

Tulare County Employees' Retirement Association

Actuarial Valuation Report as of June 30, 2021

Produced by Cheiron

October 2021

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October 27, 2021

Board of Retirement
Tulare County Employees' Retirement Association
136 N. Akers St.
Visalia, California 93291

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the Tulare County Employees' Retirement Association (TCERA, the System, the Fund, the Plan) as of June 30, 2021. This report contains information on the System's assets, liabilities, and discloses employer contribution levels. Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report.

The purpose of this report is to present the results of the annual actuarial valuation of TCERA. This report was prepared for the TCERA Board of Retirement for the purposes described herein and for use by the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of 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 report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

Sincerely,
Cheiron



Graham A. Schmidt, ASA, FCA, MAAA, EA
Consulting Actuary



Steven M. Hastings, FSA, FCA, MAAA, EA
Consulting Actuary

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

FOREWORD

Cheiron has performed the actuarial valuation of the Tulare County Employees' Retirement Association as of June 30, 2021. The valuation is organized as follows:

- In Section I, the **Executive Summary**, we describe the purpose of an actuarial valuation, summarize the key results found in this valuation, and disclose important trends.
- The **Main Body** of the report presents details on the System's
 - Section II – Disclosures Related to Risk
 - Section III – Assets
 - Section IV – Liabilities
 - Section V – Contributions
 - Section VI – Comprehensive Annual Financial Reporting Information
- In the **Appendices**, we conclude our report with detailed information describing plan membership (Appendix A), actuarial assumptions and methods employed in the valuation (Appendix B), a summary of pertinent plan provisions (Appendix C), a glossary of key actuarial terms (Appendix D), and tables containing member contribution rates (Appendix E).

Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

This report was prepared using census data and financial information as of the valuation date, June 30, 2021. Events following that date are not reflected in this report. Whereas there remains a lot of uncertainty, we continue to monitor developments regarding the COVID-19 pandemic and the impact it may have on TCERA. Actual experience, both demographic and economic, will be reflected in subsequent valuations as experience emerges.

In preparing our report, we relied on information (some oral and some written) supplied by the TCERA staff. This information includes, but is not limited to, 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.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION I – EXECUTIVE SUMMARY

The primary purpose of the actuarial valuation and this report is to measure, describe, and identify the following as of the valuation date:

- The funded status of the System,
- Past and expected trends in the funding progress of the System,
- Employer and employee contribution rates for Plan Year 2022-2023,
- An assessment and disclosure of key risks, and
- Information required by the GFOA for the Annual Comprehensive Financial Report (ACFR).

In the balance of this Executive Summary, we present (A) the basis upon which this year's valuation was completed, (B) the key findings of this valuation including a summary of all key results, (C) an examination of the historical trends, and (D) the projected outlook for the System.

A. Valuation Basis

This valuation determines the employer contributions required for the employers' fiscal years beginning July 1, 2022. The System's funding policy is to collect contributions from the employers and employees equal to the sum of (1) the normal cost under the Entry Age Normal Cost Method and (2) amortization of the Unfunded Actuarial Liability.

The Unfunded Actuarial Liability (UAL) is the excess of the Actuarial Liability over the Actuarial Value of Assets. Based on the funding policy adopted by the Board at its October 28, 2015 meeting, the UAL payment in the current valuation is the amount needed to fund the June 30, 2015 UAL over a closed 19-year period with payments as a level percentage of payroll, assuming payroll increases of 3.00% per year, with subsequent gains and losses being amortized over new 19-year closed periods, also as a level percentage of payroll.

Actuarial experience studies are performed every three years. This valuation was performed using the economic and demographic assumptions adopted by the Board, which are based on the experience study presented by Cheiron on September 23, 2020 and described in detail in a follow-up report delivered to the Board in October 2020. The Board decided to phase in the impact of the June 30, 2020 assumption changes on the employer contribution rate over the next three fiscal years, with two years remaining as of June 30, 2021. There are no assumption changes for this valuation. The discount rate remains 7.00%. A summary of the assumptions and methods used in the current valuation is shown in Appendix B.

At the direction of the Board, the UAL and contribution rates shown in Tables I-1 and I-4 do not reflect any estimated liabilities associated with future transfers to the Supplemental Retiree Benefit Reserve (SRBR). An estimate of this liability has been disclosed in Table IV-4.

This valuation was prepared based on the plan provisions shown in Appendix C. There have been no changes to the plan provisions since the last valuation. This valuation does not include any consideration of external liabilities (or related debt service payments) incurred by the Plan sponsors outside of TCERA, such as those related to pension obligation bonds.

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SECTION I – EXECUTIVE SUMMARY

B. Key Findings of this Valuation

The key results of the June 30, 2021 actuarial valuation are as follows:

- The average actuarially determined employer contribution rate decreased from 15.68% of payroll to 15.65% of payroll, before reflecting the three year phase-in of the June 30, 2020 assumption changes. The employer contribution rate after the phase-in is 15.19%. Information on the contribution rates and changes from last year to this year may be found in Tables I-4 and I-5.
- The largest factor affecting the employer contribution rate was an increase of 0.45% from the continued phase-in of the impact of assumption changes adopted by the Board concurrent with the 2020 valuation; an identical amount will be recognized in the next valuation. The decision to phase-in the impact of the assumption changes will increase the employer contribution rate slightly in future years, but only by approximately 0.1% of payroll for the length of the amortization period.
- There was also a 0.05% decrease due to investment gains for the plan year ending June 30, 2021. On a Market Value of Assets basis, the Plan earned 24.49%, as compared to the prior year's 7.00% assumed return. On a smoothed (Actuarial Value of Assets) basis, the return was 7.13%.
- The UAL is the excess of the System's Actuarial Liability over the Actuarial Value of Assets. The System experienced a decrease in the UAL from \$205.0 million as of June 30, 2020 to \$199.0 million as of June 30, 2021. The \$6.1 million decrease in the UAL was primarily due to investment and demographic gains, which decreased the UAL by \$11.9 million for the plan year ending June 30, 2021 but were partially offset by contributions being less than the actuarial cost. A detailed reconciliation of the components of change in the UAL is shown in Table I-3.
- The remaining balance of the June 30, 2015 UAL is being amortized over 13 years and the remaining balances for each of the subsequent UAL layers are being amortized over periods that extend by one additional year each (e.g., the UAL loss from the plan year ending June 30, 2016 is being amortized over 14 years). Finally, the UAL loss for the plan year ending June 30, 2021 is being amortized as a new 19-year layer.
- The System's funded ratio, the ratio of actuarial assets over Actuarial Liability, increased from 89.1% last year to 89.8% as of June 30, 2021. On a market value basis, the funded ratio increased from 80.3% last year to 95.4% this year. The Actuarial Value of Assets is lower than the market value, meaning that there are deferred investment gains that will be recognized in the Actuarial Value of Assets (and employer contributions) in future years.
- During the 2020-2021 Plan year, the actuarial liabilities of the System increased less than expected. The liability gains were associated primarily with salary increases that were lower than expected, particularly for General non-PEPRA members, as well as more deaths than expected. These gains were partially offset by termination and retirement experience. In total, the liability gains decreased the Actuarial Liability by \$9.8 million.

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SECTION I – EXECUTIVE SUMMARY

- Overall participant membership increased compared to last year, from 10,196 to 10,251. The total active population decreased from 4,605 to 4,484 and total projected payroll increased from \$284,272,002 to \$286,886,367. The number of inactives increased from 2,183 to 2,295, while the number of retirees increased from 3,408 to 3,472.
- In Table IV-4 of this valuation, we have disclosed a liability of \$174.9 million associated with future transfers to the Supplemental Retiree Benefit Reserve (SRBR). This represents an increase of roughly \$100 million compared to last year due primarily to exceptional investment returns and the unrecognized asset gains associated with them. These gains will flow to the Actuarial Value of Assets over 10 years and significantly increase the likelihood of future transfers.

The liability associated with future transfers is based on a simulation of investment returns and represents the accrued portion of the present value of SRBR transfers expected to result from future returns on the Actuarial Value of Assets in excess of the 7.00% assumption. It has not been reflected in the calculation of the employer contribution rate. Future SRBR transfers would result in lower net asset experience, which will be reflected in future amortization layers.

If the liability for future SRBR transfers were to be pre-funded, the employer contribution would be approximately \$14.2 million higher, or about 5.0% of pay. We have also disclosed a liability of \$100.3 million associated with the current SRBR balance, which is equal to the current balance of the SRBR, less the portion assumed to represent future benefit accruals. Note that the disclosure of these liabilities does not imply that the current benefit levels are guaranteed. Our understanding is that the Board has the power to adjust the benefit amounts paid from the SRBR.

On the following pages, we present Tables I-1 and I-2, which summarize the key results of the valuation with respect to TCERA assets, liabilities, Unfunded Actuarial Liability, funded ratios, and membership. The results are presented and compared for both the current and prior plan year.

The leverage ratios are equal to the Market Value of Assets (or Actuarial Liability) divided by payroll and represent a measure of the size of the plan relative to the plan sponsor. For additional discussion, see the discussion of maturity measures in Section II of this report.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION I – EXECUTIVE SUMMARY

Table I-1			
Summary of Key Valuation Results - Funded Status			
(in thousands)			
Valuation Date	June 30, 2020	June 30, 2021	% Change
Actuarial Liability	\$ 1,875,797	\$ 1,957,985	4.4%
Market Value of Assets	\$ 1,615,418	\$ 1,976,185	22.3%
Market Value of Assets (Excluding SRBR)	1,507,070	1,867,739	23.9%
Actuarial Value of Assets (Excluding SRBR)	1,670,786	1,759,025	5.3%
Unfunded Actuarial Liability (UAL)			
- based on Market Value of Assets	\$ 368,727	\$ 90,246	-75.5%
- based on Actuarial Value of Assets	205,011	198,960	-3.0%
Funding Ratio - Market value basis	80.3%	95.4%	15.0%
Funding Ratio - Actuarial value basis	89.1%	89.8%	0.8%
Expected Payroll	\$ 284,272	\$ 286,886	0.9%
Asset Leverage Ratio (Excluding SRBR)	5.3	6.5	22.8%
Actuarial Liability Leverage Ratio	6.6	6.8	3.4%
Interest on UAL (MVA basis)	\$ 25,811	\$ 6,317	-75.5%
Interest Cost as Percent of Payroll	9.1%	2.2%	-6.9%

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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Table I-2			
Membership Total			
Item	June 30, 2020	June 30, 2021	% Change
Actives	4,605	4,484	-2.6%
Inactives	2,183	2,295	5.1%
Members Receiving Benefits	<u>3,408</u>	<u>3,472</u>	<u>1.9%</u>
Total Members	10,196	10,251	0.5%
Ratio of Retired Members to Active Members	74.0%	77.4%	3.4%
Active Member Projected Payroll for FYE June 30, 2021 and 2022	\$ 284,272,002	\$ 286,886,367	0.9%
Average Pay per Active	\$ 61,731	\$ 63,980	3.6%

The Unfunded Actuarial Liability (UAL) for TCERA decreased by \$6.1 million, from \$205.0 million to \$199.0 million. Table I-3 below presents the specific components of the change in the UAL.

The UAL was expected to decrease by \$4.7 million, due to the scheduled amortization payment being greater than the interest on the UAL. Liability experience gains decreased the UAL by an additional \$9.8 million and asset gains – i.e., the smoothed investment return above last year's assumed rate of 7.00% – decreased the UAL by \$2.1 million. Contributions were less than the actuarial cost, due to the phase-in of the assumption changes and the 12-month delay in the implementation of the contribution rates, increasing the UAL by \$10.5 million. A detailed breakdown of the liability experience can be found in Table IV-2.

Table I-3	
Change in Unfunded Actuarial Liability	
Experience	(in thousands)
Unfunded actuarial liability, 6/30/2020	\$ 205,011
Expected change in unfunded actuarial liability	(4,668)
Decrease due to investment gain	(2,068)
Increase due to contributions less than actuarial cost	10,524
Decrease due to liability gain	(9,840)
Increase due to assumption changes	<u>0</u>
Total change in unfunded actuarial liability	\$ (6,052)
Unfunded actuarial liability, 6/30/2021	\$ 198,960

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION I – EXECUTIVE SUMMARY

Employer and Employee Contributions

Table I-4 below compares the net employer contribution rate and its components to those from the prior year. The overall net employer contribution rate (prior to the phase-in of the assumption changes) decreased by 0.04% for the June 30, 2021 valuation. The net employer normal cost rate decreased by 0.14% and the UAL rate increased by 0.10%. The average employee rate decreased by 0.02%, from 9.10% to 9.08%.

Additional details on contributions may be found in Section V, including separate rates for the County versus the other employers, which have been included in this report to reflect the Board's decision to allocate the cost impact of the POB contribution to the County only. Future investment experience related to the POB contribution will be shared amongst all TCERA employers.

**Table I-4
Summary of Contributions ***

	FYE 2022	FYE 2023	Change
<u>Contribution Rates</u>			
Net Employer Contribution Rate	15.68%	15.65%	-0.04%
Estimated Employee Contribution Rate	<u>9.10%</u>	<u>9.08%</u>	-0.02%
Total Contribution Rate	24.79%	24.73%	-0.06%
Net Employer Contribution Rate with Phase-in	14.78%	15.19%	
Estimated Net Employer Contributions <i>(in thousands)</i>	\$ 43,234	\$ 44,904	\$ 1,670
<u>Total Contribution Rate</u>			
Estimated Employee Contribution Rate	9.10%	9.08%	-0.02%
Employer Normal Cost Rate	<u>9.21%</u>	<u>9.08%</u>	-0.14%
Total Normal Cost Rate	18.32%	18.16%	-0.16%
UAL Rate			
Interest on Market Value UAL	9.08%	2.20%	-6.88%
Principal on Market Value UAL	<u>-2.61%</u>	<u>4.37%</u>	6.98%
Total UAL Rate	6.47%	6.57%	0.10%
Total Contribution Rate	24.79%	24.73%	-0.06%
Total Contribution Rate with Phase-in	23.88%	24.28%	0.40%

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION I – EXECUTIVE SUMMARY

Table I-5 summarizes the changes in the employer contribution rate. As discussed earlier in this section, the largest sources of change were increases due to the phase-in of prior assumption changes and contributions being less than the actuarial cost. The other source of increase was pensionable payroll increasing by less than expected. The increases were partially offset by decreases from investment and demographic gains over the past year. In aggregate, the employer contribution rate increased from 14.78% for FYE 2022 to 15.19% for FYE 2023, after reflecting the three year phase-in of the impact of the assumption changes.

Table I-5 Employer Contribution Reconciliation			
Item	Normal Cost	Amortization	Total
FYE 2022 Net Employer Contribution Rate with Phase-in	9.00%	5.78%	14.78%
Change due to asset gain	0.00%	-0.05%	-0.05%
Change due to contributions less than actuarial cost	0.00%	0.27%	0.27%
Change due to demographic gains and losses	-0.14%	-0.26%	-0.40%
Change due to payroll less than expected	0.00%	0.14%	0.14%
Change due to assumption changes	0.00%	0.00%	0.00%
Phase-in of assumption changes*	0.11%	0.35%	0.45%
Total Change in Employer Rate	-0.03%	0.45%	0.42%
FYE 2023 Net Employer Contribution Rate with Phase-in	8.97%	6.22%	15.19%

**Reflects second year of three year phase-in of assumption changes for employer contribution rate*

Numbers may not add to totals due to rounding.

