California Public Employees' Retirement System
Actuarial Office
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888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | www.calpers.ca.gov

April 4, 2023

Safety Plan of the Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)
Amendment Actuarial Valuation Report as of June 30, 2021

Section 20508 Cost Analysis for Merger with Branciforte Fire Protection District

Dear Requestor:

A cost analysis for the valuation(s) requested above and related information is enclosed.

The change in the employer contribution rate, as of the effective date of the proposed merger, is displayed on page 3.

Government Code sections 20463 (b) and (c) require the governing body of a public agency which requests a contract cost analysis to provide each affected employee organization with a copy within five days of receipt. Likewise, if a 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.

This cost analysis expires July 1, 2023. A Resolution of Intention declaring the agency's intent to amend the contract must be approved by the agency's governing body. The approved resolution must be received by this office on or before July 1, 2023. If either of these two conditions is not met, an updated cost analysis is required to merge the contracts. An updated cost analysis may be available as early as September 2023.

To complete the contract merger process based on the enclosed analysis, do the following:

- Complete and return the enclosed Contract Request and Schedule of Agency Actions forms. Within 90 days, CalPERS staff will send your agency the Resolution of Intention form for adoption.

- Complete and return the adopted Resolution of Intention to CalPERS on or before July 1, 2023. Adoption of the Final Resolution/Ordinance by this date is not required.

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 me for questions about this cost analysis.

David Clement

DAVID CLEMENT, ASA, MAAA, EA
Senior Actuary, CalPERS

Amendment Actuarial Valuation as of June 30, 2021

for the Safety Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)

Required Contributions for Fiscal Year July 1, 2023 – June 30, 2024

Introduction

This report presents the June 30, 2021 actuarial valuation results of the proposed merger of the Branciforte Fire Protection District with the Scotts Valley Fire Protection District Safety Plan, pursuant to Section 20508 of the California Public Employees' Retirement Law.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68. A separate accounting valuation report for annual GASB reporting purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 5.8% and 7.8%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post-retirement mortality assumptions adopted in 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Employer Contributions

The following tables show the change in the plans' employer contribution requirements for fiscal year 2023-24 due to the proposed merger. If the effective date of the proposed merger is prior to July 1, 2023, the contribution requirements for the remainder of fiscal year 2023-24 will remain unchanged.

	Scotts Valley Fire Protection District (Pre-Merger)	Branciforte Fire Protection District (Pre-Merger)	Scotts Valley Fire Protection District (Post-Merger)
	Fiscal Year 2023-24	**Fiscal Year 2023-24**	**Fiscal Year 2023-24**
Development of Normal Cost as a Percentage of Payroll			
Base Total Normal Cost for Formula	31.82%	31.82%	31.82%
Surcharge for Class 1 Benefits[1]			
a) FAC 1	1.32%	0.00%	1.32%
Plan's Total Normal Cost	33.14%	31.82%	33.14%
Plan's Employee Contribution Rate[2]	8.99%	8.99%	8.99%
Employer Normal Cost Rate	24.15%	22.83%	24.15%
Projected Payroll for Contribution Fiscal Year	$1,949,471	$169,596	$2,119,067
Estimated Employer Contributions Based on Projected Payroll			
Plan's Estimated Employer Normal Cost	$470,797	$38,719	$511,755
Plan's Payment on Amortization Bases	1,021,417	68,255	1,089,672
% of Projected Payroll (illustrative only)	52.39%	40.25%	51.42%
Estimated Total Employer Contribution	$1,492,214	$106,974	$1,601,427
% of Projected Payroll (illustrative only)	76.54%	63.08%	75.57%
Required Employer Contributions			
Employer Normal Cost Rate	**24.15%**	**22.83%**	**24.15%**
Plus, Either			
1) Monthly UAL Payment	**$85,118.08**	**$5,687.92**	**$90,806.00**
Or			
2) Annual UAL Prepayment*	**$988,365**	**$66,046**	**$1,054,411**

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)****.*

[1] The Section 2 report contains a list of Class 1 benefits and corresponding surcharges for each benefit.
[2] The rate displayed is the actual average employee contribution rate for the Risk Pool, which takes into account adjustments for Social Security contribution offsets. The required employee contribution, which is set by statute, is <<9%>> of pay.

Plan's Funded Status

June 30, 2021	Scotts Valley Fire Protection District (Pre-Merger)	Branciforte Fire Protection District (Pre-Merger)	Scotts Valley Fire Protection District (Post-Merger)
1. Present Value of Projected Benefits (PVB)	$54,346,477	$4,006,414	$58,379,757
2. Entry Age Accrued Liability (AL)	50,846,730	3,509,364	54,356,094
3. Plan's Market Value of Assets (MVA)	41,417,299	3,212,821	44,630,120
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	9,429,431	296,543	9,725,974
5. Funded Ratio [(3) / (2)]	81.5%	91.5%	82.1%

The UAL and funded ratio are assessments of the need for future employer contributions based on the actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. The funded ratio, on the other hand, is a relative measure of funded status that allows for comparison between plans of different sizes. For measures of funded status that are appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The tables below show the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. In particular, the investment return beginning with fiscal year 2021-22 is assumed to be 6.80% per year, net of investment and administrative expenses. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below. The projected normal cost percentages below reflect that the normal cost will continue to decline over time as new employees are hired into lower cost benefit tiers. Future contribution requirements may differ significantly from those shown below. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

Scotts Valley Fire Protection District
Pre-Merger

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22)				
Fiscal Year	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Normal Cost %	24.15%	24.2%	24.2%	24.2%	24.2%	24.2%
UAL Payment	$1,021,417	$1,007,000	$961,000	$913,000	$845,000	$878,000

Branciforte Fire Protection District
Pre-Merger

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22)				
Fiscal Year	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Normal Cost %	22.83%	22.8%	22.8%	22.8%	22.8%	22.8%
UAL Payment	$68,255	$0	$0	$0	$0	$0

Scotts Valley Fire Protection District
Post-Merger

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22)				
Fiscal Year	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Normal Cost %	24.15%	24.2%	24.2%	24.2%	24.2%	24.2%
UAL Payment	$1,089,672	$1,007,000	$961,000	$913,000	$845,000	$878,000

Schedule of Plan's Amortization Bases

The following pages display the amortization base schedules for Scotts Valley Fire Protection District before and after the proposed merger, as well as the amortization base schedule for Branciforte Fire Protection District before the proposed merger. Note that 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, 2021.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2023-24.

