [(a)-(b)]	\$95,071,411	\$110,084,644	\$77,031,237
d) Funded Status	64.5%	61.0%	69.1%

<b>Sensitivity Analysis Post-Amendment</b>			
<b>As of June 30, 2019</b>	<b>Current Inflation Rate</b>	<b>-1% Inflation Rate</b>	<b>+1% Inflation Rate</b>
a) Accrued Liability	\$269,591,531	\$285,384,187	\$250,642,155
b) Market Value of Assets	\$172,529,486	\$172,529,486	\$172,529,486
c) Unfunded Liability (Surplus) [(a)-(b)]	\$97,062,045	\$112,854,701	\$78,112,669
d) Funded Status	64.0%	60.5%	68.8%

## **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.

The volatility in annual employer rates may be affected by this amendment due to changes in plan liabilities and payroll. Rate volatility can be measured by the ratio of plan assets to active member payroll. Higher asset to payroll ratios produce more volatile employer rates. To see this, consider two plans, one with assets that are 4 times active member payroll, and the other with assets that are 8 times active member payroll. In a given year, when assets rise or fall 10% above or below the actuarial assumption, the plan with a volatility index of 4 experiences a dollar gain or loss of 40% of payroll while the plan with a volatility index of 8 experiences a dollar gain or loss of 80% of payroll. If this gain or loss is spread over 20 years (and we oversimplify by ignoring interest on the gain or loss), then the first plan's rate changes by 2% of pay while the second plan's rate changes by 4% of pay.

It should also be noted that these ratios tend to stabilize as the plan matures. That is, all plans with no past service start their lives with zero assets and zero accrued liability – thus, asset to payroll ratio and liability to payroll ratios are equal to zero. However, as time goes by these ratios begin to rise and then tend to stabilize at some constant amount as the plan matures. Higher benefit levels and earlier expected retirements produce higher constant future ratios.

### **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. 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. When you amend your plan for prospective service, the future liability changes, but assets do not. So, the AVR does not change immediately. However, as assets grow to equal your new accrued liability, your AVR will also grow. So, we also disclose the ratio of accrued liability to payroll below to show what your future AVR will become when you are 100% funded. The higher this ratio, the more volatile your future contribution rate will be.

### **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. Since the liability volatility ratio is a long-term measure, it is shown below at the current discount rate (7.25 percent) as well as the discount rate the Board has adopted to determine the contribution requirement in the June 30, 2018 actuarial valuation (7.00 percent). With an increase in benefits, a plan is likely to see an increase in the Liability Volatility Ratio as more assets are needed to support the higher benefits that are to be paid out.

The table on the next page contains these measures of potential future rate volatility. **For this purpose, the "post-amendment" results assume all eligible members retire under this program and are not replaced.**

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**SAFETY PLAN OF THE CITY OF MONTEBELLO**  
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<b>Rate Volatility</b>	<b>As of June 30, 2019 (Pre-Amendment)</b>	<b>As of June 30, 2019 (Post-Amendment)</b>
1. Market Value of Assets	\$ 172,529,486	\$ 172,529,486
2. Payroll	11,179,063	9,822,536
3. Asset Volatility Ratio (AVR) [(1) / (2)]	15.4	17.6
4. Accrued Liability	\$ 267,600,897	\$ 269,591,531
5. Liability Volatility Ratio (LVR) [(4) / (2)]	23.9	27.4

## Maturity Measures

As pension plans mature they become much more sensitive to risks than plans that are less mature. Understanding plan maturity and how it affects the ability of a pension plan to tolerate risk is important in understanding how the plan is impacted by investment return volatility, other economic variables and changes in longevity or other demographic assumptions. One way to look at the maturity level of CalPERS and its plans is to look at the ratio of a plan's retiree liability to its total liability. A pension plan in its infancy will have a very low ratio of retiree liability to total liability. As the plan matures, the ratio starts increasing. A mature plan will often have a ratio above 60-65 percent. For both CalPERS and other retirement systems in the United States, these ratios have been steadily increasing in recent years.

