Marin County Employees' Retirement Association
Actuarial Review and Analysis as of June 30, 2022
Novato Fire Protection District

Valuation Date	**June 30, 2021**		**June 30, 2022**	
Actuarial Liability	$223.6 M	Funded Ratio	$232.0 M	Funded Ratio
Market Value of Valuation Assets	$235.3 M	105.2%	$209.8 M	90.4%
Unfunded Actuarial Liability	($11.6) M		$22.2 M	
Inactive Actuarial Liability	$151.9 M		$161.2 M	
Portion Covered by Market Value of Valuation Assets	100.0%		100.0%	
Employer Normal Cost	22.93%		22.39%	
Amortization of Unfunded Liability	18.01%		19.78%	
Administrative Expense Rate	2.07%		2.10%	
Total Employer Rate	43.01%		44.27%	
Average Employee Rate	15.72%		15.73%	
Final Total Rate	58.73%		60.00%	

Changes from Prior Year:

- Overall, the employer portion of Plan cost increased from 43.01% to 44.27% of active member payroll.
  - Asset experience produced an investment loss, which increased the contribution rate by 5.32% of pay.
  - The drawdown of a $2.4 million contingency reserve decreased the contribution rate by 0.33% of pay.
  - Demographic experience of the Plan was close to the actuarial assumptions, decreasing the contribution rate for Novato by 0.06%,
  - PEPRA new hires make up a growing proportion of the active population and generally contribute a larger share of their cost, decreasing the contribution rate by 0.44%.
  - Liability-weighted salary increases were higher than expected, increasing the contribution rate by 0.09% of pay.
  - Lower than expected overall payroll growth meant that the UAL must be amortized over a smaller than expected payroll base, which increased the contribution rate by 0.77%.
  - There was an expected change in amortization due to the phase-in of prior UAL gains, losses, and assumption changes. This decreased the contribution rate by 4.09%.

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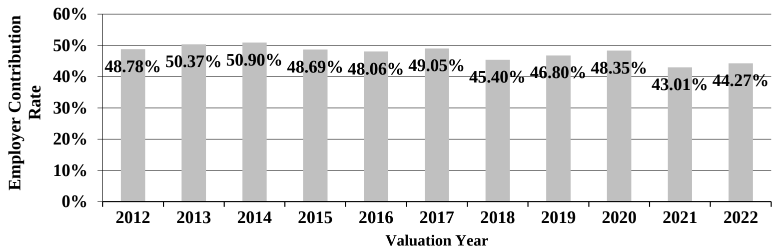
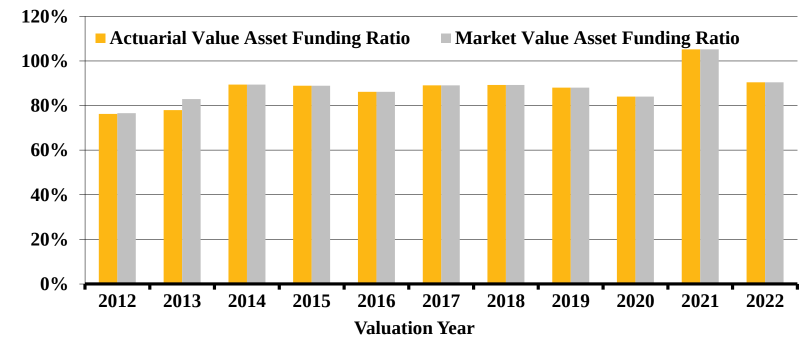
Employer Contribution Rate as a Percentage of Member Payroll



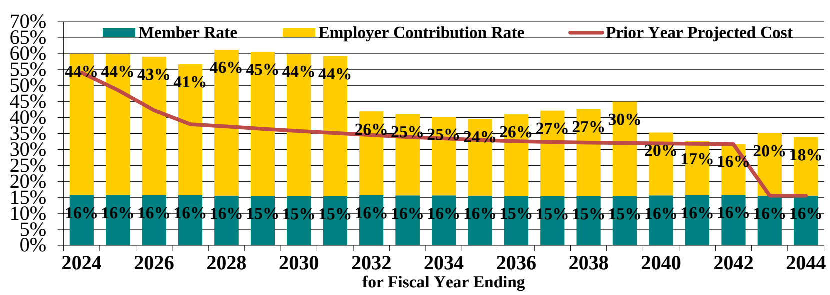
Net investment gains over the past few years have decreased the employer rate, offset by changes in the actuarial assumptions.