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 required 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 expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Schedule of Plan's Amortization Bases (Continued)

Scotts Valley Fire Protection District (Pre-Merger)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escala-tion Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.80%	22	4,405,318	307,114	4,387,495	315,560	4,359,732	316,439
Non-Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.80%	22	(267,710)	(18,663)	(266,627)	(19,177)	(264,939)	(19,230)
Share of Pre-2013 Pool UAL	6/30/13		No Ramp	2.80%	14	2,893,408	249,140	2,832,688	255,991	2,760,759	258,116
Assumption Change	6/30/14	100%	Up/Down	2.80%	13	1,943,428	195,423	1,873,623	200,798	1,793,517	203,023
Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	(3,157,689)	(214,208)	(3,151,041)	(220,099)	(3,137,852)	(220,524)
Non-Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	38,398	2,605	38,317	2,676	38,157	2,682
Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	1,938,165	128,165	1,937,509	131,689	1,933,167	131,833
Non-Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	(6,988)	(462)	(6,986)	(475)	(6,970)	(475)
Assumption Change	6/30/16	100%	Up/Down	2.80%	15	761,230	56,013	755,108	71,942	732,108	72,603
Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	2,523,969	132,014	2,559,170	169,555	2,557,968	169,601
Non-Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	(405,766)	(21,223)	(411,425)	(27,259)	(411,231)	(27,266)
Assumption Change	6/30/17	100%	Up/Down	2.80%	16	987,755	53,778	999,346	73,676	991,162	92,860
Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	(1,251,743)	(49,192)	(1,286,025)	(67,393)	(1,303,828)	(84,199)
Non-Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	31,162	1,225	32,015	1,678	32,458	2,096
Assumption Change	6/30/18	80%	Up/Down	2.80%	17	1,479,161	53,938	1,524,002	83,132	1,541,722	111,637
Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	(388,929)	(10,338)	(404,692)	(15,934)	(415,744)	(21,213)
Method Change	6/30/18	80%	Up/Down	2.80%	17	333,447	12,159	343,556	18,741	347,550	25,166
Non-Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	181,653	4,829	189,015	7,442	194,177	9,908
Investment (Gain)/Loss	6/30/19	60%	Up Only	0.00%	18	189,066	4,134	197,650	8,267	202,547	12,178
Non-Investment (Gain)/Loss	6/30/19		No Ramp	0.00%	18	220,837	20,152	215,028	20,152	208,824	19,799
Investment (Gain)/Loss	6/30/20	40%	Up Only	0.00%	19	863,999	0	922,751	20,213	964,609	39,652
Non-Investment (Gain)/Loss	6/30/20		No Ramp	0.00%	19	151,315	0	161,604	14,775	157,324	14,509
Assumption Change	6/30/21		No Ramp	0.00%	20	269,045	(19,772)	307,773	(20,326)	349,707	31,447
Net Investment (Gain)	6/30/21	20%	Up Only	0.00%	20	(4,064,124)	0	(4,340,484)	0	(4,635,637)	(99,642)
Non-Investment (Gain)/Loss	6/30/21		No Ramp	0.00%	20	(190,925)	0	(203,908)	0	(217,774)	(19,583)
Risk Mitigation	6/30/21		No Ramp	0.00%	1	1,228,060	(25,303)	1,337,717	(26,011)	1,455,563	1,504,238
Risk Mitigation Offset	6/30/21		No Ramp	0.00%	1	(1,276,111)	0	(1,362,887)	0	(1,455,563)	(1,504,238)
Total						**9,429,431**	**861,528**	**9,180,292**	**999,613**	**8,771,513**	**1,021,417**

Schedule of Plan's Amortization Bases (Continued)

Branciforte Fire Protection District (Pre-Merger)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escala-tion Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Fresh Start	6/30/21	No Ramp		0.00%	1	296,543	129,785	182,583	124,780	66,046	68,255
Total						**296,543**	**129,785**	**182,583**	**124,780**	**66,046**	**68,255**

Schedule of Plan's Amortization Bases (Continued)