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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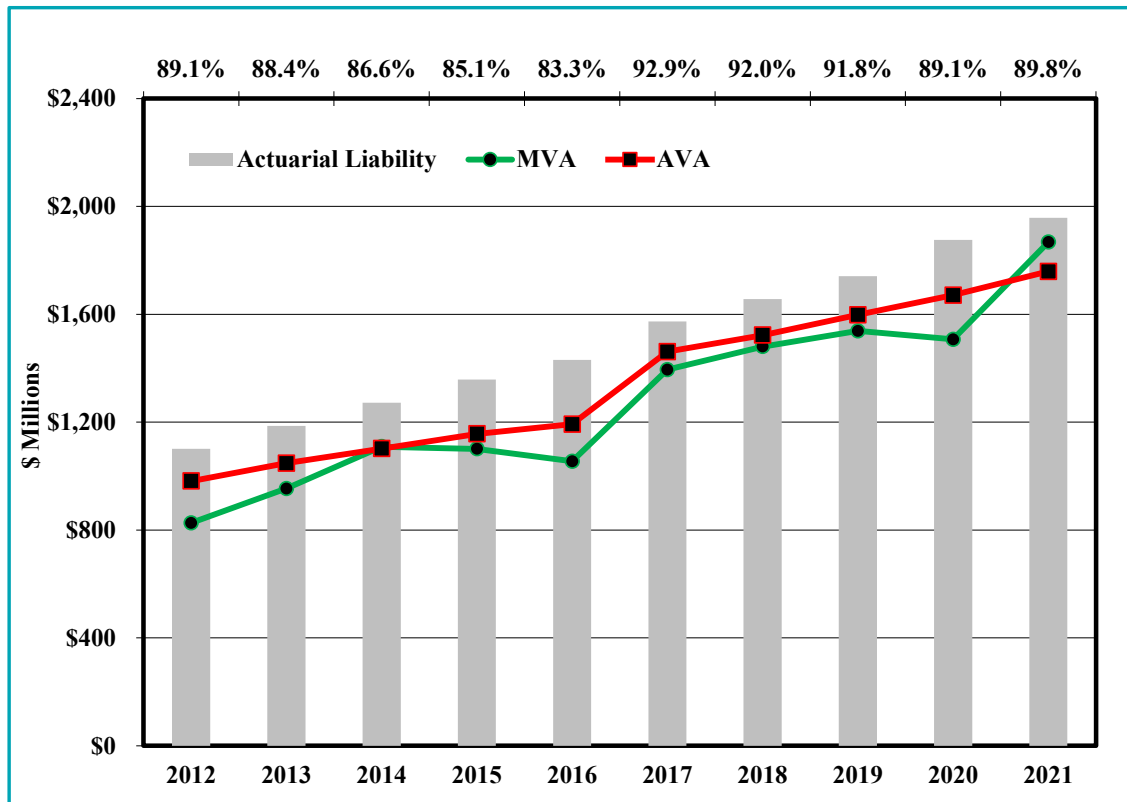
SECTION I – EXECUTIVE SUMMARY

C. Historical Trends

Despite the fact that for most retirement plans the greatest attention is given to the current valuation results and in particular the size of the current Unfunded Actuarial Liability and the employer contribution, it is important to remember that each valuation is merely a snapshot in the long-term progress of a pension fund. It is important to judge a current year's valuation result relative to historical trends, as well as trends expected into the future.

Assets and Liabilities

The chart below compares the Market Value of Assets (MVA) and Actuarial Value of Assets (AVA) to the actuarial liabilities. The percentage shown in the graph is the ratio of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio). The funded ratio had declined from 89.1% in 2012 to 83.3% in 2016 but increased to 92.9% as of June 30, 2017. The largest factor for the funding ratio decline was asset losses in 2008-2009, and the significant increase in the funded ratio in 2017 was due to the contribution from POB proceeds. For the 2021 plan year, the funding ratio increased slightly to 89.8% after decreasing the three prior years. The increase was primarily a result of demographic experience gains and investment gains compared to the assumed rate of return.



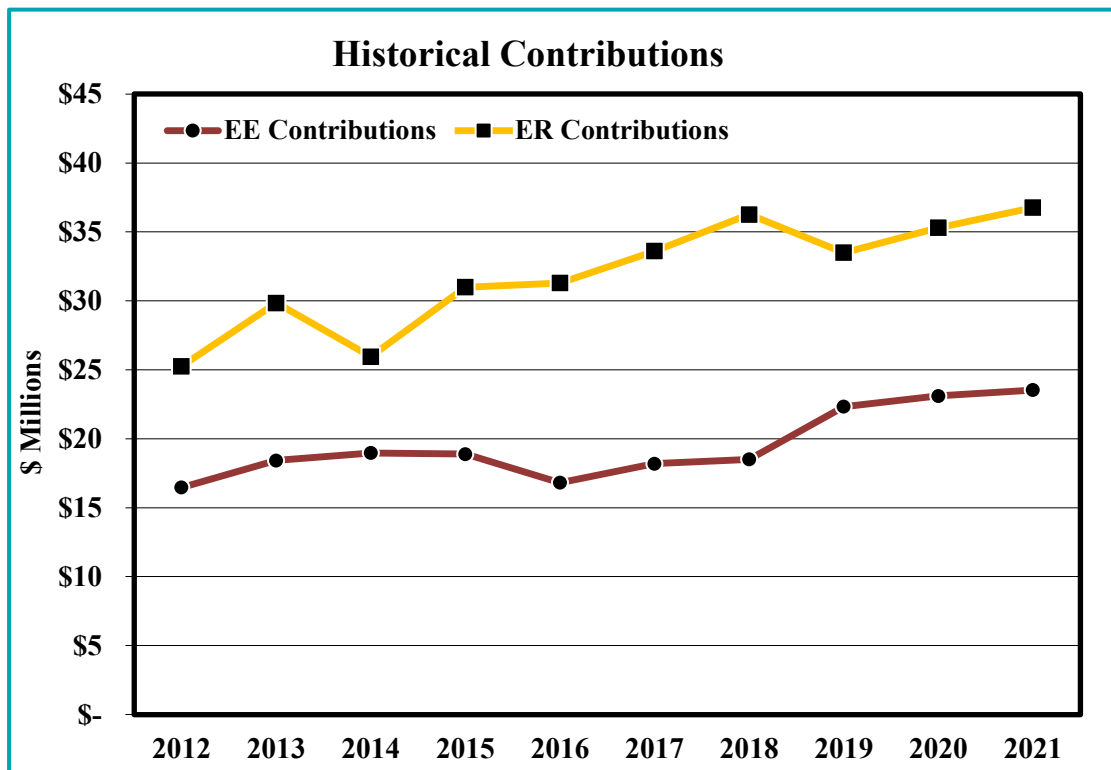
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SECTION I – EXECUTIVE SUMMARY

Contribution Trends

In the chart below, we present the historical trends for the TCERA employer and employee contributions. In the first year of the period, the employer and employee contributions were closer together, but the employer contribution rates rose as a result of the 2008-2009 asset losses that were phased in over 10 years. TCERA has also made assumption changes and experienced additional asset losses, further increasing the employer contribution rates.

Note that the employer contributions shown below do not include the contribution from POB proceeds in FY2017-2018 that exceeded the regular actuarially determined amounts.



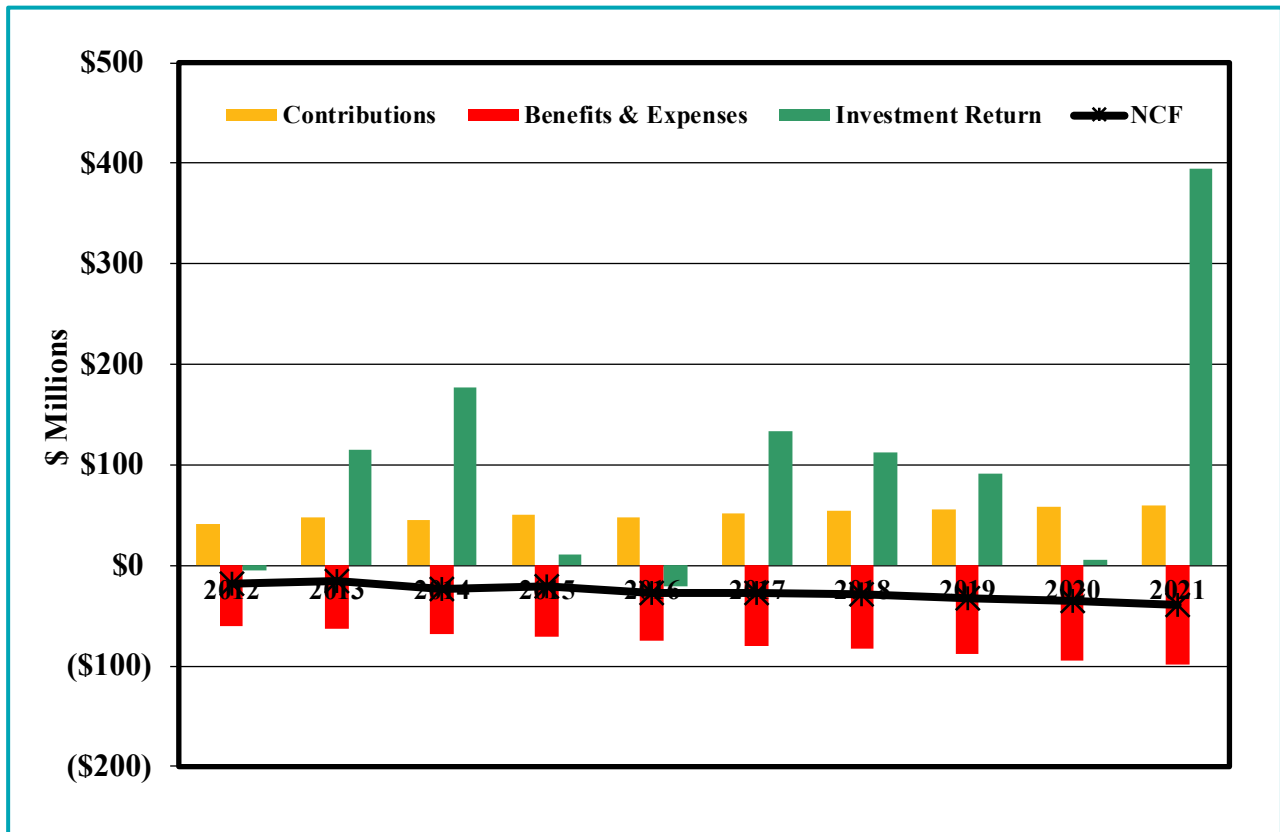
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SECTION I – EXECUTIVE SUMMARY

Cash Flows

The chart below shows the Plan's cash flow (contributions less benefit payments and administrative expenses). This is a critical measure, as it reflects the ability to have funds available to meet benefit payments without having to make difficult investment decisions, especially during volatile markets.

Note that the contributions do not include the excess contributions from POB proceeds.



In the chart above, the contributions, benefit payments plus expenses, and investment returns are shown as bars and the Plan's net cash flow (NCF) is shown as a black line. The NCF, which is equal to contributions less benefit payments and administrative expenses, began close to zero at the beginning of the 10-year period, but has grown consistently more negative over time. For the most recent year, the plan had negative cash flow of approximately 2.6% of assets (market value). A negative cash flow magnifies the losses during a market decline hindering the Plan in its ability to absorb market fluctuations. The implications of a plan in negative cash flow are that the impact of market fluctuations can be more severe: as assets are being depleted to pay benefits in down markets, there is less principal available to be reinvested during favorable return periods.

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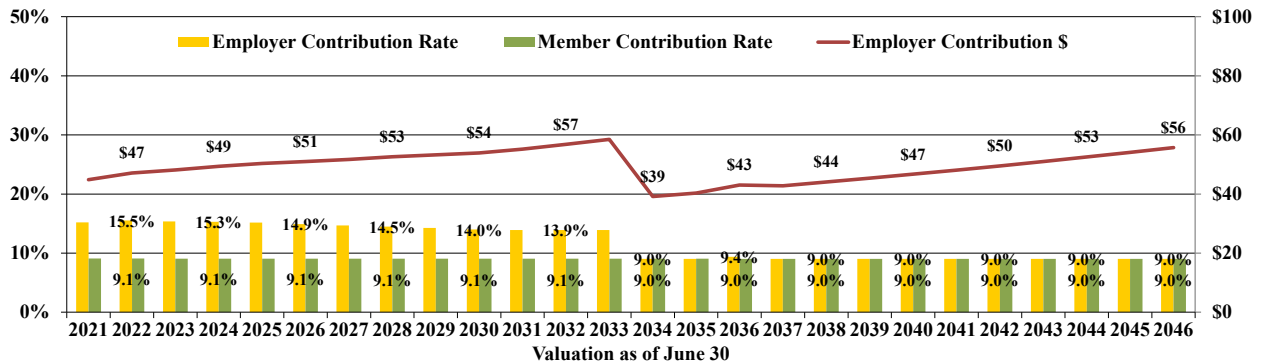
SECTION I – EXECUTIVE SUMMARY

D. Future Expected Financial Trends

The analysis of projected financial trends is an important component of this valuation. In this section, we present our assessment of the implications of the June 30, 2021 valuation results in terms of future projected contribution rates and benefit security (assets over liabilities). All the projections in this section are based on an investment return assumption of 7.00%. We have assumed future increases in total pensionable payroll of 3.00% per year.

The following graph shows the expected employer contribution rate (gold bars) and employee contribution rate (green bars) determined as of the valuation date, and the employer contribution in millions of dollars (red line) for the following fiscal year, based on achieving the investment assumption **each year** for the next 25 years. This scenario is highly unlikely: even if the Plan does achieve the assumed return **on average** over this time period, the returns in each given year will certainly vary.

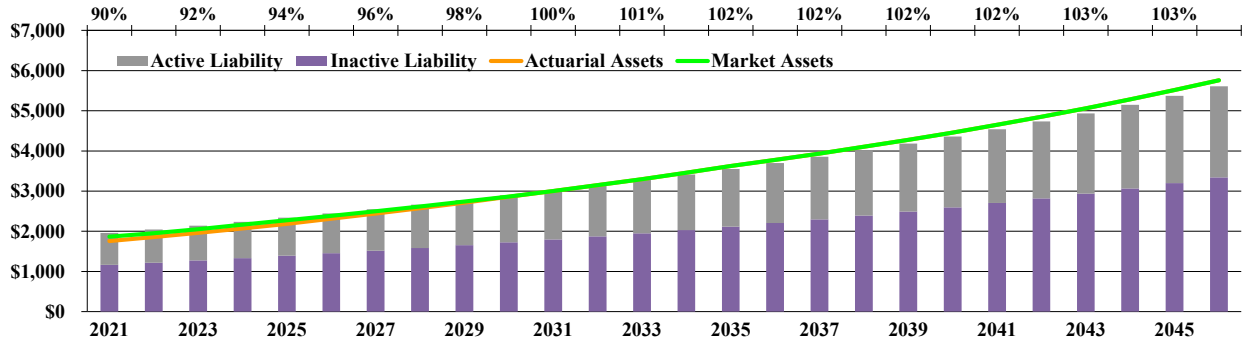
The contribution graph shows that the employer contribution rate is expected to decrease for the next nine years as the current deferred investment gains (approximately \$109 million) are recognized, then drop significantly after 2033 when the UAL layer from 2015 is paid off.



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION I – EXECUTIVE SUMMARY

The following graph shows the projection of assets and liabilities assuming that assets will earn the investment assumption each year during the projection period (dollars shown in millions). The percentages at the top of the graph represent the funded ratio or status of the System.



The funded status, based on the Actuarial Value of Assets, is expected to reach 100% by 2031 assuming the actuarial assumptions are achieved, which is 10 years earlier than in last year’s report. The Market Value of Assets is currently higher than the actuarial value – due to the deferred gains mentioned above – and the funded status on this basis is currently about 6% higher but is expected to converge to the actuarial value over time if the investment return assumption is met.

However, as with the projection of contribution rates, it is the **actual** return on System assets that will determine the future funded status.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION II – RISK IDENTIFICATION AND ASSESSMENT

Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience, but actual future experience will undoubtedly be different and may vary significantly. This section of the report is intended to identify the primary risks to the Plan, provide some background information about those risks, and provide an assessment of those risks.

Identification of Risks

The fundamental risks to the pension plan are that the contributions needed to pay the benefits become unaffordable or that the contributions needed to support the Plan may differ significantly from expectations. While there are a number of factors that could lead to either of these events, we believe the primary risks are:

- Investment risk,
- Assumption change risk, and
- Contribution and payroll risk.

Other risks that we have not identified may also turn out to be important.

Investment risk is the potential for investment returns to be different than expected. Lower investment returns than anticipated will increase the Unfunded Actuarial Liability necessitating higher contributions in the future unless there are other gains that offset these investment losses. The potential volatility of future investment returns is determined by the Plan's asset allocation and the affordability of the investment risk is determined by the amount of assets invested relative to the size of the plan sponsors or other contribution base.

Assumption change risk is the potential for the environment to change such that future valuation assumptions are different than the current assumptions. For example, declines in interest rates over the last three decades resulted in higher investment returns for fixed income investments, but lower expected future returns necessitating either a change in investment policy, a reduction in discount rate, or some combination of the two. Assumption change risk is an extension of the other risks identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in environment when the current assumption is no longer reasonable.