<b>Ratio of Retiree Accrued Liability to Total Accrued Liability</b>	<b>Pre-Amendment</b>	<b>Post Amendment</b>
1. Retiree Accrued Liability	\$ 183,958,879	\$ 196,152,437
2. Total Accrued Liability	267,600,897	269,591,531
3. Ratio of Retiree AL to Total AL [(1) / (2)]	68.7%	72.8%

Another way to look at the maturity level of CalPERS and its plans is to look at the ratio of actives to retirees. A pension plan in its infancy will have a very high ratio of active to retired members. As the plan matures, and members retire, the ratio starts declining. A mature plan will often have a ratio near or below one. The average support ratio for CalPERS public agency plans is 1.25.

<b>Support Ratio</b>	<b>Pre-Amendment</b>	<b>Post-Amendment</b>
1. Number of Actives	110	98
2. Number of Retirees	283	295
3. Support Ratio [(1) / (2)]	0.39	0.33

**In the tables above, the "post-amendment" results assume all eligible members retire under this program and are not replaced.**

## 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, 2019. 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. This measure of funded status is not appropriate for assessing the need for future employer contributions in the case of an ongoing plan, that is, for an employer that continues to provide CalPERS retirement benefits to active employees.

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.

The following tables show the hypothetical termination liabilities before and after the proposed amendment. The increase in liability is due to the increase in benefits associated with the amendment.

### Pre-Amendment

<b>Market Value of Assets (MVA)</b>	<b>Hypothetical Termination Liability<sup>1,2</sup> @ 1.75%</b>	<b>Funded Status</b>	<b>Unfunded Termination Liability @ 1.75%</b>	<b>Hypothetical Termination Liability<sup>1,2</sup> @ 3.25%</b>	<b>Funded Status</b>	<b>Unfunded Termination Liability @ 3.25%</b>
\$172,529,486	\$557,769,624	30.9%	\$385,240,138	\$444,897,408	38.8%	\$272,367,922

### Post-Amendment

<b>Market Value of Assets (MVA)</b>	<b>Hypothetical Termination Liability<sup>1,2</sup> @ 1.75%</b>	<b>Funded Status</b>	<b>Unfunded Termination Liability @ 1.75%</b>	<b>Hypothetical Termination Liability<sup>1,2</sup> @ 3.25%</b>	<b>Funded Status</b>	<b>Unfunded Termination Liability @ 3.25%</b>
\$172,529,486	\$573,213,021	30.1%	\$400,683,535	\$454,523,694	38.0%	\$281,994,208

<sup>1</sup> The hypothetical liabilities calculated above include a 5 percent mortality contingency load in accordance with Board policy.

<sup>2</sup> 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 2.31 percent on June 30, 2019 and was 1.83 percent on January 31, 2020.

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.

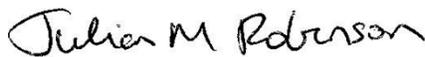
## **Additional Disclosure**

Please note that the cost analysis provided in this document **may not** be relied upon after you receive your next annual valuation. If you have not taken action to amend your contract, by this date, you must contact our office for an updated cost analysis, based on the new annual valuation.

Descriptions of the actuarial methodologies, actuarial assumptions, and plan benefit provisions may be found in the appendices of the June 30, 2019 annual report. Please note that the results shown here are subject to change if any of the data or plan provisions change from what was used in this study.

## **Certification**

This actuarial valuation for the proposed plan amendment is based on the participant, benefits, and asset data used in the June 30, 2019 annual valuation, with the benefits modified if necessary, to reflect what is currently provided under your contract with CalPERS, and further modified to reflect the proposed plan amendment. The valuation has been performed in accordance with standards of practice prescribed by the Actuarial Standards Board, and 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.



JULIAN ROBINSON, FSA, EA, MAAA  
Senior Pension Actuary, CalPERS



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Deputy Chief Actuary – Valuation Services, CalPERS