Scotts Valley Fire Protection District (Post-Merger)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escala-tion Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.80%	22	4,405,318	307,114	4,387,495	315,560	4,359,732	316,439
Non-Investment (Gain)/Loss	6/30/13	100%	Up/Down	2.80%	22	(267,710)	(18,663)	(266,627)	(19,177)	(264,939)	(19,230)
Share of Pre-2013 Pool UAL	6/30/13		No Ramp	2.80%	14	2,893,408	249,140	2,832,688	255,991	2,760,759	258,116
Assumption Change	6/30/14	100%	Up/Down	2.80%	13	1,943,428	195,423	1,873,623	200,798	1,793,517	203,023
Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	(3,157,689)	(214,208)	(3,151,041)	(220,099)	(3,137,852)	(220,524)
Non-Investment (Gain)/Loss	6/30/14	100%	Up/Down	2.80%	23	38,398	2,605	38,317	2,676	38,157	2,682
Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	1,938,165	128,165	1,937,509	131,689	1,933,167	131,833
Non-Investment (Gain)/Loss	6/30/15	100%	Up/Down	2.80%	24	(6,988)	(462)	(6,986)	(475)	(6,970)	(475)
Assumption Change	6/30/16	100%	Up/Down	2.80%	15	761,230	56,013	755,108	71,942	732,108	72,603
Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	2,523,969	132,014	2,559,170	169,555	2,557,968	169,601
Non-Investment (Gain)/Loss	6/30/16	100%	Up/Down	2.80%	25	(405,766)	(21,223)	(411,425)	(27,259)	(411,231)	(27,266)
Assumption Change	6/30/17	100%	Up/Down	2.80%	16	987,755	53,778	999,346	73,676	991,162	92,860
Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	(1,251,743)	(49,192)	(1,286,025)	(67,393)	(1,303,828)	(84,199)
Non-Investment (Gain)/Loss	6/30/17	100%	Up/Down	2.80%	26	31,162	1,225	32,015	1,678	32,458	2,096
Assumption Change	6/30/18	80%	Up/Down	2.80%	17	1,479,161	53,938	1,524,002	83,132	1,541,722	111,637
Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	(388,929)	(10,338)	(404,692)	(15,934)	(415,744)	(21,213)
Method Change	6/30/18	80%	Up/Down	2.80%	17	333,447	12,159	343,556	18,741	347,550	25,166
Non-Investment (Gain)/Loss	6/30/18	80%	Up/Down	2.80%	27	181,653	4,829	189,015	7,442	194,177	9,908
Investment (Gain)/Loss	6/30/19	60%	Up Only	0.00%	18	189,066	4,134	197,650	8,267	202,547	12,178
Non-Investment (Gain)/Loss	6/30/19		No Ramp	0.00%	18	220,837	20,152	215,028	20,152	208,824	19,799
Investment (Gain)/Loss	6/30/20	40%	Up Only	0.00%	19	863,999	0	922,751	20,213	964,609	39,652
Non-Investment (Gain)/Loss	6/30/20		No Ramp	0.00%	19	151,315	0	161,604	14,775	157,324	14,509
Assumption Change	6/30/21		No Ramp	0.00%	20	269,045	(19,772)	307,773	(20,326)	349,707	31,447
Net Investment (Gain)	6/30/21	20%	Up Only	0.00%	20	(4,064,124)	0	(4,340,484)	0	(4,635,637)	(99,642)
Non-Investment (Gain)/Loss	6/30/21		No Ramp	0.00%	20	(190,925)	0	(203,908)	0	(217,774)	(19,583)
Risk Mitigation	6/30/21		No Ramp	0.00%	1	1,228,060	(25,303)	1,337,717	(26,011)	1,455,563	1,504,238
Risk Mitigation Offset	6/30/21		No Ramp	0.00%	1	(1,276,111)	0	(1,362,887)	0	(1,455,563)	(1,504,238)
Merger (Branciforte)	6/30/21		No Ramp	0.00%	1	296,543	129,785	182,583	124,780	66,046	68,255
Total						**9,725,974**	**991,313**	**9,362,875**	**1,124,393**	**8,837,559**	**1,089,672**

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer contributions. The projections below reflect the impact of the CalPERS Funding Risk Mitigation policy. The projected normal cost rates reflect that the rates are anticipated to decline over time as new employees are hired into lower-cost benefit tiers. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits, or funding will occur.

The first table shows projected contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2041.

Scotts Valley Fire Protection District (Pre-Merger)

Assumed Annual Return FY 2021-22 through FY 2040-41	Projected Employer Contributions				
	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
3.0% (5th percentile)					
Normal Cost Rate	24.2%	24.2%	24.2%	24.2%	24.2%
UAL Contribution	$1,045,000	$1,079,000	$1,149,000	$1,242,000	$1,477,000
10.8% (95th percentile)					
Normal Cost Rate	24.6%	25.0%	25.4%	25.8%	26.3%
UAL Contribution	$971,000	$854,000	$694,000	$0	$0

Scotts Valley Fire Protection District (Post-Merger)

Assumed Annual Return FY 2021-22 through FY 2040-41	Projected Employer Contributions				
	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
3.0% (5th percentile)					
Normal Cost Rate	24.2%	24.2%	24.2%	24.2%	24.2%
UAL Contribution	$1,048,000	$1,088,100	$1,167,000	$1,273,000	$1,523,000
10.8% (95th percentile)					
Normal Cost Rate	24.6%	25.0%	25.4%	25.8%	26.3%
UAL Contribution	$971,000	$854,000	$694,000	$0	$0

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of a one or two standard deviation investment loss in FY 2021-22 on the FY 2024-25 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2024-25.