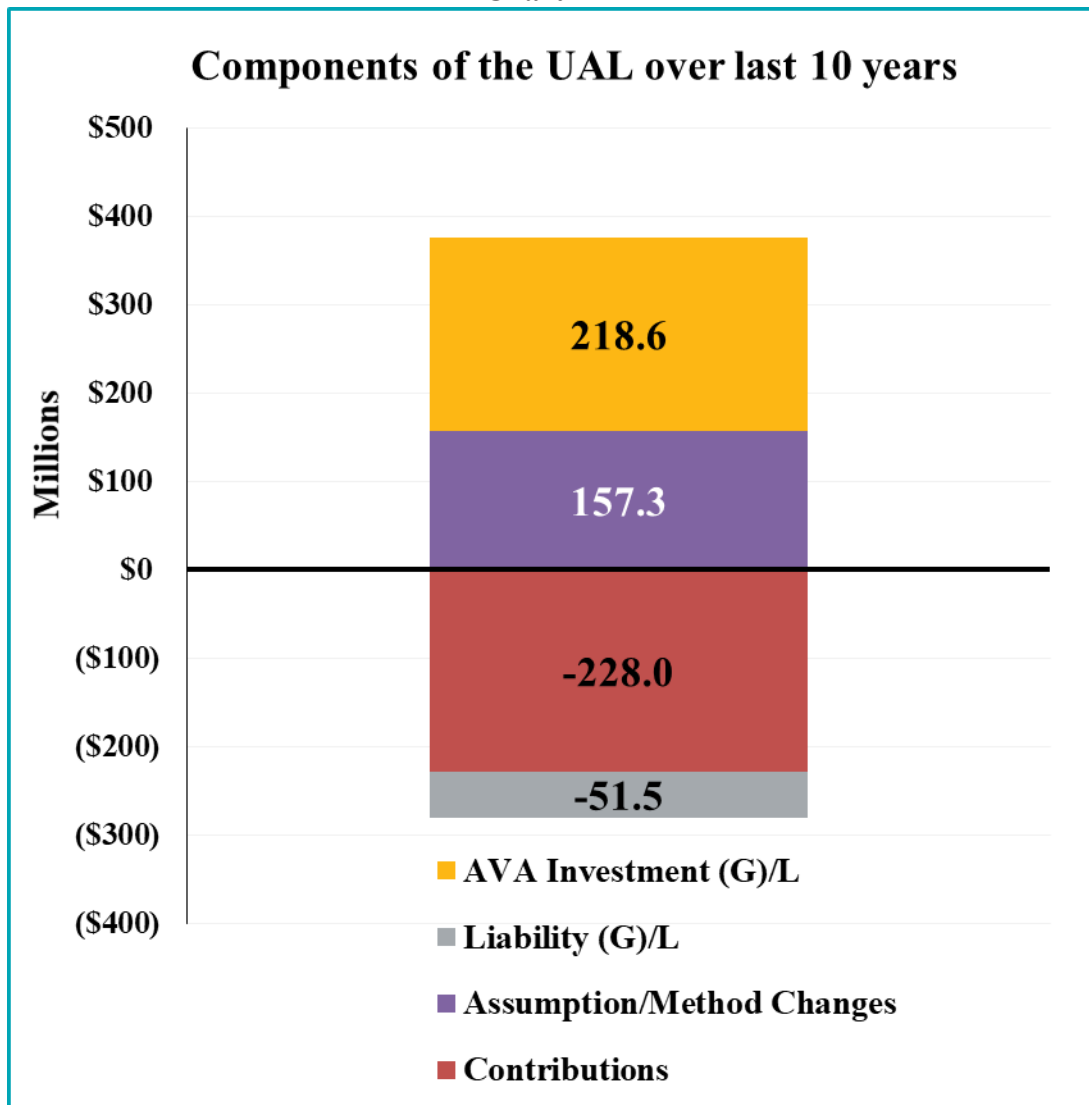
Contribution risk is the potential for actual future contributions to deviate from expected future contributions. There are different sources of contribution risk such as the sponsor choosing to not make contributions in accordance with the funding policy. As another example, the contribution requirement might become a financial strain on the sponsor as a result of material contribution base changes (e.g., covered employees, covered payroll) that affect the amount of contributions the Plan can collect.

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SECTION II – RISK IDENTIFICATION AND ASSESSMENT

The chart below shows the components contributing to the Unfunded Actuarial Liability (UAL) from July 1, 2011 through June 30, 2021. Over the last 10 years, the UAL has increased by approximately \$96 million. The investment losses (gold bar) of \$219 million on the Actuarial Value of Assets (AVA) and assumption/method changes (purple bar) resulting in a total UAL increase of \$157 million are the primary sources in the UAL growth. Contributions in excess of the “tread water” level (red bar) of \$228 million, resulting from a pension obligation bond contribution of approximately \$250 million, have partially offset the UAL growth. Finally, net liability gains (gray bar) of \$51 million also decreased the UAL.

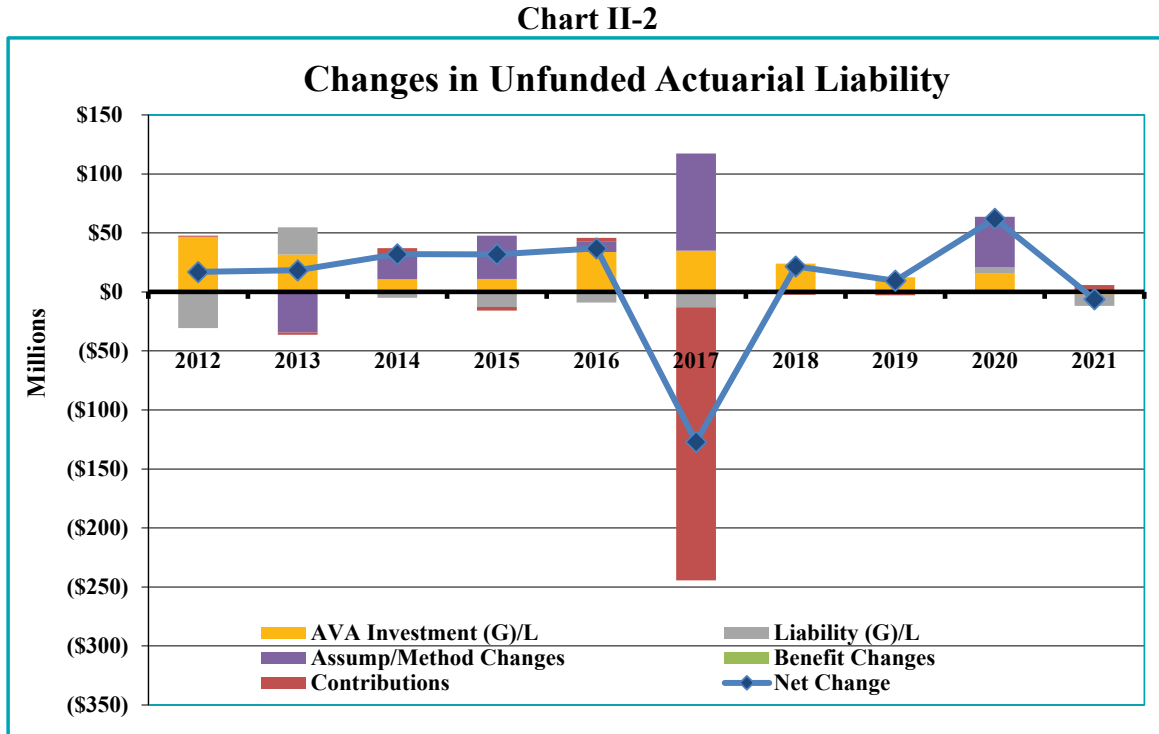
Chart II-1



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION II – RISK IDENTIFICATION AND ASSESSMENT

Chart II-2 below details the annual sources of the UAL change (colored bars) for the plan years ending June 30. The net UAL change for each year is represented by the blue diamonds.



On a smoothed basis, the average annual geometric return over the 10-year period is 5.5%, with losses occurring on the AVA every year before this year that have increased the UAL. As of June 30, 2021, there are approximately \$109 million of deferred gains that will be recognized over the next nine years. As a result, even if the Plan earns below the expected return of 7.00% on a market basis, there could still be a gain on the smoothed value of assets.

Over the same time period, the assumed rate of return decreased from 7.90% to 7.00%. It is important to note that these changes simply reflect a downward revision to the estimate of future investment earnings; ultimately costs will be determined by actual investment earnings. Based on Verus' current capital market assumptions (including their inflation assumption of 2.00%) and the Plan's asset allocation, the expected average annual return is 6.88% compared to the Plan's assumption of 7.00%, which is net of investment and administrative expenses. Future expectations of investment returns may continue to decline necessitating further reductions in the discount rate.

The net impact of assumption changes is represented by the purple bars and includes changes to demographic assumptions that decreased the UAL in some years.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION II – RISK IDENTIFICATION AND ASSESSMENT

Each year the UAL is expected to increase for benefits earned in the current year (the normal cost), administrative expenses, and interest on the UAL. This expected increase is referred to as the tread water level. If contributions are greater than the tread water level, the UAL is expected to decrease. Conversely, if contributions are less than the tread water level, the UAL is expected to increase. The amortization policy (as well as the contribution-timing lag) can impact whether or not the contributions exceed the tread water level.

The County issued bonds worth approximately \$250 million and included a similar amount as a receivable contribution for the June 30, 2017 valuation. This large contribution went directly toward paying down the principal on the UAL as seen below in Table II-1, which numerically summarizes the changes in the UAL for each year by source over the last 10 years. It should be noted that for bonds to have positive long-term financial impact, pension investments will need to outperform debt service payments over the length of the bonds.

The Board adopted 19-year layered amortization of the UAL at its October 28, 2015 meeting. Under this approach, contributions are typically above the tread water level each year. However, the Board's election to phase in the impact of the most recent assumption changes over three years was the primary cause for the most recent contributions to be \$5.9 million less than the actuarial cost and subsequently increased the UAL by that amount.

Table II-1

Unfunded Actuarial Liability (UAL) Change by Source					
June 30,	Contributions	Assumption/ Method Changes	Liability Experience	Investment Experience	Total UAL Change
2012	\$ 1,063,430	\$ 0	\$ (30,721,453)	\$ 46,660,090	\$ 17,002,067
2013	(1,843,981)	(34,420,710)	23,026,858	31,624,756	18,386,923
2014	5,138,315	21,095,393	(5,070,085)	10,841,064	32,004,687
2015	(3,043,058)	36,744,870	(12,668,401)	10,912,537	31,945,948
2016	2,775,153	9,170,277	(8,948,443)	33,948,354	36,945,341
2017	(231,452,683)	82,259,297	(12,982,692)	35,033,717	(127,142,361)
2018	(2,307,142)	0	285,647	23,696,427	21,674,932
2019	(2,726,065)	0	(161,312)	12,412,582	9,525,205
2020	(1,439,104)	42,435,148	5,587,388	15,576,636	62,160,068
<u>2021</u>	<u>5,856,076</u>	<u>0</u>	<u>(9,839,957)</u>	<u>(2,067,958)</u>	<u>(6,051,840)</u>
Total	\$ (227,979,060)	\$ 157,284,275	\$ (51,492,450)	\$ 218,638,204	\$ 96,450,970

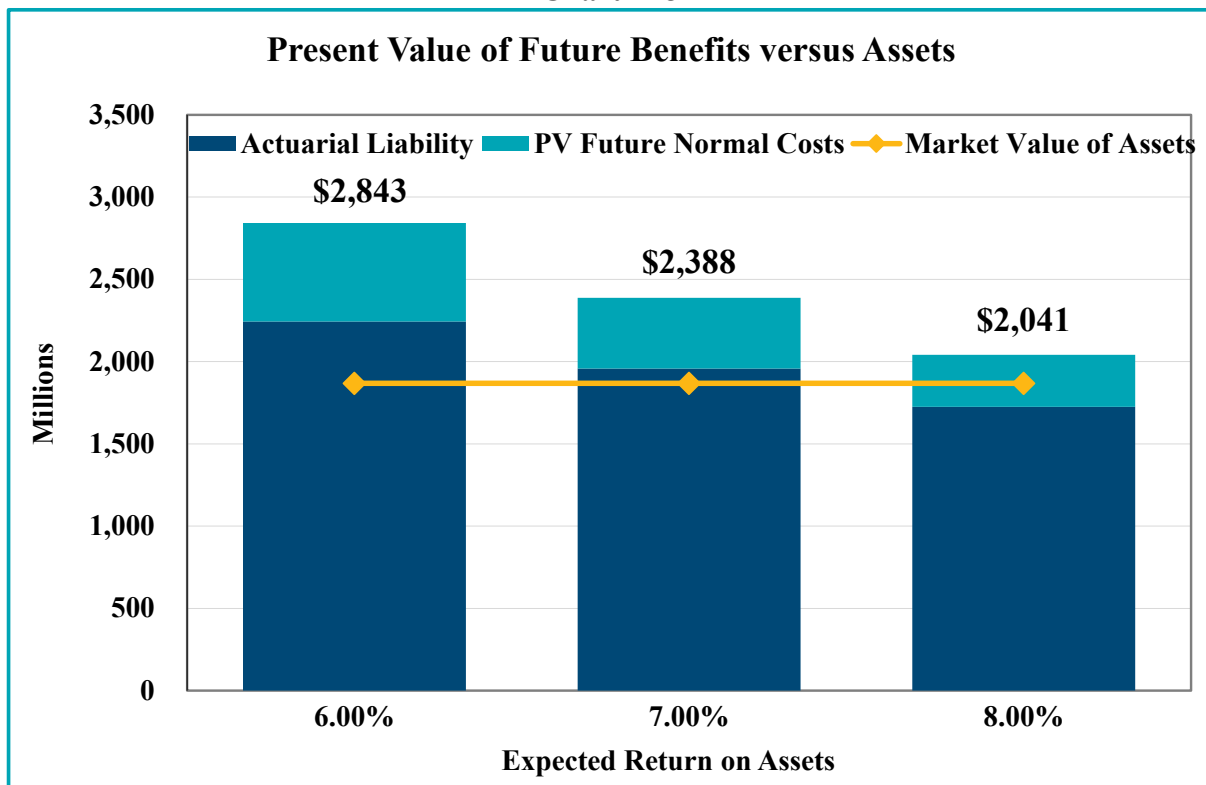
SECTION II – RISK IDENTIFICATION AND ASSESSMENT

Assessing Costs and Risks

Sensitivity to Investment Returns

The chart below compares assets to the present value of all projected future benefits discounted at the current expected rate of return (7.00%) and at discount rates 100 basis points above and below the expected rate of return. The present value of future benefits is shown as a bar with the portion attributable to past service in dark blue (Actuarial Liability) and the portion attributable to future service in teal (Present Value of Future Normal Costs). The Market Value of Assets is shown by the gold line.