Plan Funded Ratios



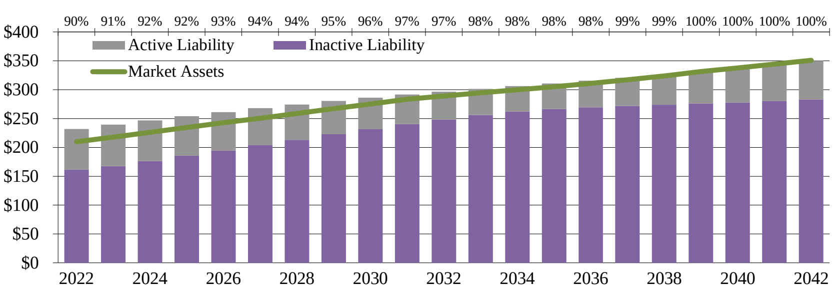
The above graph shows the funded ratio, both at Market and Actuarial Value of Assets. Beginning in 2014, the Actuarial Value of Assets is equal to the market value. The 2022 funded ratio of 90.4% is 14% higher than the 2012 funded ratio of 76.3% despite being calculated under significantly more conservative assumptions.

Projection of Employer Cost as a Percentage of Member Payroll



Provided assumptions are met, contribution rates are expected to remain relatively level over the next four years as the significant 2021 investment gain and 2022 investment loss are phased-in. A large reduction in the employer rate is projected in FYE 2032 as the original UAL base is fully amortized. A moderate long-term decline is projected as the PEPRA population continues to grow.

Projection of Funded Ratio Based on Actuarial Liability



Provided assumptions are met, the funded ratio (shown by the numbers along the top of the graph) will improve as the remainder of the initial unfunded liability and extraordinary loss from FYE 2009 are paid off. This graph and the prior graph assume an 8-year amortization period for the bulk of the UAL.

Sensitivity Analysis:	2022 Baseline	+1%	-1%
Expected Long-Term Rate of Return	6.75%	7.75%	5.75%
Employer Cost	44.27%	18.48%	68.98%
Funding Ratio	90.4%	101.5%	79.8%

Investment Earnings:	FY 2021	FY 2022
Market Value	32.0%	(8.6%)
Expected	6.75%	6.75%

Projected Payroll:	FY 2022	FY 2023
Total	$10.9 M	$10.8 M

Projected Employer Contribution:	FY 2023	FY 2024
Total Employer Rate	43.01%	44.27%
Projected Covered Payroll	$11.2 M	$11.1 M
Expected Employer Contribution	$4.8 M	$4.9 M

Beginning in 2014, the Market and Actuarial Value of Assets are the same.

The employer costs in the sensitivity analysis are calculated assuming that the change in UAL due to the discount rate change is amortized over a 20-year period as a level percent of payroll with no phase-in/out.

Actuarial Cost Method	Entry Age Normal to Final Decrement (GASB 67/68 compliant)
Amortization Method	Level % of pay; closed.
Remaining Amortization Period	17 years, fixed (8 years remaining as of June 30, 2022).
	Half of the extraordinary asset loss from FY 2009 is being amortized as a level percentage of payroll over a closed 30-year period, with 16 years remaining as of June 30, 2022.
	Any subsequent unexpected change in the Unfunded Actuarial Liability after June 30, 2013 is amortized over 24 years (22 years for assumption changes) that includes a 5-year phase-in/out (3 years for assumption changes) of the payments/credits for each annual layer.
Asset Valuation Method	As of the June 30, 2014 valuation, assets are valued using the market value. The assets used to compute the UAL are the Market Value of Assets, minus the value of any non-valuation contingency reserves.

Actuarial Economic Assumptions:

Long-Term Inflation Rate	2.50%
Real Rate of Return	4.25%
Nominal Rate of Return	6.75% (net of investment, but not administrative, expenses)
Projected Salary Increases	3.77% – 9.18%
Wage Inflation	3.00%
Payroll Growth	2.75%

Disclaimers: This exhibit is intended to summarize the information presented in the June 30, 2022 Actuarial Valuation Report for MCERA. In preparing our valuation, we relied on information (some oral and some written) supplied by MCERA Staff. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23. This exhibit was prepared exclusively for MCERA for the purpose described herein. Other users of this exhibit are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user. This exhibit and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this exhibit. This exhibit does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice. Cheiron utilizes ProVal, an actuarial valuation application leased from Winklevoss Technologies (WinTech), to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal, have a basic understanding of it, and have used it in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this report. The deterministic projections shown in this report were developed using R-scan, our proprietary stochastic projection tool for assessing probabilities of different outcomes. The projections use standard roll-forward techniques that implicitly assume a stable active population. Changes in the demographic characteristics of the active population will lead to different results. We have relied on Cheiron colleagues who developed the tool, and we have used the tool in accordance with its purpose.