Future Investment Return Scenarios (Continued)

Scotts Valley Fire Protection District (Pre-Merger)

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	FY 2023-24	FY 2024-25
(17.2%) (2 standard deviation loss)		
Normal Cost Rate	24.15%	24.2%
UAL Contribution	$1,021,417	$1,251,000
(5.2%) (1 standard deviation loss)		
Normal Cost Rate	24.15%	24.2%
UAL Contribution	$1,021,417	$1,129,000

Scotts Valley Fire Protection District (Post-Merger)

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	FY 2023-24	FY 2024-25
(17.2%) (2 standard deviation loss)		
Normal Cost Rate	24.15%	24.2%
UAL Contribution	$1,089,672	$1,270,000
(5.2%) (1 standard deviation loss)		
Normal Cost Rate	24.15%	24.2%
UAL Contribution	$1,089,672	$1,138,500

- Without investment gains (returns higher than 6.8%) in year FY 2022-23 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2021-22.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2024-25 as well as to model other investment return scenarios.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.5% and 2.3%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2021 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Real Rate of Return Assumption

Scotts Valley Fire Protection District (Pre-Merger)

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	41.56%	33.14%	26.71%
b) Accrued Liability	57,502,422	50,846,730	45,344,237
c) Market Value of Assets	41,417,299	41,417,299	41,417,299
d) Unfunded Liability/(Surplus) [(b) - (c)]	16,085,123	9,429,431	3,926,938
e) Funded Status	72.0%	81.5%	91.3%

Scotts Valley Fire Protection District (Post-Merger)

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	41.56%	33.14%	26.71%
b) Accrued Liability	61,477,779	54,356,094	48,470,902
c) Market Value of Assets	44,630,120	44,630,120	44,630,120
d) Unfunded Liability/(Surplus) [(b) - (c)]	16,847,659	9,725,974	3,840,782
e) Funded Status	72.6%	82.1%	92.1%

Discount Rate Sensitivity (continued)

Sensitivity to the Price Inflation Assumption

Scotts Valley Fire Protection District (Pre-Merger)

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	**1.3%**	**2.3%**	**3.3%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	34.78%	33.14%	30.09%
b) Accrued Liability	52,558,072	50,846,730	46,723,312
c) Market Value of Assets	41,417,299	41,417,299	41,417,299
d) Unfunded Liability/(Surplus) [(b) - (c)]	11,140,773	9,429,431	5,306,013
e) Funded Status	78.8%	81.5%	88.6%

Scotts Valley Fire Protection District (Post-Merger)

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	**1.3%**	**2.3%**	**3.3%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	34.78%	33.14%	30.09%
b) Accrued Liability	56,190,052	54,356,094	49,951,044
c) Market Value of Assets	44,630,120	44,630,120	44,630,120
d) Unfunded Liability/(Surplus) [(b) - (c)]	11,559,932	9,725,974	5,320,924
e) Funded Status	79.4%	82.1%	89.3%

Mortality Rate Sensitivity

The following tables look at the change in the June 30, 2021 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan on a future change in the mortality assumption

Scotts Valley Fire Protection District (Pre-Merger)

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	33.61%	33.14%	32.70%
b) Accrued Liability	51,751,984	50,846,730	50,010,330
c) Market Value of Assets	41,417,299	41,417,299	41,417,299
d) Unfunded Liability/(Surplus) [(b) - (c)]	10,334,685	9,429,431	8,593,031
e) Funded Status	80.0%	81.5%	82.8%

Scotts Valley Fire Protection District (Post-Merger)

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	33.61%	33.14%	32.70%
b) Accrued Liability	55,328,781	54,356,094	53,457,466
c) Market Value of Assets	44,630,120	44,630,120	44,630,120
d) Unfunded Liability/(Surplus) [(b) - (c)]	10,698,661	9,725,974	8,827,346
e) Funded Status	80.7%	82.1%	83.5%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor 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 increases. A mature plan will often have a ratio above 60%-65%.

Scotts Valley Fire Protection District as of June 30, 2021

Ratio of Retiree Accrued Liability to Total Accrued Liability	Pre-Merger	Post-Merger
1. Retired Accrued Liability	34,717,994	37,315,551
2. Total Accrued Liability	50,846,730	54,356,094
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.68	0.69

Another measure of the maturity level of CalPERS and its plans is the ratio of actives to retirees, also called the support ratio. 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above. For comparison, the support ratio for all CalPERS public agency plans is 0.82 and is calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Scotts Valley Fire Protection District as of June 30, 2021

Support Ratio	Pre-Merger	Post-Merger
1. Number of Actives	12	14
2. Number of Retirees	36	46
3. Support Ratio [(1) / (2)]	0.33	0.31

Maturity Measures (Continued)

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., 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 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.

Scotts Valley Fire Protection District as of June 30, 2021

Contribution Volatility	Pre-Merger	Post-Merger
1. Market Value of Assets	$41,417,299	$44,630,120
2. Payroll	1,794,475	1,950,587
3. Asset Volatility Ratio (AVR) [(1) / (2)]	23.1	22.9
4. Accrued Liability	$50,846,730	$54,356,094
5. Liability Volatility Ratio (LVR) [(4) / (2)]	28.3	27.9

Participant Data

The table below summarizes changes in the plan's member data.

June 30, 2021	Scotts Valley Fire Protection District (Pre-Merger)	Branciforte Fire Protection District (Pre-Merger)	Scotts Valley Fire Protection District (Post-Merger)
Reported Payroll	$1,794,475	$156,112	$1,950,587
Projected Payroll for Contribution Purposes	$1,949,471	$169,596	$2,119,067
Number of Members			
Actives	12	2	14
Transferred	8	3	11
Separated	2	1	3
Retired	36	10	46
Total	58	16	74

Additional Disclosure

If your agency is requesting cost information for two or more benefit changes, the cost of adopting more than one of these changes **may not** be obtained by adding the individual costs. Instead, a separate valuation must be done to provide a cost analysis for the combination of benefit changes.

Please note that the cost analysis provided in this document **may not** be relied upon after July 1, 2023. If you have not taken action to 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, 2021 annual report. Please note that the results shown here are subject to change if any of the data or plan provisions differ from what was used in this study.

Certification

This actuarial valuation for the proposed merger is based on the participant, benefits, and asset data used in the June 30, 2021 annual valuation, with the benefits modified, if necessary, to reflect what is currently provided under the agency's contract with CalPERS, and further modified to reflect the proposed merger. It is my opinion that 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.