Chart II-3



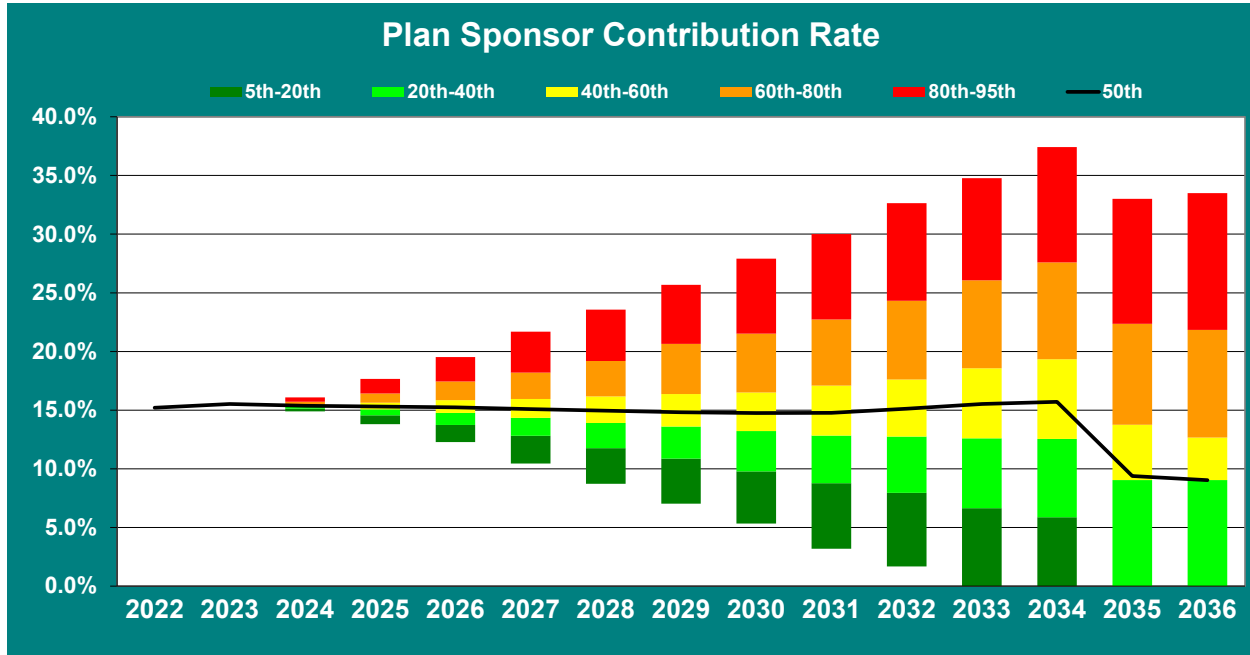
If investments return 7.00% annually, the Plan would need approximately \$2.4 billion in assets today to pay all projected benefits compared to current assets of \$1.9 billion (excluding assets and liabilities related to the Supplemental Retiree Benefit Reserve). If investment returns are only 6.00%, the Plan would need approximately \$2.8 billion in assets today, and if investment returns are 8.00%, the Plan would need approximately \$2.0 billion in assets.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION II – RISK IDENTIFICATION AND ASSESSMENT

Sensitivity to Investment Returns - Stochastic Projections

Stochastic projections serve to show the range of probable outcomes of various measurements. The graphs below and on the following page show the projected range of the employer contribution rate and of the funded ratio on an Actuarial Value of Assets basis. The range in both scenarios is driven by the volatility of investment returns, assumed to be based on a 12.5% standard deviation of annual returns, as indicated by Verus' current capital market assumptions.



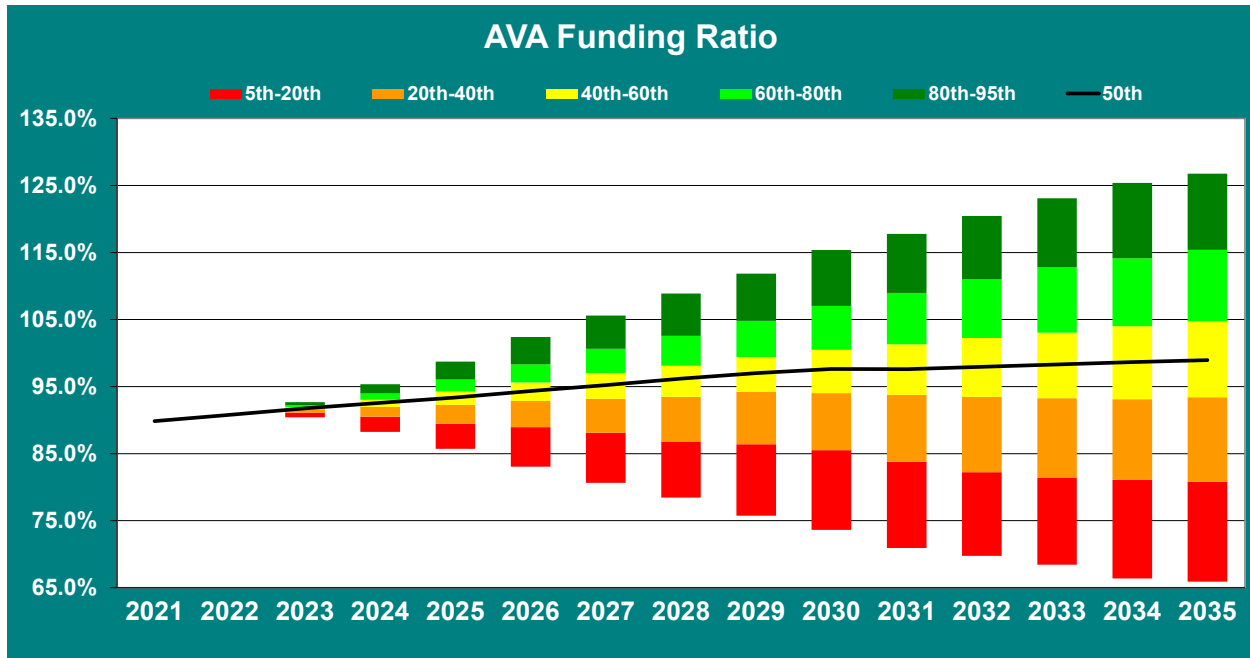
The stochastic projection of employer contributions as a percent of pay shows the probable range of future contribution rates. The baseline contribution rate (black line) is based on the median of the simulations using an average return of 7.00%. It is similar to the *deterministic* projections discussed in subsection D of the Executive Summary of this report, where the returns are expected to be exactly 7.00% each year. However, the median results are somewhat higher than the deterministic projections because of the impact of the SRBR, which may result in fewer assets available to fund the basic benefits in years where the smoothed returns exceed 7.00%.

In the most pessimistic scenario shown, the 95th percentile, the projected employer contribution rate approaches 37% of pay in 2034. Conversely, the most optimistic scenario shown, the 5th percentile, the projected employer contribution rate declines to 0% in 2033.

We note that these projections only allow the employers' contribution to drop below their share of the normal cost if the Plan becomes extremely overfunded (i.e., a funded ratio above 120%), as is required under PEPRA.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION II – RISK IDENTIFICATION AND ASSESSMENT



The graph above shows the projection of the funded ratio based on the Actuarial Value of Assets. While the median funded ratio (black line) is projected to be approximately 99% at the end of the 15-year period shown here, there is a wide range of potential outcomes. Good investment returns have the likelihood of bringing the funded ratio well over 100%. Due to the current funding policy of the Plan, even in scenarios with unfavorable investment returns, the Plan is projected to remain over 65% funded on an Actuarial Value of Assets basis, as long as the actuarially determined contributions continue to be made.

Contribution Risk

While investment returns are typically the dominant factor in volatility, contribution rates can also be sensitive to future salary increases and the hiring of new members. When member payroll growth stagnates or even declines, the dollar level of contributions made to the Plan also stagnates or declines since contributions are based on payroll levels.

There is also a risk of the contribution rate increasing even higher when payroll decreases since the Plan’s funding policy amortizes the UAL as a level percentage of pay. This means that the UAL payments increase at the assumed payroll growth rate of 3.00%, so that the payment is expected to remain constant as a percentage of payroll. If payroll growth is less than the expected 3.00% or there is a decline in payroll, the UAL payments are spread over a smaller payroll base and the contribution rate as a percentage of pay increases, potentially making the Plan less affordable.

SECTION II – RISK IDENTIFICATION AND ASSESSMENT

Plan Maturity Measures

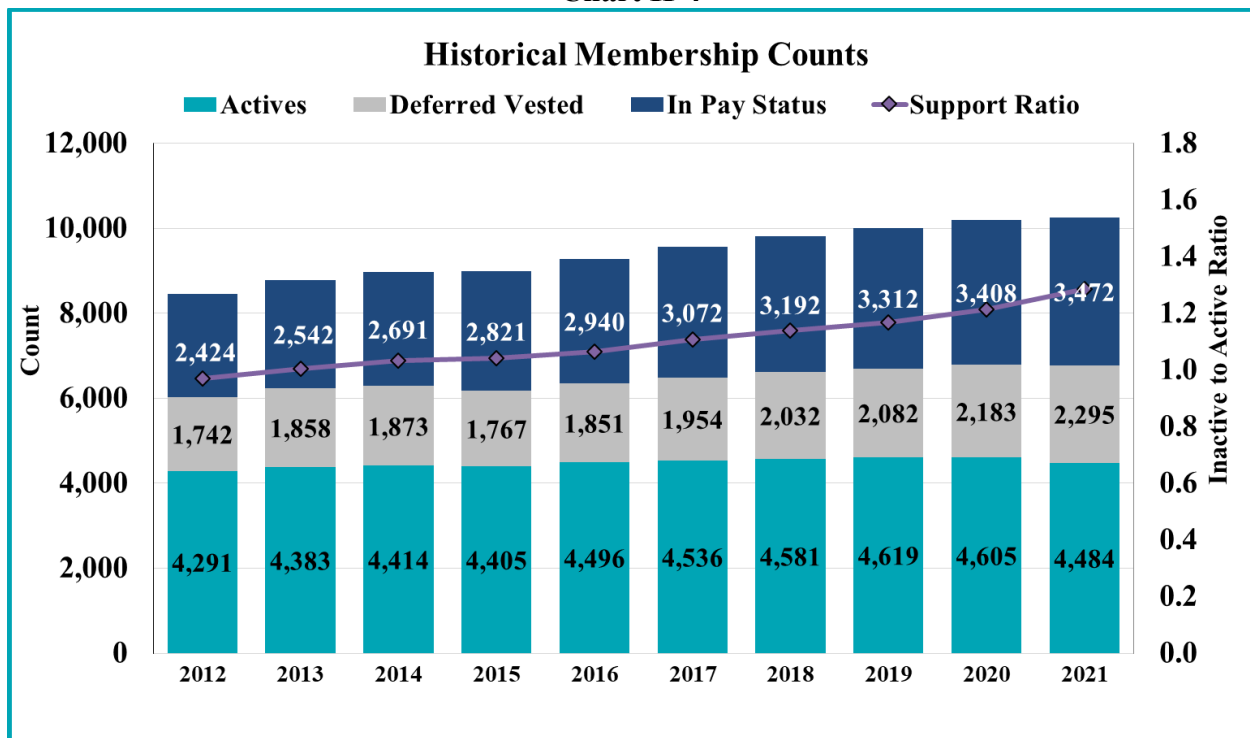
The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. Before assessing each of these risks, it is important to understand the maturity of the Plan and how the maturity has changed over time.

Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic – the larger the plan is compared to the contribution or revenue base that supports it; the more sensitive the plan will be to risk. The measures below have been selected as the most important in understanding the primary risks identified for the Plan.

Inactives per Active (Support Ratio)

One simple measure of plan maturity is the ratio of the number of those receiving benefits or those entitled to a deferred benefit to the number of active members. The Support Ratio is expected to increase gradually as a plan matures. The chart below shows the growth in the Support Ratio from 2012 to 2021. The inactive membership level was only about 97% of the active membership level in 2012, so the Support Ratio was approximately 1.0. During the past few years, the growth in retired membership has exceeded the growth in active membership, increasing the Support Ratio to approximately 1.3. That means for 2021, there are approximately 1.3 inactive members per active member.

Chart II-4



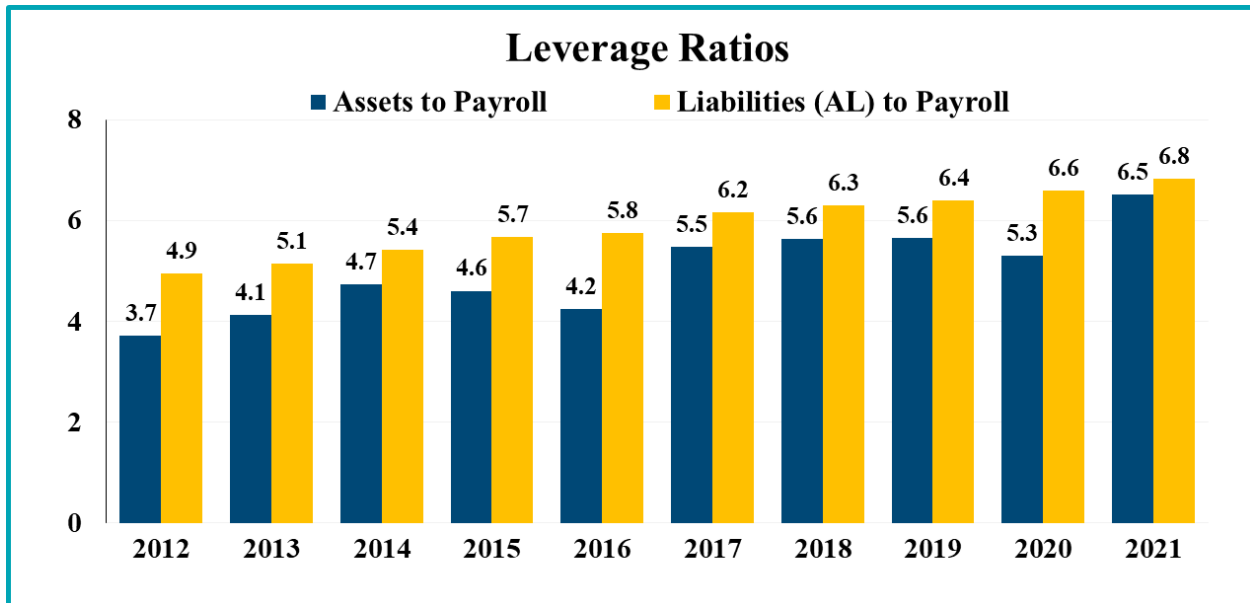
SECTION II – RISK IDENTIFICATION AND ASSESSMENT

Leverage Ratios

Leverage or volatility ratios measure the size of the plan compared to its revenue base more directly. The asset leverage ratio is simply the Market Value of Assets to active member payroll and indicates the sensitivity of the Plan to investment returns. The liability leverage ratio is the plan's Actuarial Liability to active member payroll and indicates the sensitivity of the Plan to assumption changes or demographic experience.

The chart below shows the historical leverage ratios of the Plan. The liability leverage ratio has increased steadily since 2012, driven by changes to more conservative actuarial assumptions and a continued maturing of the Plan. The asset leverage ratios have also increased, but with more volatility, based on variations in investment experience and with a large jump due to the pension obligation bond contribution for 2017 and another jump in 2021 due to exceptional asset returns.

Chart II-5



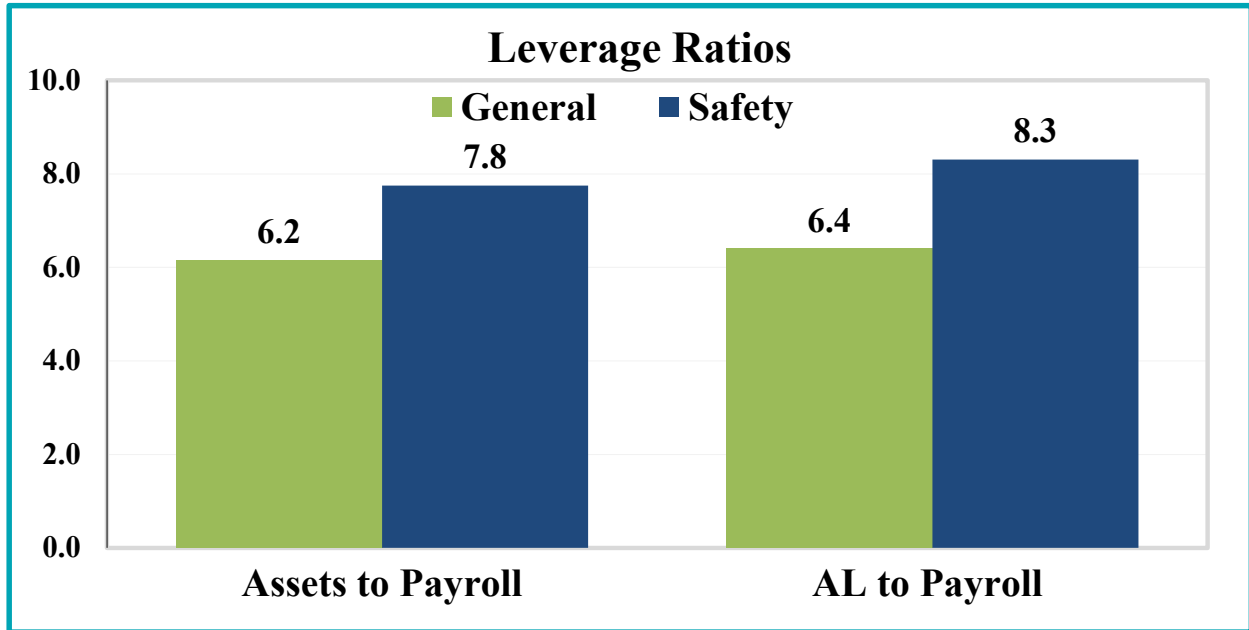
To appreciate the impact of the ratio of assets to payroll on plan cost, consider the situation for a new plan with almost no assets. Even if the assets suffer a bad year of investment returns, the impact on the plan cost is nil, because the asset level is so small.

As the Plan becomes better funded, the asset leverage ratio will increase, and if it was 100% funded, the asset leverage ratio would be close to 6.8 times payroll, or the Actuarial Liability (AL) leverage ratio.

SECTION II – RISK IDENTIFICATION AND ASSESSMENT

The following chart shows that the ratio of both assets and liabilities to payroll, and therefore the sensitivity to investment returns, is higher for the Safety members compared to the General members. This is because of the higher benefit amounts and the earlier average retirement ages for Safety.

Chart II-6



The General asset leverage ratio of 6.2 means that if the Plan’s assets lose 10% of their value, which is a 17.00% actuarial loss compared to the expected return of 7.00%, the loss would be equivalent to 105% of payroll (17.00% times 6.2). The same investment loss for the Safety group with an asset ratio of 7.8 would be equivalent to approximately 133% of payroll. As illustrated by this example, the contribution rates for the Safety members will generally be more volatile than those of the General members.

More Detailed Assessment

While a more detailed assessment is always valuable to enhance the understanding of the risks identified above, we believe the scenarios illustrated above cover the primary risks facing the Plan at this time. We would be happy to provide the Board with a more in-depth analysis at their request.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION III – ASSETS

Pension plan assets play a key role in the financial operation of the System and in the decisions the Board may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact benefit levels, employer contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on System assets including:

- **Disclosure** of System assets as of June 30, 2020 and June 30, 2021;
- Statement of the **changes** in market values during the year;
- Development of the **Actuarial Value of Assets**;
- An allocation of the assets by **reserve balances**; and,
- An assessment of historical **investment performance versus inflation**.

Disclosure

There are two types of asset values disclosed in the valuation, the Market Value of Assets and the Actuarial Value of Assets. The market value represents “snap-shot” or “cash-out” values which provide the principal basis for measuring financial performance from one year to the next. The Actuarial Value of Assets reflects smoothing of annual investment returns.

Table III-1 on the next page discloses and compares each asset value as of June 30, 2020 and June 30, 2021.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION III – ASSETS

Table III-1 Statement of Assets at Market Value		
	June 30, 2020	June 30, 2021
Cash and Securities Lending Collateral:		
Cash and Short Term Investments	\$ 98,130,000	\$ 67,707,000
Collateral on Loaned Securities	35,338,000	56,729,000
Total Cash and Securities Lending Collateral	\$ 133,468,000	\$ 124,436,000
Receivables:		
Sales of Investments	\$ 10,315,000	\$ 23,884,000
Interest and Dividends	1,847,000	2,273,000
Employee and Employer Contributions	860,000	1,014,000
Other Receivables	12,000	7,000
Total Receivables	\$ 13,034,000	\$ 27,178,000
Investments, at Fair Value:		
Fixed Income	\$ 474,595,000	\$ 561,576,000
Equities	723,450,000	950,148,000
Real Estate	177,779,000	195,568,000
Alternative Investments (Hedge Funds, Private Equity, Private Credit, Futures, Commodities)	151,671,000	230,977,000
Total Investments, at Fair Value	\$ 1,527,495,000	\$ 1,938,269,000
Capital Assets		
Land	\$ 370,000	\$ 370,000
Building, Office Equipment and Furniture Net of Accumulated Depreciation	694,000	699,000
Intangible Assets, Pension Administration System Net of Accumulated Depreciation	607,000	303,000
Total Capital Assets	\$ 1,671,000	\$ 1,372,000
Total Assets	\$ 1,675,668,000	\$ 2,091,255,000
Current Liabilities:		
Purchase of Investments	\$ 19,237,000	\$ 51,172,000
Obligations under Security Lending Program	35,337,000	56,729,000
Refunds Payable	3,392,000	4,099,000
Accounts Payable	2,180,000	2,955,000
Total Current Liabilities	\$ 60,146,000	\$ 114,955,000
Long-Term Liabilities:		
Compensated Absences	\$ 104,000	\$ 115,000
Total Long-Term Liabilities	\$ 104,000	\$ 115,000
Total Liabilities	\$ 60,250,000	\$ 115,070,000
Total Market Value of Assets for Valuation	\$ 1,615,418,000	\$ 1,976,185,000

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION III – ASSETS

Changes in Market Value

The components of asset change are:

- Contributions (employer and employee)
- Benefit payments
- Expenses (investment and administrative)
- Investment income (realized and unrealized)

Table III-2 below and on the following page shows the components of change in the Market Value of Assets during the fiscal years ending June 30, 2020 and June 30, 2021.

Table III-2 Changes in Market Values		
	June 30, 2020	June 30, 2021
Additions:		
Contributions		
Employer	\$ 35,310,000	\$ 36,766,000
Plan Member	23,104,000	23,536,000
Total Contributions	\$ 58,414,000	\$ 60,302,000
Investment Income		
Net Appreciation/(Depreciation) in		
Fair Value of Investments	\$ (5,485,000)	\$ 381,705,000
Interest	5,219,000	3,649,000
Dividends	4,400,000	4,153,000
Real Estate Operating Income	5,155,000	6,015,000
Other Investment Income	4,557,000	8,446,000
Total Investment Activity Income/(Loss)	\$ 13,846,000	\$ 403,968,000
Less Expenses from Investing Activities	9,051,000	9,145,000
Net Investing Activity Income/(Loss)	\$ 4,795,000	\$ 394,823,000
From Securities Lending Activities		
Securities Lending Income	\$ 816,000	\$ 121,000
Less Expenses from Securities Lending Income		
Management Fee	\$ 691,000	\$ 12,000
Borrower Rebate	(5,000)	41,000
Net Securities Lending Income	\$ 130,000	\$ 68,000
Total Net Investment Income/(Loss)	\$ 4,925,000	\$ 394,891,000
Other Income	\$ 188,000	\$ 188,000
Total Additions	\$ 63,527,000	\$ 455,381,000

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION III – ASSETS

**Table III-2
Changes in Market Values (Continued)**

	June 30, 2020	June 30, 2021
Deductions:		
Benefits	\$ 87,671,000	\$ 92,690,000
Refunds of Contributions	3,756,000	3,586,000
Administrative Expenses	2,853,000	2,740,000
Total Deductions	\$ 94,280,000	\$ 99,016,000
Net Increase/(Decrease)	\$ (30,753,000)	\$ 356,365,000
<u>Net Assets Held in Trust for Pension Benefits</u>		
Beginning of Year	\$ 1,646,171,000	\$ 1,615,418,000
Adjustment to Match 2020 Final Assets	\$ 0	\$ 4,402,000
End of Year for Valuation	\$ 1,615,418,000	\$ 1,976,185,000
Approximate Return*	0.14%	24.49%

Numbers may not add to totals due to rounding.

**Net of investment and administrative expenses*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION III – ASSETS

Actuarial Value of Assets (AVA)

The table below shows the development of the Actuarial Value of Assets. Based on discussions with TCERA staff, the total actual market returns for each period shown are based on preliminary financial information. Please see Appendix B for a description of the asset smoothing method.

Table III-3 Development of Actuarial Value of Assets for June 30, 2021						
Six month Period		Total Actual Market	Expected Market	Investment	Deferred	Deferred
<u>From</u>	<u>To</u>	<u>Return (net)</u>	<u>Return (net)</u>	<u>Gain (Loss)</u>	<u>Factor</u>	<u>Return</u>
1/12	6/12	\$ 46,133,182	\$ 36,032,847	\$ 10,100,335	0.05	\$ 505,017
7/12	12/12	61,934,352	38,223,420	23,710,932	0.10	2,371,093
1/13	6/13	45,446,072	39,915,825	5,530,247	0.15	829,537
7/13	12/13	114,083,453	41,675,731	72,407,722	0.20	14,481,544
1/14	6/14	62,482,815	45,022,478	17,460,337	0.25	4,365,084
7/14	12/14	(17,886,044)	46,676,782	(64,562,826)	0.30	(19,368,848)
1/15	6/15	26,507,383	44,856,580	(18,349,197)	0.35	(6,422,219)
7/15	12/15	(45,631,715)	45,909,756	(91,541,471)	0.40	(36,616,589)
1/16	6/16	24,729,226	43,045,278	(18,316,052)	0.45	(8,242,223)
7/16	12/16	44,835,718	44,015,787	819,931	0.50	409,965
1/17	6/17	84,564,705	42,691,625	41,873,080	0.55	23,030,194
7/17	12/17	79,943,304	45,809,189	34,134,115	0.60	20,480,469
1/18	6/18	11,201,303	48,460,635	(37,259,332)	0.65	(24,218,566)
7/18	12/18	(54,685,836)	56,898,055	(111,583,891)	0.70	(78,108,724)
1/19	6/19	143,284,434	53,981,060	89,303,374	0.75	66,977,531
7/19	12/19	74,015,847	59,050,363	14,965,484	0.80	11,972,387
1/20	6/20	(69,767,060)	60,619,959	(130,387,018)	0.85	(110,828,966)
7/20	12/20	207,466,372	56,098,158	151,368,214	0.90	136,231,393
1/21	6/21	178,848,571	62,147,805	116,700,766	0.95	<u>110,865,728</u>
1. Total deferred return						108,713,808
2. Market Value of Assets (includes SRBR)						1,976,185,000
3. Actuarial Value of Assets for Funding Ratio (2. - 1.) ¹						1,867,471,000
4. Non-valuation reserves and designations:						
a. Supplemental Retiree Benefit Reserve (SRBR)						108,446,000
5. Preliminary Actuarial Value of Assets (3. - 4.) ²						1,759,025,000
6. Corridor Limit						
a. 70% of Market Value of Assets excluding SRBR						1,307,417,300
b. 130% of Market Value of Assets excluding SRBR						2,428,060,700
7. Actuarial Value of Assets after Corridor						1,759,025,000

¹Items will not sum due to a rounding adjustment on the MVA

²Items will not sum due to a rounding adjustment on the SRBR

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION III – ASSETS

Allocation of Reserve Balances

The following table shows the allocation of the assets among the various accounting reserves provided by TCERA staff.

Table III-4 Allocation of Assets by Accounting Reserve Amounts for the Years Ended June 30, 2020 and June 30, 2021		
	FYE 2020	FYE 2021
1. Member Deposit Reserve	\$ 319,562,000	\$ 339,547,000
2. Employer Advance Reserve	859,182,000	908,887,000
3. Retiree Reserve	442,157,000	446,256,000
4. Supplemental Retiree Benefit Reserve	108,348,000	108,446,000
5. Contingency Reserve	49,228,000	60,736,000
6. Market Stabilization Reserve	(163,717,000)	108,714,000
7. TCERA Property, Inc. Retained Earnings	787,000	939,000
8. Other Reserves	(129,000)	2,660,000
Total Reserves	\$ 1,615,418,000	\$ 1,976,185,000

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION III – ASSETS

Asset Returns vs. Inflation

Table III-5 shows the returns on the Market and Actuarial Values of Assets, with the increase in the CPI for comparison, over the last 10 years.

Table III-5 Net Return on Assets vs. Increase in Consumer Price Index			
Year Ended June 30	Net Return at Market Value*	Net Return at Actuarial Value*	Increase in Consumer Price Index**
2012	-1.3%	3.1%	1.7%
2013	11.1%	4.6%	1.8%
2014	16.7%	6.8%	2.1%
2015	0.7%	6.1%	0.1%
2016	-1.9%	4.7%	1.0%
2017	11.3%	4.6%	1.6%
2018	7.4%	5.6%	2.9%
2019	5.6%	6.5%	1.6%
2020	0.1%	6.3%	0.6%
2021	24.5%	7.1%	5.4%
Compound Average	7.1%	5.5%	1.9%

* Net of investment and administrative expenses.
** Based on All Urban Consumers - U.S. City Average, June indices.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION IV – LIABILITIES

In this section, we present detailed information on System liabilities including:

- **Disclosure** of System liabilities at June 30, 2020 and June 30, 2021;
- Statement of **changes** in these liabilities during the year;
- Present value of future **SRBR** benefits based on current benefit levels; and
- Liability and funded status **disclosures** with and without the SRBR.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them. Note that these liabilities are not applicable for settlement purposes, including the purchase of annuities and the payment of lump sums.

- **Present Value of Future Benefits:** Used for measuring all future System obligations, represents the amount of money needed today to fully fund all benefits of the System both earned as of the valuation date and those to be earned in the future by current plan participants, under the current System provisions.
- **Actuarial Liability:** Used for funding calculations, this liability is calculated taking the Present Value of Future Benefits and subtracting the present value of future Member Contributions and future Employer Normal Costs under an acceptable actuarial funding method. The method used for this System is called the **Entry Age Normal** (EAN) funding method.
- **Unfunded Actuarial Liability:** The excess of the Actuarial Liability over the Actuarial Value of Assets.

Table IV-1 on the following page discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of Plan assets yields, for each respective type, a **net surplus**, or an **Unfunded Actuarial Liability**.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION IV – LIABILITIES

Table IV-1				
Present Value of Future Benefits and Actuarial Liability				
(in thousands)				
Item	General	Safety	June 30, 2021 Total	June 30, 2020 Total
Present Value of Future Benefits (PVFB)				
Actives	\$ 865,109	\$ 356,487	\$ 1,221,596	\$ 1,190,290
Terminated Vested	88,635	27,697	116,332	109,512
Retirees	650,413	199,773	850,186	814,417
Disabled	55,791	64,177	119,969	118,949
Beneficiaries	<u>49,804</u>	<u>30,074</u>	<u>79,877</u>	<u>75,066</u>
Total PVFB	\$ 1,709,751	\$ 678,208	\$ 2,387,960	\$ 2,308,235
Actuarial Liability				
Total Present Value of Benefits	\$ 1,709,751	\$ 678,208	\$ 2,387,960	\$ 2,308,235
Present Value of Future Normal Costs				
Employer Portion	153,514	69,136	222,650	224,044
Employee Portion	<u>143,807</u>	<u>63,518</u>	<u>207,325</u>	<u>208,394</u>
Actuarial Liability	\$ 1,412,430	\$ 545,555	\$ 1,957,985	\$ 1,875,797
Actuarial Value of Assets	\$ 1,279,691	\$ 479,334	\$ 1,759,025	\$ 1,670,786
Funded Ratio	90.6%	87.9%	89.8%	89.1%
Unfunded Actuarial Liability/(Surplus)	\$ 132,739	\$ 66,220	\$ 198,960	\$ 205,011

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION IV – LIABILITIES

Changes in Liabilities

Each of the liabilities disclosed in the prior tables are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- Plan amendments increasing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above, and also due to changes in System assets resulting from:

- Employer contributions different than the actuarial cost
- Investment earnings different than expected
- A change in the method used to measure plan assets

Table IV-2 Development of 2021 Experience Gain/(Loss) (in thousands)	
Item	Cost
1. Unfunded Actuarial Liability at June 30, 2020	\$ 205,011
2. Middle of year actuarial liability payment	(18,386)
3. Interest to end of year on 1 and 2	13,718
4. Impact of assumption changes	<u>0</u>
5. Expected Unfunded Actuarial Liability at June 30, 2021	\$ 200,343
6. Actual Unfunded Liability at June 30, 2021 (AVA basis)	<u>198,960</u>
7. Net Gain/(Loss): (5 - 6)	\$ 1,384
8. Portion of net gain/(loss) due to:	
a. Investment experience gain	\$ 2,068
b. Contributions less than actuarial cost	(10,524)
c. Inactive mortality gain	2,828
d. COLAs less than expected	248
e. Salaries less than expected	7,281
f. Retirements	(1,828)
g. Terminations	(644)
h. Other experience	<u>1,955</u>
i Total gain/(loss)	\$ 1,384

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION IV – LIABILITIES

Table IV-3 shows the present value of future SRBR benefits at current benefit levels and the calculation of the net reserve based on the SRBR balance. The net reserve as of June 30, 2021 is positive, meaning that the current SRBR balance is expected to cover SRBR benefits at current levels.