David Clement

DAVID CLEMENT, ASA, MAAA, EA
Senior Actuary, CalPERS

California Public Employees' Retirement System
Actuarial Office
400 Q Street, Sacramento, CA 95811 | Phone: (916) 795-3000 | Fax: (916) 795-2744
888 CalPERS (or **888**-225-7377) | TTY: (877) 249-7442 | **www.calpers.ca.gov**

April 4, 2023

PEPRA Safety Plan of the Scotts Valley Fire Protection District
(CalPERS ID: 4027652040)
Amendment Actuarial Valuation Report as of June 30, 2021

Section 20508 Cost Analysis for Merger with Branciforte Fire Protection District

Dear Requestor:

A cost analysis for the valuation(s) requested above and related information is enclosed.

The change in the employer contribution rate, as of the effective date of the proposed merger, is displayed on page 3.

Government Code sections 20463 (b) and (c) require the governing body of a public agency which requests a contract cost analysis to provide each affected employee organization with a copy within five days of receipt. Likewise, if a 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.

This cost analysis expires July 1, 2023. A Resolution of Intention declaring the agency's intent to amend the contract must be approved by the agency's governing body. The approved resolution must be received by this office on or before July 1, 2023. If either of these two conditions is not met, an updated cost analysis is required to merge the contracts. An updated cost analysis may be available as early as September 2023.

To complete the contract merger process based on the enclosed analysis, do the following:

- Complete and return the enclosed Contract Request and Schedule of Agency Actions forms. Within 90 days, CalPERS staff will send your agency the Resolution of Intention form for adoption.
- Complete and return the adopted Resolution of Intention to CalPERS on or before July 1, 2023. Adoption of the Final Resolution/Ordinance by this date is not required.

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 me for questions about this cost analysis.

David Clement

DAVID CLEMENT, ASA, MAAA, EA
Senior Actuary, CalPERS

Amendment Actuarial Valuation as of June 30, 2021

for the PEPRA Safety Plan of the Scotts Valley Fire Protection District

(CalPERS ID: 4027652040)

Required Contributions for Fiscal Year July 1, 2023 – June 30, 2024

Introduction

This report presents the June 30, 2021 actuarial valuation results of the proposed merger of the Branciforte Fire Protection District with the Scotts Valley Fire Protection District PEPRA Safety Plan, pursuant to Section 20508 of the California Public Employees' Retirement Law.

The pension funding information presented in this report should not be used in financial reports subject to GASB Statement No. 68. A separate accounting valuation report for annual GASB reporting purposes is available from CalPERS and details for ordering are available on our website.

The measurements shown in this actuarial valuation may not be applicable for other purposes. The employer should contact their actuary before disseminating any portion of this report for any reason that is not explicitly described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; changes in actuarial policies; and changes in plan provisions or applicable law; and differences between the required contributions determined by the valuation and the actual contributions made by the agency.

Assessment and Disclosure of Risk

This report includes the following risk disclosures consistent with the recommendations of Actuarial Standards of Practice No. 51 and recommended by the California Actuarial Advisory Panel (CAAP) in the Model Disclosure Elements document:

- A "Scenario Test," projecting future results under different investment income returns.
- A "Sensitivity Analysis," showing the impact on current valuation results using alternative discount rates of 5.8% and 7.8%.
- A "Sensitivity Analysis," showing the impact on current valuation results assuming rates of mortality are 10% lower or 10% higher than our current post-retirement mortality assumptions adopted in 2021.
- Plan maturity measures indicating how sensitive a plan may be to the risks noted above.

Required Contributions

The following tables show the change in the plans' employer contribution requirements for fiscal year 2023-24 due to the proposed merger. If the effective date of the proposed merger is prior to July 1, 2023, the contribution requirements for the remainder of fiscal year 2023-24 will remain unchanged.

	Scotts Valley Fire Protection District (Pre-Merger) **Fiscal Year 2023-24**	**Branciforte Fire Protection District (Pre-Merger)** **Fiscal Year 2023-24**	**Scotts Valley Fire Protection District (Post-Merger)** **Fiscal Year 2023-24**
Development of Normal Cost as a Percentage of Payroll			
Base Total Normal Cost for Formula 2.7% @ 57	27.29%	27.29%	27.29%
Surcharge for Class 1 Benefits[1]			
None	0.00%	0.00%	0.00%
Plan's Total Normal Cost	27.29%	27.29%	27.29%
Plan's Employee Contribution Rate	13.75%	13.75%	13.75%
Employer Normal Cost Rate	13.54%	13.54%	13.54%
Projected Payroll for Contribution Fiscal Year	$1,686,148	$76,997	$1,763,145
Estimated Employer Contributions Based on Projected Payroll			
Plan's Estimated Employer Normal Cost	$228,304	$10,425	$238,729
Plan's Payment on Amortization Bases	0	584	584
% of Projected Payroll (illustrative only)	N/A	0.75%	0.03%
Estimated Total Employer Contribution	$228,304	$11,009	$239,313
% of Projected Payroll (illustrative only)	13.54%	14.30%	13.57%
Required Employer Contributions			
Employer Normal Cost Rate	**13.54%**	**13.54%**	**13.54%**
Plus			
1) Monthly UAL Payment	**$0**	**$48.67**	**$48.67**
Or			
2) Annual UAL Prepayment*	**$0**	**$565**	**$565**
Required PEPRA Member Rate	**13.75%**	**13.75%**	**13.75%**

*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).*

For additional detail regarding the determination of the required contribution for PEPRA members, see "PEPRA Member Contribution Rates" in the June 30, 2021 annual valuation report.