Table IV-3 Supplemental Retiree Benefit Reserve as of June 30, 2021		
	June 30, 2020	June 30, 2021
Level One		
1. Current Retirees	\$ 60,262,708	\$ 61,061,811
2. Inactive Members	2,051,922	1,960,719
3. Active members	<u>38,425,932</u>	<u>37,820,474</u>
4. Subtotal	\$ 100,740,562	\$ 100,843,004
Level Two		
5. Supplemental COLA for those who have lost at least 15% of Purchasing Power	\$ 718,407	\$ 667,759
Level Three		
6. Supplemental Spousal Death Benefit	\$ 4,846,221	\$ 5,459,914
7. Total SRBR Combined Liability: (4) + (5) + (6)	\$ 106,305,190	\$ 106,970,677
8. Supplemental Retiree Benefit Reserve: (SRBR)	<u>108,348,000</u>	<u>108,446,000</u>
9. Net Reserve: (8) - (7)	\$ 2,042,810	\$ 1,475,323

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION IV – LIABILITIES

The top portion of Table IV-4 shows System assets, liabilities, and funded ratios excluding the SRBR. In the bottom half, the liabilities are adjusted to include the portion associated with the current SRBR balance that has been accrued based on service to date (\$100.3 million) as well as the accrued portion of the present value of future transfers to the SRBR (\$174.9 million). In addition, the SRBR balance of \$108.4 million as of June 30, 2021 is added to the asset values.

The Board has not elected to pre-fund the estimated liability associated with future SRBR transfers. Such transfers will be recognized as asset losses in the valuation as they occur. We note that the estimated liability associated with future transfers has increased significantly since the prior valuation (from \$72.8 million to \$174.9 million), as a result of the increase in deferred investment gains, which raise the likelihood of the smoothed return exceeding the investment return assumption in the future.

These liability disclosures do not imply that the current benefit levels are guaranteed. Our understanding is that the Board has the power to adjust the benefit amounts paid from the SRBR.

Table IV-4 Disclosure of SRBR Liabilities (in thousands)	
Valuation Date	June 30, 2021
<u>Without SRBR</u>	
Actuarial Liability (Excluding SRBR)	\$ 1,957,985
Actuarial Value of Assets (Excluding SRBR)	1,759,025
Market Value of Assets (Excluding SRBR)	1,867,739
Funded Ratio - Actuarial Value Basis	89.8%
Funded Ratio - Market Value Basis	95.4%
 <u>With SRBR</u>	
Actuarial Liability (Excluding SRBR)	\$ 1,957,985
Liability Associated with Current SRBR Balance	100,270
Liability from Future Transfers	<u>174,882</u>
Total Liability with SRBR	\$ 2,233,137
Actuarial Value of Assets (Including SRBR)	\$ 1,867,471
Market Value of Assets (Including SRBR)	1,976,185
Funded Ratio - Actuarial Value Basis	83.6%
Funded Ratio - Market Value Basis	88.5%

Numbers may not add to totals due to rounding.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the System. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this System, the actuarial funding method used to determine the normal cost and the Unfunded Actuarial Liability is the **Entry Age Normal (EAN)** cost method. There are two primary components to the total contribution: the **normal cost rate** (employee and employer), and the **Unfunded Actuarial Liability rate** (UAL rate).

The normal cost rate is determined in the following steps. First, an individual normal cost rate is determined by taking the value of each member's projected future benefits as of the member's entry age into the System. This value is then divided by the value of the member's expected future salary, also at entry age, producing a normal cost rate that should remain relatively constant over a member's career. The total normal cost is computed by adding the expected dollar amount of each active member's normal cost for the current year – known as the Individual Entry Age Method. The total normal cost rate is the total normal cost divided by expected salary. Finally, the total normal cost rate is reduced by the member contribution rate to produce the employer normal cost rate.

The Unfunded Actuarial Liability is the difference between the Actuarial Liability and the Actuarial Value of Assets. At its October 28, 2015 meeting, the Board adopted 19-year layered amortization of the UAL. The UAL as of June 30, 2015 is being amortized over a closed 19-year period as a level percentage of payroll (with 13 years remaining), assuming payroll increases of 3.00% per year. Subsequent changes in the UAL due to experience gains and losses, assumption changes, or plan changes will be amortized over new closed 19-year periods.

The tables on the following pages present the calculation of the contribution rates for the System for the current and prior valuations.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

The employer contribution rates for FYE 2023 are shown in the table below, split by tier (1-4), membership class (General or Safety), and for the General class, employer (County or non-County). As directed by the TCERA Board at its April 12, 2018 meeting, we have allocated the cost impact of the contribution from POB proceeds to the County only, based on their share of pensionable payroll for the fiscal year ending June 30, 2018 (excluding TCAG). We were notified by Staff that all Safety members are employed by the County, so there is only one set of Safety rates. Based on information provided by Staff, we recommend that the General (Non-County) employer contribution rates be used for the Strathmore Public Utility District (SPUD).

Table V-1(a)				
Development of the Net Employer Contribution Rate as of June 30, 2021 for FYE 2023				
	Tier 1	Tier 2 & 3	Tier 4	Total
General (County)				
1. Total Normal Cost Rate	18.50%	16.87%	15.59%	16.29%
2. Member Contribution Rate	<u>2.48%</u>	<u>8.56%</u>	<u>7.80%</u>	<u>8.20%</u>
3. Employer Normal Cost Rate (1-2)	16.03%	8.31%	7.80%	8.09%
3a. Employer Normal Cost Rate with Phase-in	15.65%	8.24%	7.62%	7.97%
4. UAL Amortization	5.23%	5.23%	5.23%	5.23%
4a. UAL Amortization with Phase-in	4.98%	4.98%	4.98%	4.98%
5. Net Employer Contribution Rate (3+4)	21.26%	13.54%	13.03%	13.32%
5a. Net Employer Contribution Rate with Phase-in (3a+4a)	20.63%	13.22%	12.60%	12.95%
General (Non-County)				
1. Total Normal Cost Rate	18.50%	16.87%	15.59%	16.29%
2. Member Contribution Rate	<u>2.48%</u>	<u>8.56%</u>	<u>7.80%</u>	<u>8.20%</u>
3. Employer Normal Cost Rate (1-2)	16.03%	8.31%	7.80%	8.09%
3a. Employer Normal Cost Rate with Phase-in	15.65%	8.24%	7.62%	7.97%
4. UAL Amortization	12.55%	12.55%	12.55%	12.55%
4a. UAL Amortization with Phase-in	12.30%	12.30%	12.30%	12.30%
5. Net Employer Contribution Rate (3+4)	28.58%	20.86%	20.35%	20.64%
5a. Net Employer Contribution Rate with Phase-in (3a+4a)	27.95%	20.54%	19.92%	20.27%
Safety (County)				
1. Total Normal Cost Rate	N/A	23.37%	26.02%	24.41%
2. Member Contribution Rate	<u>N/A</u>	<u>11.42%</u>	<u>13.01%</u>	<u>12.04%</u>
3. Employer Normal Cost Rate (1-2)	N/A	11.95%	13.01%	12.37%
3a. Employer Normal Cost Rate with Phase-in	N/A	11.99%	12.77%	12.30%
4. UAL Amortization	N/A	9.13%	9.13%	9.13%
4a. UAL Amortization with Phase-in	N/A	8.47%	8.47%	8.47%
5. Net Employer Contribution Rate (3+4)	N/A	21.08%	22.14%	21.50%
5a. Net Employer Contribution Rate with Phase-in (3a+4a)	N/A	20.46%	21.25%	20.77%

Reflects second year of three year phase-in of assumption changes for employer contribution rate

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

The employer contribution rates for FYE 2022 are shown in the table below, split by tier (1-4) and membership class (General or Safety).

Table V-1(b)				
Development of the Net Employer Contribution Rate as of June 30, 2020 for FYE 2022				
	Tier 1	Tier 2 & 3	Tier 4	Total
General (County)				
1. Total Normal Cost Rate	17.80%	17.20%	15.57%	16.50%
2. Member Contribution Rate	<u>1.81%</u>	<u>8.63%</u>	<u>7.79%</u>	<u>8.25%</u>
3. Employer Normal Cost Rate (1-2)	15.99%	8.57%	7.79%	8.25%
3a. Employer Normal Cost Rate with Phase-in	15.23%	8.43%	7.43%	8.01%
4. UAL Amortization	5.09%	5.09%	5.09%	5.09%
4a. UAL Amortization with Phase-in	4.58%	4.58%	4.58%	4.58%
5. Net Employer Contribution Rate (3+4)	21.08%	13.66%	12.88%	13.34%
5a. Net Employer Contribution Rate with Phase-in (3a+4a)	19.81%	13.01%	12.01%	12.59%
General (Non-County)				
1. Total Normal Cost Rate	17.80%	17.20%	15.57%	16.50%
2. Member Contribution Rate	<u>1.81%</u>	<u>8.63%</u>	<u>7.79%</u>	<u>8.25%</u>
3. Employer Normal Cost Rate (1-2)	15.99%	8.57%	7.79%	8.25%
3a. Employer Normal Cost Rate with Phase-in	15.23%	8.43%	7.43%	8.01%
4. UAL Amortization	12.28%	12.28%	12.28%	12.28%
4a. UAL Amortization with Phase-in	11.77%	11.77%	11.77%	11.77%
5. Net Employer Contribution Rate (3+4)	28.27%	20.85%	20.07%	20.53%
5a. Net Employer Contribution Rate with Phase-in (3a+4a)	27.00%	20.20%	19.20%	19.78%
Safety (County)				
1. Total Normal Cost Rate	N/A	23.46%	25.83%	24.33%
2. Member Contribution Rate	<u>N/A</u>	<u>11.37%</u>	<u>12.92%</u>	<u>11.94%</u>
3. Employer Normal Cost Rate (1-2)	N/A	12.09%	12.92%	12.39%
3a. Employer Normal Cost Rate with Phase-in	N/A	12.15%	12.45%	12.26%
4. UAL Amortization	N/A	9.10%	9.10%	9.10%
4a. UAL Amortization with Phase-in	N/A	7.79%	7.79%	7.79%
5. Net Employer Contribution Rate (3+4)	N/A	21.19%	22.02%	21.49%
5a. Net Employer Contribution Rate with Phase-in (3a+4a)	N/A	19.93%	20.23%	20.04%

Reflects first year of three year phase-in of assumption changes for employer contribution rate

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

The combined General and Safety employer contribution rates for FYE 2023 are shown in the table below, split by tier (1-4). Separate rates are shown above and below the first \$161.54 of biweekly compensation (Social Security Integration).

Table V-2(a)				
Development of the Employer Contribution Rate as of June 30, 2021 for FYE 2023 with Social Security Integration				
	Tier 1	Tier 2 & 3	Tier 4	Total
General and Safety				
1. Employer Normal Cost Rate:	15.65%	9.18%	8.67%	8.97%
a. Rate on first \$161.54 of biweekly compensation	10.69%	6.26%		
b. Rate on biweekly compensation in excess of \$161.54	16.04%	9.38%		
2. UAL Rate:	5.56%	6.29%	6.15%	6.23%
a. Rate on first \$161.54 of biweekly compensation	3.80%	4.28%		
b. Rate on biweekly compensation in excess of \$161.54	5.70%	6.43%		
3. Total Rate (1 + 2):	21.20%	15.47%	14.82%	15.19%
a. Rate on first \$161.54 of biweekly compensation	14.49%	10.54%		
b. Rate on biweekly compensation in excess of \$161.54	21.73%	15.81%		

Reflects second year of three year phase-in of assumption changes for employer contribution rate

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION V – CONTRIBUTIONS

The employer contribution rates for FYE 2023 are shown in the table below, split by tier (1-4), membership class (General or Safety), and for the General class, employer (County or Non-County). Separate rates are shown above and below the first \$161.54 of biweekly compensation (Social Security Integration).

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

Table V-2(b) Development of the Employer Contribution Rate as of June 30, 2021 for FYE 2023 with Social Security Integration				
	Tier 1	Tier 2 & 3	Tier 4	Total
General (County)				
1. Employer Normal Cost Rate:	15.65%	8.24%	7.62%	7.97%
a. Rate on first \$161.54 of biweekly compensation	10.69%	5.62%		
b. Rate on biweekly compensation in excess of \$161.54	16.04%	8.43%		
2. UAL Rate:	4.98%	4.98%	4.98%	4.98%
a. Rate on first \$161.54 of biweekly compensation	3.40%	3.40%		
b. Rate on biweekly compensation in excess of \$161.54	5.10%	5.09%		
3. Total Rate (1 + 2):	20.63%	13.22%	12.60%	12.95%
a. Rate on first \$161.54 of biweekly compensation	14.10%	9.02%		
b. Rate on biweekly compensation in excess of \$161.54	21.14%	13.52%		
General (Non-County)				
1. Employer Normal Cost Rate:	15.65%	8.24%	7.62%	7.97%
a. Rate on first \$161.54 of biweekly compensation	10.69%	5.62%		
b. Rate on biweekly compensation in excess of \$161.54	16.04%	8.43%		
2. UAL Rate:	12.30%	12.30%	12.30%	12.30%
a. Rate on first \$161.54 of biweekly compensation	8.40%	8.39%		
b. Rate on biweekly compensation in excess of \$161.54	12.61%	12.58%		
3. Total Rate (1 + 2):	27.95%	20.54%	19.92%	20.27%
a. Rate on first \$161.54 of biweekly compensation	19.10%	14.01%		
b. Rate on biweekly compensation in excess of \$161.54	28.65%	21.01%		
Safety (County)				
1. Employer Normal Cost Rate:	N/A	11.99%	12.77%	12.30%
a. Rate on first \$161.54 of biweekly compensation	N/A	8.13%		
b. Rate on biweekly compensation in excess of \$161.54	N/A	12.20%		
2. UAL Rate:	N/A	8.47%	8.47%	8.47%
a. Rate on first \$161.54 of biweekly compensation	N/A	5.75%		
b. Rate on biweekly compensation in excess of \$161.54	N/A	8.63%		
3. Total Rate (1 + 2):	N/A	20.46%	21.25%	20.77%
a. Rate on first \$161.54 of biweekly compensation	N/A	13.88%		
b. Rate on biweekly compensation in excess of \$161.54	N/A	20.83%		

Reflects second year of three year phase-in of assumption changes for employer contribution rate

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

Table V-3 below shows information on each layer of the June 30, 2021 UAL. At its October 28, 2015 meeting, the Board adopted 19-year layered amortization of the UAL. The UAL as of June 30, 2015 is being amortized over a closed 19-year period as a level percentage of payroll, assuming payroll increases of 3.00% per year, and subsequent changes in the UAL due to experience gains and losses, assumption changes, or plan changes will be amortized over new closed 19-year periods.

**Table V-3
Development of Amortization Payment
For the June 30, 2021 Actuarial Valuation**

Type of Base	Date Established	Initial Amount	Initial Amortization Years	June 30, 2021 Outstanding Balance	Remaining Amortization Years	Amortization Amount
1. Initial UAL	06/30/2015	201,848,216	19	184,076,930	13	18,223,144
2. (Gain)/Loss Base	06/30/2016	38,033,040	19	35,554,375	14	3,325,826
3. (Gain)/Loss Base	06/30/2017	25,611,386	19	24,425,468	15	2,169,709
4. Assumption Change Base	06/30/2017	82,259,297	19	78,450,339	15	6,968,726
5. POB Contribution Base	06/30/2017	(233,100,233)	19	(222,306,691)	15	(19,747,454)
6. (Gain)/Loss Base	06/30/2018	23,781,349	19	23,066,161	16	1,954,200
7. (Gain)/Loss Base	06/30/2019	12,251,268	19	12,039,459	17	976,525
8. (Gain)/Loss Base	06/30/2020	23,103,302	19	22,926,594	18	1,786,295
9. Assumption Change Base	06/30/2020	42,435,148	19	42,110,576	18	3,280,990
10. (Gain)/Loss Base	06/30/2021	(1,383,632)	19	<u>(1,383,632)</u>	19	<u>(103,864)</u>
Total				\$ 198,959,581		\$ 18,834,097

*Does not reflect phase-in of 2019 assumption change base.
Numbers may not add to totals due to rounding.*

If the UAL payment above of \$18,834,097 is calculated based on a single-equivalent period with the June 30, 2021 UAL of \$198,959,581, the number of years to fully pay off the UAL would be approximately 14 years.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

Table V-4 below shows the development of the UAL amortization rates. The payroll split between County General and Non-County General is based on pensionable payroll by employer for FYE 2021 provided for the GASB 67/68 report. Following direction from Staff, the pensionable payroll for TCAG is excluded from the County's share.

As shown below (and described earlier in this section), the cost impact of the contribution from POB proceeds has been allocated to the County only.

Table V-4 Development of UAL Amortization Rates for FYE 2023	
General (County)	
1. General County Projected Payroll for FYE June 30, 2022	\$ 203,116,618
2. Total General Projected Payroll for FYE June 30, 2022	\$ 220,836,538
3. County Share (1 divided by 2)	91.9760%
4. UAL Payment, not including POB Contribution	\$ 27,708,893
5. UAL Payment for POB Contribution	\$ (14,872,243)
6. County Share of 4. (3 multiplied by 4)	\$ 25,485,532
7. County Share of 5. (100% of 5)	<u>\$ (14,872,243)</u>
8. Total General County UAL Payment (6+7)	\$ 10,613,289
9. General County UAL Rate (8 divided by 1)*	5.23%
General (Non-County)	
1. General Non-County Projected Payroll for FYE June 30, 2022	\$ 17,719,920
2. Total General Projected Payroll for FYE June 30, 2022	\$ 220,836,538
3. Non-County Share (1 divided by 2)	8.0240%
4. UAL Payment, not including POB Contribution	\$ 27,708,893
5. UAL Payment for POB Contribution	\$ (14,872,243)
6. Non-County Share of 4. (3 multiplied by 4)	\$ 2,223,361
7. Non-County Share of 5. (0% of 5)	<u>\$ 0</u>
8. Total General Non-County UAL Payment (6+7)	\$ 2,223,361
9. General Non-County UAL Rate (8 divided by 1)*	12.55%
Safety (County)	
1. County Safety Projected Payroll for FYE June 30, 2022	\$ 65,657,354
2. Total Safety Projected Payroll for FYE June 30, 2022	\$ 65,657,354
3. County Share (1 divided by 2)	100.0000%
4. UAL Payment, not including POB Contribution	\$ 10,872,658
5. UAL Payment for POB Contribution	\$ (4,875,211)
6. County Share of 4. (3 multiplied by 4)	\$ 10,872,658
7. County Share of 5. (100% of 5)	<u>\$ (4,875,211)</u>
8. Total County Safety UAL Payment (6+7)	\$ 5,997,447
9. County Safety UAL Rate (8 divided by 1)*	9.13%

**Rates shown are prior to phase-in of assumption changes
Numbers may not add to totals due to rounding.*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

The employer contribution rates for FYE 2023 are shown in Table V-5 below, split by membership class, employer (County or non-County for General members), and tier (1-4). Separate rates are displayed for normal cost and UAL Amortization, both of which are further split into Basic and COLA rates. Table V-6 below shows employee contribution rates for FYE 2023 at sample ages.

Table V-5 Detailed Employer Contribution Rate as of June 30, 2021 for FYE 2023										
Member Type	Tier	Normal Cost			UAL Amortization Cost			Total Cost		
		Basic Rate	COLA Rate	Total Rate	Basic Rate	COLA Rate	Total Rate	Basic Rate	COLA Rate	Total Rate
General (County)	1	12.99%	2.66%	15.65%	4.13%	0.85%	4.98%	17.12%	3.51%	20.63%
General (County)	2&3	6.85%	1.39%	8.24%	4.14%	0.84%	4.98%	10.99%	2.23%	13.22%
General (County)	4	6.21%	1.41%	7.62%	4.06%	0.92%	4.98%	10.27%	2.33%	12.60%
General (Non-County)	1	12.99%	2.66%	15.65%	10.21%	2.09%	12.30%	23.20%	4.75%	27.95%
General (Non-County)	2&3	6.85%	1.39%	8.24%	10.22%	2.08%	12.30%	17.07%	3.47%	20.54%
General (Non-County)	4	6.21%	1.41%	7.62%	10.03%	2.27%	12.30%	16.24%	3.68%	19.92%
General (Total)	1	12.99%	2.66%	15.65%	4.61%	0.95%	5.56%	17.60%	3.61%	21.21%
General (Total)	2&3	6.85%	1.39%	8.24%	4.62%	0.94%	5.56%	11.47%	2.33%	13.80%
General (Total)	4	6.21%	1.41%	7.62%	4.53%	1.03%	5.56%	10.74%	2.44%	13.18%
Safety (County)	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Safety (County)	2&3	9.72%	2.26%	11.99%	6.87%	1.60%	8.47%	16.60%	3.86%	20.46%
Safety (County)	4	10.24%	2.54%	12.77%	6.79%	1.68%	8.47%	17.03%	4.22%	21.25%

Reflects second year of three year phase-in of assumption changes for employer contribution rate

Table V-6 Employee Contribution Rate at Sample Ages as of June 30, 2021 for FYE 2023						
Member Type	Tier	Age 25	Age 35	Age 45	Single Rate	
General	1	4.86%	5.96%	7.34%	N/A	
General	2&3	7.66%	9.39%	11.50%	N/A	
General	4	5.69%	7.89%	10.67%	N/A	
Safety	1	N/A	N/A	N/A	N/A	
Safety	2&3	11.13%	13.19%	15.28%	N/A	
Safety	4	11.54%	15.24%	19.28%	N/A	

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

Table V-7 below shows projected annual employer contributions for FYE 2023, split by membership class, employer (County or non-County for General members), and tier (1-4). The contribution amounts are further split into normal cost and UAL Amortization components.

Table V-7				
Estimated Annual Employer Contributions for FYE 2023				
Member Type	Tier	Normal Cost	UAL Amortization	Contributions Total
General (County)	1	\$ 70,766	\$ 22,525	\$ 93,291
General (County)	2&3	9,336,227	5,640,887	14,977,115
General (County)	4	7,295,213	4,769,525	12,064,738
General (Non-County)	1	6,174	4,853	11,027
General (Non-County)	2&3	814,494	1,215,457	2,029,950
General (Non-County)	4	636,435	1,027,702	1,664,137
General (Total)	1	76,940	27,378	104,318
General (Total)	2&3	10,150,721	6,856,344	17,007,065
General (Total)	4	7,931,648	5,797,227	13,728,875
Safety (County)	1	0	0	0
Safety (County)	2&3	4,942,096	3,493,867	8,435,962
Safety (County)	4	3,383,556	2,244,251	5,627,807

*Reflects second year of three-year phase-in of assumption changes for employer contribution rate
Numbers may not add to totals due to rounding.*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION V – CONTRIBUTIONS

Table V-8 below shows a projection of the expected contributions (for the fiscal year beginning one year after the valuation date) to cover the employer normal cost and UAL amortization over the next 20 years.

Table V-8 Retirement Contributions						
Valuation Year	Employer Normal Cost Contribution	Employer UAL Amortization Contribution	Total Employer Contributions	Employer Rate (%)	Employee Contribution	Employee Rate (%)
2021	\$ 26,484,961	\$ 18,419,066	\$ 44,904,027	15.2%	\$ 26,779,901	9.1%
2022	27,564,012	19,563,093	47,127,106	15.5%	27,565,505	9.1%
2023	28,374,188	19,734,288	48,108,476	15.4%	28,375,112	9.1%
2024	29,209,025	20,114,189	49,323,215	15.3%	29,209,897	9.1%
2025	30,069,642	20,278,648	50,348,290	15.2%	30,073,794	9.1%
2026	30,959,065	20,032,823	50,991,887	14.9%	30,964,635	9.1%
2027	31,875,964	19,825,190	51,701,154	14.7%	31,884,214	9.1%
2028	32,821,833	19,780,299	52,602,132	14.5%	32,833,351	9.0%
2029	33,797,548	19,436,615	53,234,163	14.2%	33,810,015	9.0%
2030	34,801,973	19,076,279	53,878,252	14.0%	34,818,481	9.0%
2031	35,838,385	19,323,946	55,162,330	13.9%	35,855,431	9.0%
2032	36,904,701	19,878,092	56,782,793	13.9%	36,922,090	9.0%
2033	38,002,111	20,471,997	58,474,108	13.9%	38,022,154	9.0%
2034	39,133,510	-	39,133,510	9.0%	39,153,613	9.0%
2035	40,297,855	-	40,297,855	9.0%	40,319,654	9.0%
2036	41,497,694	1,521,958	43,019,652	9.4%	41,517,725	9.0%
2037	42,731,497	-	42,731,497	9.0%	42,749,742	9.0%
2038	44,000,961	-	44,000,961	9.0%	44,018,425	9.0%
2039	45,308,413	-	45,308,413	9.0%	45,324,602	9.0%
2040	46,654,888	-	46,654,888	9.0%	46,670,338	9.0%
2041	48,042,175	-	48,042,175	9.0%	48,054,195	9.0%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION VI – ANNUAL COMPREHENSIVE FINANCIAL REPORTING INFORMATION

The GASB adopted Statement Nos. 67 and 68, replacing GASB Statement Nos. 25 and 27. GASB 67 was effective for periods beginning after June 15, 2013 (first effective June 30, 2014 for the Plan) and GASB 68 was effective for fiscal years beginning after June 15, 2014 (first effective for the fiscal year July 1, 2014 to June 30, 2015 for the Employers). The disclosures needed to satisfy the GASB requirements will be included in the TCERA GASB 67/68 Report as of June 30, 2021.

In accordance with Government Finance Officers Association (GFOA) and their recommended checklist for Annual Comprehensive Financial Reports (ACFRs), we continue to prepare the Schedule of Funded Liabilities by Type disclosure, as shown in Table VI-1. As requested by TCERA, we have also included the Schedule of Funding Progress (Table VI-2) and the Schedule of Employer Contributions (Table VI-3).

Table VI-1									
SCHEDULE OF FUNDED LIABILITIES BY TYPE									
(in thousands)									
Valuation Date June 30,	(A) Active/Inactive Member Contributions	(B) Retirees And Beneficiaries	(C) Remaining Active Members' Liabilities	Reported Assets	Portion of Actuarial Liabilities Covered by Reported Assets				
					(A)	(B)	(C)		
2012	\$ 231,491	\$ 570,367	\$ 299,598	\$ 981,946	100%	100%	60%		
2013	238,200	621,125	326,732	1,048,160	100%	100%	58%		
2014	252,883	660,147	358,802	1,101,929	100%	100%	53%		
2015	264,870	698,147	395,418	1,156,587	100%	100%	49%		
2016	272,740	748,703	409,993	1,192,642	100%	100%	42%		
2017	278,900	808,799	485,707	1,461,755	100%	100%	77%		
2018	287,078	869,729	499,550	1,523,030	100%	100%	73%		
2019	301,935	925,027	514,321	1,598,431	100%	100%	72%		
2020	319,562	1,008,432	547,804	1,670,786	100%	100%	63%		
2021	339,547	1,050,032	568,406	1,759,025	100%	100%	65%		

*Numbers may not add to totals due to rounding.
June 30, 2014 and earlier numbers calculated by prior actuary
June 30, 2017 assets include receivable for expected contribution from POB*



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION VI – ANNUAL COMPREHENSIVE FINANCIAL REPORTING INFORMATION

Table VI-2						
SCHEDULE OF FUNDING PROGRESS						
(dollars in thousands)						
Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Liability (AL)	Unfunded AL	Funded Ratio	Covered Payroll	Unfunded AL as a % of Covered Payroll
June 30, 2001	\$ 574,417	\$ 491,228	\$ (83,189)	116.9%	\$ 142,970	-58.2%
June 30, 2002	612,469	561,377	(51,092)	109.1%	158,263	-32.3%
June 30, 2003	634,249	608,505	(25,744)	104.2%	162,397	-15.9%
June 30, 2004	665,244	649,649	(15,595)	102.4%	158,032	-9.9%
June 30, 2005	681,618	714,656	33,038	95.4%	164,777	20.1%
June 30, 2006	729,899	792,844	62,945	92.1%	186,949	33.7%
June 30, 2007	800,967	846,030	45,063	94.7%	204,803	22.0%
June 30, 2008	879,051	946,414	67,363	92.9%	226,836	29.7%
June 30, 2009	919,179	996,747	77,568	92.2%	227,306	34.1%
June 30, 2010	946,640	1,033,211	86,571	91.6%	217,811	39.7%
June 30, 2011	969,681	1,072,144	102,463	90.4%	219,854	46.6%
June 30, 2012	981,946	1,101,456	119,510	89.1%	222,635	53.7%
June 30, 2013	1,048,160	1,186,057	137,897	88.4%	230,955	59.7%
June 30, 2014	1,101,929	1,271,832	169,903	86.6%	234,569	72.4%
June 30, 2015	1,156,587	1,358,435	201,848	85.1%	239,055	84.4%
June 30, 2016	1,192,642	1,431,436	238,794	83.3%	248,514	96.1%
June 30, 2017	1,461,755	1,573,406	111,651	92.9%	254,941	43.8%
June 30, 2018	1,523,030	1,656,357	133,326	92.0%	262,714	50.7%
June 30, 2019	1,598,431	1,741,283	142,851	91.8%	272,416	52.4%
June 30, 2020	1,670,786	1,875,797	205,011	89.1%	284,272	72.1%
June 30, 2021	1,759,025	1,957,985	198,960	89.8%	286,886	69.4%

Numbers may not add to totals due to rounding.

June 30, 2014 and earlier numbers calculated by prior actuary.

June 30, 2017 assets include receivable for expected contribution from POB.



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

SECTION VI – ANNUAL COMPREHENSIVE FINANCIAL REPORTING INFORMATION

Table VI-3					
SCHEDULE OF EMPLOYER CONTRIBUTIONS					
(dollars in thousands)					
Year Ended June, 30	Actuarially Determined Contribution	Actual Contribution	Percentage Contributed		
2001	\$ 18,872	\$ 18,872	100%		
2002	\$ 6,186	\$ 6,186	100%		
2003	5,245	5,245	100%		
2004	9,595	9,595	100%		
2005	10,502	10,502	100%		
2006	12,443	12,443	100%		
2007	17,975	17,975	100%		
2008	22,692	22,692	100%		
2009	22,431	22,431	100%		
2010	25,339	25,339	100%		
2011	23,434	23,434	100%		
2012	25,257	25,257	100%		
2013	29,847	29,847	100%		
2014	25,953	25,953	100%		
2015	30,992	30,992	100%		
2016	31,297	31,297	100%		
2017	33,616	33,616	100%		
2018	36,263	36,263	100%		
2019	33,494	33,494	100%		
2020	35,310	35,310	100%		
2021	36,766	36,766	100%		

June 30, 2014 and earlier numbers calculated by prior actuary.

June 30, 2017 assets include receivable for expected contribution from POB.

Note that the actual contributions do not include the contribution from POB proceeds above the actuarially determined amount.



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

The data for this valuation was provided by the Tulare County staff as of June 30, 2021. 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.