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

Plan's Funded Status

June 30, 2021	Scotts Valley Fire Protection District (Pre-Merger)	Branciforte Fire Protection District (Pre-Merger)	Scotts Valley Fire Protection District (Post-Merger)
1. Present Value of Projected Benefits (PVB)	$7,167,714	$308,105	$7,529,344
2. Entry Age Accrued Liability (AL)	1,616,496	10,236	1,626,732
3. Plan's Market Value of Assets (MVA)	1,773,541	11,435	1,784,976
4. Unfunded Accrued Liability (UAL) [(2) - (3)]	(157,045)	(1,199)	(158,244)
5. Funded Ratio [(3) / (2)]	109.7%	111.7%	109.7%

The UAL and funded ratio are assessments of the need for future employer contributions based on the actuarial cost method used to fund the plan. The UAL is the present value of future employer contributions for service that has already been earned and is in addition to future normal cost contributions for active members. The funded ratio, on the other hand, is a relative measure of funded status that allows for comparison between plans of different sizes. For measures of funded status that are appropriate for assessing the sufficiency of plan assets to cover estimated termination liabilities, please see "Hypothetical Termination Liability" in the "Risk Analysis" section.

Projected Employer Contributions

The tables below show the required and projected employer contributions (before cost sharing) for the next six fiscal years. The projection assumes that all actuarial assumptions will be realized and that no further changes to assumptions, contributions, benefits, or funding will occur during the projection period. In particular, the investment return beginning with fiscal year 2021-22 is assumed to be 6.80% per year, net of investment and administrative expenses. Actual contribution rates during this projection period could be significantly higher or lower than the projection shown below. The projected normal cost percentages below reflect that the normal cost will continue to decline over time as new employees are hired into lower cost benefit tiers. Future contribution requirements may differ significantly from those shown below. The actual long-term cost of the plan will depend on the actual benefits and expenses paid and the actual investment experience of the fund.

Scotts Valley Fire Protection District
Pre-Merger

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22)				
Fiscal Year	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Normal Cost %	13.54%	13.5%	13.5%	13.5%	13.5%	13.5%
UAL Payment	$0	$0	$0	$0	$0	$0

Branciforte Fire Protection District
Pre-Merger

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22)				
Fiscal Year	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Normal Cost %	13.54%	13.5%	13.5%	13.5%	13.5%	13.5%
UAL Payment	$584	$584	$584	$584	$585	$0

Scotts Valley Fire Protection District
Post-Merger

	Required Contribution	Projected Future Employer Contributions (Assumes 6.80% Return for Fiscal Year 2021-22)				
Fiscal Year	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Normal Cost %	13.54%	13.5%	13.5%	13.5%	13.5%	13.5%
UAL Payment	$584	$584	$584	$584	$585	$0

Schedule of Plan's Amortization Bases

The following pages display the amortization base schedules for Scotts Valley Fire Protection District before and after the proposed merger, as well as the amortization base schedule for Branciforte Fire Protection District before the proposed merger. Note that 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, 2021.
- The required employer contributions determined by the valuation are for the fiscal year beginning two years after the valuation date: fiscal year 2023-24.

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 required 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 expected payment on the UAL for the fiscal year and adjusting for interest. The expected payment on the UAL for a fiscal year is equal to the Expected Employer Contribution for the fiscal year minus the Expected Normal Cost for the year. The Employer Contribution for the first fiscal year is determined by the actuarial valuation two years ago and the contribution for the second year is from the actuarial valuation one year ago. Additional discretionary payments are reflected in the Expected Payments column in the fiscal year they were made by the agency.

Schedule of Plan's Amortization Bases (Continued)

Scotts Valley Fire Protection District (Pre-Merger)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escala-tion Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Fresh Start	6/30/2021				N/A	(157,045)	(38,986)	(127,434)	(39,163)	(95,627)	0
Total						**(157,045)**	**(38,986)**	**(127,434)**	**(39,163)**	**(95,627)**	**0**

Branciforte Fire Protection District (Pre-Merger)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escala-tion Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Fresh Start	6/30/2021	No Ramp		0.00%	5	(1,199)	(1,780)	559	(1,830)	2,488	584
Total						**(1,199)**	**(1,780)**	**559**	**(1,830)**	**2,488**	**584**

Scotts Valley Fire Protection District (Post-Merger)

Reason for Base	Date Est.	Ramp Level 2023-24	Ramp Shape	Escala-tion Rate	Amort. Period	Balance 6/30/21	Expected Payment 2021-22	Balance 6/30/22	Expected Payment 2022-23	Balance 6/30/23	Minimum Required Payment 2023-24
Fresh Start	6/30/2021				N/A	(157,045)	(38,986)	(127,434)	(39,163)	(95,627)	0
Merger (Branciforte)	6/30/2021	No Ramp		0.00%	5	(1,199)	(1,780)	559	(1,830)	2,488	584
Total						**(158,244)**	**(40,766)**	**(126,875)**	**(40,993)**	**(93,139)**	**584**

Future Investment Return Scenarios

Analysis using the investment return scenarios from the Asset Liability Management process completed in 2021 was performed to determine the effects of various future investment returns on required employer contributions. The projections below reflect the impact of the CalPERS Funding Risk Mitigation policy. The projected normal cost rates reflect that the rates are anticipated to decline over time as new employees are hired into lower-cost benefit tiers. The projections also assume that all other actuarial assumptions will be realized and that no further changes in assumptions, contributions, benefits, or funding will occur.

The first table shows projected contribution requirements if the fund were to earn either 3.0% or 10.8% annually. These alternate investment returns were chosen because 90% of long-term average returns are expected to fall between them over the 20-year period ending June 30, 2041.

Scotts Valley Fire Protection District (Pre-Merger)

Assumed Annual Return FY 2021-22 through FY 2040-41	Projected Employer Contributions				
	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
3.0% (5th percentile)					
Normal Cost Rate	13.5%	13.5%	13.5%	13.5%	13.5%
UAL Contribution	$0	$1,100	$4,000	$8,600	$15,000
10.8% (95th percentile)					
Normal Cost Rate	13.9%	14.3%	14.1%	14.5%	14.8%
UAL Contribution	$0	$0	$0	$0	$0

Scotts Valley Fire Protection District (Post-Merger)

Assumed Annual Return FY 2021-22 through FY 2040-41	Projected Employer Contributions				
	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
3.0% (5th percentile)					
Normal Cost Rate	13.5%	13.5%	13.5%	13.5%	13.5%
UAL Contribution	$600	$1,720	$4,650	$9,290	$15,170
10.8% (95th percentile)					
Normal Cost Rate	13.9%	14.3%	14.1%	14.5%	14.8%
UAL Contribution	$570	$550	$0	$0	$0

Required contributions outside of this range are also possible. In particular, whereas it is unlikely that investment returns will average less than 3.0% or greater than 10.8% over a 20-year period, the likelihood of a single investment return less than 3.0% or greater than 10.8% in any given year is much greater. The following analysis illustrates the effect of an extreme, single year investment return.

The portfolio has an expected volatility (or standard deviation) of 12.0% per year. Accordingly, in any given year there is a 16% probability that the annual return will be -5.2% or less and a 2.5% probability that the annual return will be -17.2% or less. These returns represent one and two standard deviations below the expected return of 6.8%.

The following table shows the effect of a one or two standard deviation investment loss in FY 2021-22 on the FY 2024-25 contribution requirements. Note that a single-year investment gain or loss decreases or increases the required UAL contribution amount incrementally for each of the next five years, not just one, due to the 5-year ramp in the amortization policy. However, the contribution requirements beyond the first year are also impacted by investment returns beyond the first year. Historically, significant downturns in the market are often followed by higher than average returns. Such investment gains would offset the impact of these single year negative returns in years beyond FY 2024-25.

Future Investment Return Scenarios (Continued)

Scotts Valley Fire Protection District (Pre-Merger)

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	FY 2023-24	FY 2024-25
(17.2%) (2 standard deviation loss)		
Normal Cost Rate	13.54%	13.5%
UAL Contribution	$0	$8,300
(5.2%) (1 standard deviation loss)		
Normal Cost Rate	13.54%	13.5%
UAL Contribution	$0	$3,000

Scotts Valley Fire Protection District (Post-Merger)

Assumed Annual Return for Fiscal Year 2021-22	Required Employer Contributions	Projected Employer Contributions
	FY 2023-24	FY 2024-25
(17.2%) (2 standard deviation loss)		
Normal Cost Rate	13.54%	13.5%
UAL Contribution	$584	$8,950
(5.2%) (1 standard deviation loss)		
Normal Cost Rate	13.54%	13.5%
UAL Contribution	$584	$3,620

- Without investment gains (returns higher than 6.8%) in year FY 2022-23 or later, projected contributions rates would continue to rise over the next four years due to the continued phase-in of the impact of the illustrated investment loss in FY 2021-22.
- The Pension Outlook Tool can be used to model projected contributions for these scenarios beyond FY 2024-25 as well as to model other investment return scenarios.

Discount Rate Sensitivity

The discount rate assumption is calculated as the sum of the assumed real rate of return and the assumed annual price inflation, currently 4.5% and 2.3%, respectively. Changing either the price inflation assumption or the real rate of return assumption will change the discount rate. The sensitivity of the valuation results to the discount rate assumption depends on which component of the discount rate is changed. Shown below are various valuation results as of June 30, 2021 assuming alternate discount rates by changing the two components independently. Results are shown using the current discount rate of 6.8% as well as alternate discount rates of 5.8% and 7.8%. The rates of 5.8% and 7.8% were selected since they illustrate the impact of a 1.0% increase or decrease to the 6.8% assumption.

Sensitivity to the Real Rate of Return Assumption

Scotts Valley Fire Protection District (Pre-Merger)

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	34.35%	27.29%	21.95%
b) Accrued Liability	$1,976,736	$1,616,496	$1,334,460
c) Market Value of Assets	$1,773,541	$1,773,541	$1,773,541
d) Unfunded Liability/(Surplus) [(b) - (c)]	$203,195	($157,045)	($439,081)
e) Funded Status	89.7%	109.7%	132.9%

Scotts Valley Fire Protection District (Post-Merger)

As of June 30, 2021	1% Lower Real Return Rate	Current Assumptions	1% Higher Real Return Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	2.3%	2.3%	2.3%
Real Rate of Return	**3.5%**	**4.5%**	**5.5%**
a) Total Normal Cost	34.35%	27.29%	21.95%
b) Accrued Liability	$1,990,645	$1,626,732	$1,342,192
c) Market Value of Assets	$1,784,976	$1,784,976	$1,784,976
d) Unfunded Liability/(Surplus) [(b) - (c)]	$205,669	($158,244)	($442,784)
e) Funded Status	89.7%	109.7%	133.0%

Discount Rate Sensitivity (continued)

Sensitivity to the Price Inflation Assumption

Scotts Valley Fire Protection District (Pre-Merger)

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	**1.3%**	**2.3%**	**3.3%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	28.79%	27.29%	24.69%
b) Accrued Liability	$1,690,109	$1,616,496	$1,469,331
c) Market Value of Assets	$1,773,541	$1,773,541	$1,773,541
d) Unfunded Liability/(Surplus) [(b) - (c)]	($83,432)	($157,045)	($304,210)
e) Funded Status	104.9%	109.7%	120.7%

Scotts Valley Fire Protection District (Post-Merger)

As of June 30, 2021	1% Lower Inflation Rate	Current Assumptions	1% Higher Inflation Rate
Discount Rate	**5.8%**	**6.8%**	**7.8%**
Inflation	**1.3%**	**2.3%**	**3.3%**
Real Rate of Return	4.5%	4.5%	4.5%
a) Total Normal Cost	28.79%	27.29%	24.69%
b) Accrued Liability	$1,700,799	$1,626,732	$1,478,752
c) Market Value of Assets	$1,784,976	$1,784,976	$1,784,976
d) Unfunded Liability/(Surplus) [(b) - (c)]	($84,177)	($158,244)	($306,224)
e) Funded Status	104.9%	109.7%	120.7%

Mortality Rate Sensitivity

The following tables look at the change in the June 30, 2021 plan costs and funded ratio under two different longevity scenarios, namely assuming post-retirement rates of mortality are 10% lower or 10% higher than our current mortality assumptions adopted in 2021. This type of analysis highlights the impact on the plan on a future change in the mortality assumption

Scotts Valley Fire Protection District (Pre-Merger)

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	27.65%	27.29%	26.95%
b) Accrued Liability	$1,642,763	$1,616,496	$1,592,033
c) Market Value of Assets	$1,773,541	$1,773,541	$1,773,541
d) Unfunded Liability/(Surplus) [(b) - (c)]	($130,778)	($157,045)	($181,508)
e) Funded Status	108.0%	109.7%	111.4%

Scotts Valley Fire Protection District (Post-Merger)

As of June 30, 2021	10% Lower Mortality Rates	Current Assumptions	10% Higher Mortality Rates
a) Total Normal Cost	27.65%	27.29%	26.95%
b) Accrued Liability	$1,653,127	$1,626,732	$1,602,149
c) Market Value of Assets	$1,784,976	$1,784,976	$1,784,976
d) Unfunded Liability/(Surplus) [(b) - (c)]	($131,849)	($158,244)	($182,827)
e) Funded Status	108.0%	109.7%	111.4%

Maturity Measures

As pension plans mature they become more sensitive to risks. Understanding plan maturity and how it affects the ability of a pension plan sponsor 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 increases. A mature plan will often have a ratio above 60%-65%.

Scotts Valley Fire Protection District as of June 30, 2021

Ratio of Retiree Accrued Liability to Total Accrued Liability	Pre-Merger	Post-Merger
1. Retired Accrued Liability	$210,089	$210,089
2. Total Accrued Liability	1,616,496	1,626,732
3. Ratio of Retiree AL to Total AL [(1) / (2)]	0.13	0.13

Another measure of the maturity level of CalPERS and its plans is the ratio of actives to retirees, also called the support ratio. 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 declines. A mature plan will often have a ratio near or below one.

To calculate the support ratio for the rate plan, retirees and beneficiaries receiving a continuance are each counted as one, even though they may have only worked a portion of their careers as an active member of this rate plan. For this reason, the support ratio, while intuitive, may be less informative than the ratio of retiree liability to total accrued liability above. For comparison, the support ratio for all CalPERS public agency plans is 0.82 and is calculated consistently with how it is for the individual rate plan. Note that to calculate the support ratio for all public agency plans, a retiree with service from more than one CalPERS agency is counted as a retiree more than once.

Scotts Valley Fire Protection District as of June 30, 2021

Support Ratio	Pre-Merger	Post-Merger
1. Number of Actives	14	15
2. Number of Retirees	1	1
3. Support Ratio [(1) / (2)]	14.00	15.00

Maturity Measures (Continued)

Actuarial calculations are based on a number of assumptions about long-term demographic and economic behavior. Unless these assumptions (e.g., 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 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.

Scotts Valley Fire Protection District as of June 30, 2021

Contribution Volatility	Pre-Merger	Post-Merger
1. Market Value of Assets	$1,773,541	$1,784,976
2. Payroll	1,552,088	1,622,963
3. Asset Volatility Ratio (AVR) [(1) / (2)]	1.1	1.1
4. Accrued Liability	$1,616,496	$1,626,732
5. Liability Volatility Ratio (LVR) [(4) / (2)]	1.0	1.0

Participant Data

The table below summarizes changes in the plan's member data.

June 30, 2021	Scotts Valley Fire Protection District (Pre-Merger)	Branciforte Fire Protection District (Pre- Merger)	Scotts Valley Fire Protection District (Post-Merger)
Reported Payroll	$1,552,088	$70,875	$1,622,963
Projected Payroll for Contribution Purposes	$1,686,148	$76,997	$1,763,145
Number of Members			
Actives	14	1	15
Transferred	1	1	2
Separated	1	0	1
Retired	1	0	1
Total	17	2	19

Additional Disclosure

If your agency is requesting cost information for two or more benefit changes, the cost of adopting more than one of these changes **may not** be obtained by adding the individual costs. Instead, a separate valuation must be done to provide a cost analysis for the combination of benefit changes.

Please note that the cost analysis provided in this document **may not** be relied upon after July 1, 2023. If you have not taken action to 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, 2021 annual report. Please note that the results shown here are subject to change if any of the data or plan provisions differ from what was used in this study.

Certification

This actuarial valuation for the proposed merger is based on the participant, benefits, and asset data used in the June 30, 2021 annual valuation, with the benefits modified, if necessary, to reflect what is currently provided under the agency's contract with CalPERS, and further modified to reflect the proposed merger. It is my opinion that 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.

David Clement

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