SUMMARY OF TOTAL ACTIVE MEMBERSHIP			
	June 30, 2020	June 30, 2021	Change
Total (General & Safety)			
Count	4,605	4,484	-2.6%
Average Age	41.9	42.4	1.2%
Average Service	9.9	10.5	6.2%
Annual Projected Payroll	\$ 284,272,002	\$ 286,886,367	0.9%
Average Annual Pay	\$ 61,731	\$ 63,980	3.6%

SUMMARY OF INACTIVE MEMBERSHIP*			
	June 30, 2020	June 30, 2021	Change
General			
Count	1,852	1,935	4.5%
Average Age	43.7	43.9	0.5%
Total Contribution Balance	\$ 43,402,585	\$ 46,297,586	6.7%
Average Contribution Balance	\$ 23,436	\$ 23,926	2.1%
Safety			
Count	331	360	8.8%
Average Age	39.2	39.3	0.2%
Total Contribution Balance	\$ 12,835,551	\$ 14,311,843	11.5%
Average Contribution Balance	\$ 38,778	\$ 39,755	2.5%
Total			
Count	2,183	2,295	5.1%
Average Age	43.1	43.2	0.4%
Total Contribution Balance	\$ 56,238,136	\$ 60,609,429	7.8%
Average Contribution Balance	\$ 25,762	\$ 26,409	2.5%

*Includes unclaimed accounts.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

SUMMARY OF RETIRED MEMBERSHIP				
	June 30, 2020	June 30, 2021	Change	
General				
Count	2,815	2,865	1.8%	
Average Age	71.2	71.5	0.5%	
Total Annual Allowance	\$ 62,618,882	\$ 65,750,480	5.0%	
Average Annual Allowance	\$ 22,245	\$ 22,950	3.2%	
Safety				
Count	593	607	2.4%	
Average Age	64.9	65.0	0.1%	
Total Annual Allowance	\$ 21,793,355	\$ 22,872,888	5.0%	
Average Annual Allowance	\$ 36,751	\$ 37,682	2.5%	
Total				
Count	3,408	3,472	1.9%	
Average Age	70.1	70.4	0.4%	
Total Annual Allowance	\$ 84,412,237	\$ 88,623,368	5.0%	
Average Annual Allowance	\$ 24,769	\$ 25,525	3.1%	

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

SUMMARY OF ACTIVE GENERAL MEMBERSHIP				
	June 30, 2020	June 30, 2021	Change	
General Tier 1				
Count	8	7	-12.5%	
Average Age	67.6	68.0	0.6%	
Average Service	36.5	36.8	0.9%	
Annual Projected Payroll	\$ 651,897	\$ 476,784	-26.9%	
Average Annual Pay	\$ 81,487	\$ 68,112	-16.4%	
General Tier 2 & 3				
Count	1,880	1,776	-5.5%	
Average Age	48.5	49.0	1.0%	
Average Service	15.9	16.9	6.6%	
Annual Projected Payroll	\$ 123,014,040	\$ 119,402,048	-2.9%	
Average Annual Pay	\$ 65,433	\$ 67,231	2.7%	
General Tier 4				
Count	1,848	1,855	0.4%	
Average Age	36.5	37.4	2.4%	
Average Service	3.4	4.0	19.7%	
Annual Projected Payroll	\$ 94,939,152	\$ 101,344,393	6.7%	
Average Annual Pay	\$ 51,374	\$ 54,633	6.3%	
General Total				
Count	3,736	3,638	-2.6%	
Average Age	42.6	43.1	1.2%	
Average Service	9.7	10.4	6.7%	
Annual Projected Payroll	\$ 218,605,089	\$ 221,223,225	1.2%	
Average Annual Pay	\$ 58,513	\$ 60,809	3.9%	

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

SUMMARY OF ACTIVE SAFETY MEMBERSHIP				
	June 30, 2020	June 30, 2021	Change	
Safety Tier 1				
Count	0	0	0.0%	
Average Age	0	0	0.0%	
Average Service	0	0	0.0%	
Annual Projected Payroll	\$ 0	\$ 0	0.0%	
Average Annual Pay	\$ 0	\$ 0	0.0%	
Safety Tier 2 & 3				
Count	503	468	-7.0%	
Average Age	44.0	44.7	1.7%	
Average Service	15.7	16.6	5.8%	
Annual Projected Payroll	\$ 41,496,639	\$ 39,977,926	-3.7%	
Average Annual Pay	\$ 82,498	\$ 85,423	3.5%	
Safety Tier 4				
Count	366	378	3.3%	
Average Age	31.9	32.6	2.2%	
Average Service	3.3	3.9	17.1%	
Annual Projected Payroll	\$ 24,170,274	\$ 25,685,216	6.3%	
Average Annual Pay	\$ 66,039	\$ 67,950	2.9%	
Safety Total				
Count	869	846	-2.6%	
Average Age	38.9	39.3	1.1%	
Average Service	10.5	11.0	4.2%	
Annual Projected Payroll	\$ 65,666,913	\$ 65,663,142	0.0%	
Average Annual Pay	\$ 75,566	\$ 77,616	2.7%	

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

SUMMARY OF RETIRED GENERAL MEMBERSHIP			
	June 30, 2020	June 30, 2021	Change
Service Retirement			
Count	2,226	2,262	1.6%
Average Age	71.2	71.4	0.3%
Total Annual Allowance	\$ 52,711,040	\$ 55,447,906	5.2%
Average Annual Allowance	\$ 23,680	\$ 24,513	3.5%
Disability			
Count	207	204	-1.4%
Average Age	64.5	65.0	0.9%
Total Annual Allowance	\$ 4,426,622	\$ 4,501,396	1.7%
Average Annual Allowance	\$ 21,385	\$ 22,066	3.2%
Beneficiaries			
Count	382	399	4.5%
Average Age	74.9	75.4	0.6%
Total Annual Allowance	\$ 5,481,220	\$ 5,801,178	5.8%
Average Annual Allowance	\$ 14,349	\$ 14,539	1.3%
Total			
Count	2,815	2,865	1.8%
Average Age	71.2	71.5	0.5%
Total Annual Allowance	\$ 62,618,882	\$ 65,750,480	5.0%
Average Annual Allowance	\$ 22,245	\$ 22,950	3.2%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

SUMMARY OF RETIRED SAFETY MEMBERSHIP			
	June 30, 2020	June 30, 2021	Change
Service Retirement			
Count	348	357	2.6%
Average Age	66.2	66.3	0.1%
Total Annual Allowance	\$ 14,780,132	\$ 15,528,655	5.1%
Average Annual Allowance	\$ 42,472	\$ 43,498	2.4%
Disability			
Count	140	138	-1.4%
Average Age	59.4	59.7	0.6%
Total Annual Allowance	\$ 4,542,057	\$ 4,597,665	1.2%
Average Annual Allowance	\$ 32,443	\$ 33,316	2.7%
Beneficiaries			
Count	105	112	6.7%
Average Age	67.7	67.1	-0.9%
Total Annual Allowance	\$ 2,471,166	\$ 2,746,568	11.1%
Average Annual Allowance	\$ 23,535	\$ 24,523	4.2%
Total			
Count	593	607	2.4%
Average Age	64.9	65.0	0.1%
Total Annual Allowance	\$ 21,793,355	\$ 22,872,888	5.0%
Average Annual Allowance	\$ 36,751	\$ 37,682	2.5%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2021																					
TIER 1																					
Attained Age	YEARS OF CREDITED SERVICE												Total								
	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 & up		
	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	
Under 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30 to 34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
35 to 39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
40 to 44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
45 to 49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
50 to 54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
55 to 59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
60 to 64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	53,364	1	53,364
65 to 69	0	0	0	0	1	119,240	0	0	0	0	0	0	0	1	76,894	1	49,374	2	65,687	5	75,376
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	46,539	0	0	1	46,539
Total	0	0	0	0	1	119,240	0	0	0	0	0	0	0	1	76,894	2	47,957	3	61,579	7	68,112

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2021																						
TIER 2 & 3																						
Attained Age	YEARS OF CREDITED SERVICE												Total									
	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 & up			
	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.		
Under 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0		
25 to 29	0	0	0	0	6	42,977	0	0	0	0	0	0	0	0	0	0	0	0	0	6	42,977	
30 to 34	0	0	1	75,855	45	58,695	40	56,382	2	54,800	0	0	0	0	0	0	0	0	0	88	57,750	
35 to 39	0	0	4	99,437	73	70,258	122	67,694	38	65,022	0	0	0	0	0	0	0	0	0	237	68,591	
40 to 44	0	0	9	63,903	51	65,684	129	68,485	121	68,116	39	66,032	0	0	0	0	0	0	0	349	67,555	
45 to 49	0	0	3	96,640	41	72,574	89	65,057	79	67,431	84	64,047	20	72,482	0	0	0	0	0	316	67,127	
50 to 54	0	0	3	64,409	22	56,124	53	61,493	76	68,471	65	61,554	36	63,919	9	65,687	0	0	0	264	63,576	
55 to 59	0	0	1	141,091	23	59,400	56	67,523	64	66,624	66	66,128	36	68,301	19	75,788	2	69,139	0	0	267	67,244
60 to 64	0	0	0	0	13	80,754	36	73,190	37	63,074	49	61,827	18	65,449	24	88,333	9	79,471	2	72,792	188	70,249
65 to 69	0	0	0	0	7	66,091	10	79,618	11	103,955	10	57,344	3	76,371	3	88,689	1	88,975	0	0	45	79,109
70 & up	0	0	0	0	1	318,652	4	81,768	4	71,360	4	98,499	2	71,754	0	0	1	43,557	0	0	16	94,514
Total	0	0	21	79,665	282	66,615	539	66,674	432	68,009	317	64,093	115	67,481	55	80,313	13	75,850	2	72,792	1,776	67,231



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2021 TIER 4																							
Attained Age	YEARS OF CREDITED SERVICE																				Total		
	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 & up		Total		
	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	
Under 25	19	\$ 40,211	53	\$ 41,598	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	72	\$ 41,232	
25 to 29	43	52,166	249	46,787	84	49,117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	376	47,923
30 to 34	37	60,808	257	53,296	202	61,972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	496	57,390
35 to 39	30	51,180	167	54,403	136	61,653	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	333	57,074
40 to 44	24	60,430	116	56,519	70	59,443	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210	57,941
45 to 49	15	51,916	65	50,990	46	57,783	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	126	53,580
50 to 54	11	51,199	55	59,644	35	54,145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	56,819
55 to 59	7	56,544	27	57,727	34	60,653	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	59,068
60 to 64	6	49,383	23	54,300	20	63,057	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	57,272
65 to 69	1	28,356	10	65,228	11	58,883	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	60,380
70 & up	0	0	0	0	2	38,602	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	38,602
Total	193	53,395	1,022	52,102	640	59,049	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,855	54,633

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2021																						
TIER 1																						
YEARS OF CREDITED SERVICE																						
Attained Age	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 & up		Total	
	Average		Average		Average		Average		Average		Average		Average		Average		Average		Average		Average	
	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.
Under 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55 to 59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
60 to 64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2021																						
TIER 2 & 3																						
YEARS OF CREDITED SERVICE																						
Attained Age	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 & up		Total	
	Average		Average		Average		Average		Average		Average		Average		Average		Average		Average		Average	
	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.	No.	Comp.
Under 25	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	22	75,198	10	77,914	0	0	0	0	0	0	0	0	0	0	0	0	32	76,047
35 to 39	1	76,182	2	81,299	22	76,692	57	80,072	26	84,736	0	0	0	0	0	0	0	0	0	0	108	80,493
40 to 44	1	70,476	1	78,855	13	78,360	52	83,421	36	85,380	12	91,528	0	0	0	0	0	0	0	0	115	84,156
45 to 49	0	0	0	0	5	81,383	29	82,964	32	85,932	27	97,446	5	122,008	0	0	0	0	0	0	98	89,834
50 to 54	0	0	0	0	3	68,076	13	82,779	19	86,027	22	90,768	19	93,309	3	159,955	0	0	0	0	79	90,690
55 to 59	0	0	0	0	1	84,391	7	101,512	5	71,619	8	96,164	4	76,416	5	105,920	0	0	0	0	30	91,921
60 to 64	0	0	0	0	0	0	0	0	2	75,606	3	74,748	0	0	1	71,910	0	0	0	0	6	74,561
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	73,329	3	80,484	66	76,603	168	82,582	120	84,754	72	93,331	28	96,021	9	120,153	0	0	0	0	468	85,423



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2021 TIER 4																						
YEARS OF CREDITED SERVICE																						
Attained Age	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 & up		Total	
	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.	No.	Average Comp.
Under 25	16	\$ 43,588	18	\$ 62,291	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	34	\$ 53,490
25 to 29	21	56,112	95	66,364	19	70,995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135	65,421
30 to 34	4	58,217	66	68,660	45	70,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	69,134
35 to 39	1	52,535	18	72,903	25	74,087	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	73,113
40 to 44	2	62,506	8	69,765	9	74,716	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	71,346
45 to 49	0	0	5	69,442	6	83,579	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	77,153
50 to 54	3	72,333	3	74,543	3	71,570	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	72,815
55 to 59	1	76,881	4	91,453	3	104,776	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	94,628
60 to 64	0	0	1	78,600	1	84,262	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	81,431
65 to 69	0	0	0	0	1	87,879	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	87,879
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	48	53,751	218	68,087	112	73,770	0	0	0	0	0	0	0	0	0	0	0	0	0	0	378	67,950

**Average Increases in Pay
(for upcoming year, based on valuation data)**

Longevity and Promotion Component	2.22%
Wage Inflation Component	<u>3.00%</u>
Total	5.22%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

AGE DISTRIBUTION OF TOTAL INACTIVE PARTICIPANTS PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2021								
Age	Disability Retirements		Normal, Early Deferred Vested Retirements		Surviving Spouses and Beneficiaries Receiving Benefits		Total	
	Number	Annual Benefit	Number	Annual Benefit	Number	Annual Benefit	Number	Annual Benefit
Under 55	89	\$ 2,685,267	48	\$ 787,203	36	\$ 515,990	173	\$ 3,988,460
55-59	45	1,186,160	211	5,404,682	19	329,555	275	6,920,397
60-64	46	1,225,890	377	10,285,891	45	659,257	468	12,171,038
65-69	61	1,458,778	608	17,927,426	69	1,291,682	738	20,677,886
70-74	59	1,587,289	618	17,629,434	92	1,648,209	769	20,864,932
75-79	26	659,772	435	11,686,933	82	1,366,985	543	13,713,690
80 & Over	16	295,905	322	7,254,992	168	2,736,068	506	10,286,965
Total	342	\$ 9,099,061	2,619	\$ 70,976,561	511	\$ 8,547,746	3,472	\$ 88,623,368

AGE DISTRIBUTION OF INACTIVE GENERAL PARTICIPANTS PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2021								
Age	Disability Retirements		Normal, Early Deferred Vested Retirements		Surviving Spouses and Beneficiaries Receiving Benefits		Total	
	Number	Annual Benefit	Number	Annual Benefit	Number	Annual Benefit	Number	Annual Benefit
Under 55	34	\$ 728,987	26	\$ 229,108	17	\$ 140,772	77	\$ 1,098,867
55-59	27	604,320	136	2,031,590	13	198,791	176	2,834,701
60-64	30	730,452	312	7,779,271	32	356,392	374	8,866,115
65-69	44	919,207	531	14,414,161	48	660,372	623	15,993,740
70-74	41	933,254	566	14,735,350	76	1,185,621	683	16,854,225
75-79	20	443,983	380	9,433,354	68	1,076,393	468	10,953,730
80 & Over	8	141,193	311	6,825,072	145	2,182,837	464	9,149,102
Total	204	\$ 4,501,396	2,262	\$ 55,447,906	399	\$ 5,801,178	2,865	\$ 65,750,480



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

AGE DISTRIBUTION OF INACTIVE SAFETY PARTICIPANTS PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2021								
Age	Disability Retirements		Normal, Early Deferred Vested Retirements		Surviving Spouses and Beneficiaries Receiving Benefits		Total	
	Number	Annual Benefit	Number	Annual Benefit	Number	Annual Benefit	Number	Annual Benefit
Under 55	55	\$ 1,956,280	22	\$ 558,095	19	\$ 375,218	96	\$ 2,889,593
55-59	18	581,840	75	3,373,092	6	130,764	99	4,085,696
60-64	16	495,438	65	2,506,620	13	302,865	94	3,304,923
65-69	17	539,571	77	3,513,265	21	631,310	115	4,684,146
70-74	18	654,035	52	2,894,084	16	462,588	86	4,010,707
75-79	6	215,789	55	2,253,579	14	290,592	75	2,759,960
80 & Over	8	154,712	11	429,920	23	553,231	42	1,137,863
Total	138	\$ 4,597,665	357	\$ 15,528,655	112	\$ 2,746,568	607	\$ 22,872,888

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

Retirants and Beneficiaries Added to and Removed From Payroll										
Plan Year Ended June 30	At Beginning of Year	Added During Year	Annual Allowances Added to the Rolls	Removed During Year	Annual Allowances Removed from the Rolls	At End of Year	Annual Allowance	% Increase in Annual Allowance	Average Annual Allowance	
2011	2,181	191	\$ 4,602,464	59	\$ 873,415	2,313	\$ 45,224,268	8.99%	\$ 19,552	
2012	2,313	181	\$ 4,736,189	70	\$ 985,645	2,424	\$ 48,974,812	8.29%	\$ 20,204	
2013	2,424	183	\$ 4,745,718	65	\$ 483,264	2,542	\$ 53,237,266	8.70%	\$ 20,943	
2014	2,542	224	\$ 4,198,797	75	\$ 659,212	2,691	\$ 56,776,851	6.65%	\$ 21,099	
2015	2,691	218	\$ 4,360,151	88	\$ 1,432,880	2,821	\$ 59,960,567	5.61%	\$ 21,255	
2016	2,821	185	\$ 4,540,356	66	\$ 986,150	2,940	\$ 64,292,378	7.22%	\$ 21,868	
2017	2,940	191	\$ 4,483,587	59	\$ 896,529	3,072	\$ 68,669,924	6.81%	\$ 22,353	
2018	3,072	178	\$ 5,487,994	58	\$ 830,938	3,192	\$ 73,731,771	7.37%	\$ 23,099	
2019	3,192	174	\$ 4,705,555	54	\$ 1,098,384	3,312	\$ 78,971,061	7.11%	\$ 23,844	
2020	3,312	163	\$ 4,626,973	67	\$ 925,421	3,408	\$ 84,412,237	6.89%	\$ 24,769	
2021	3,408	141	\$ 3,908,186	77	\$ 1,434,138	3,472	\$ 88,623,368	4.99%	\$ 25,525	

Data prior to 2015 was compiled by the previous actuary.

Starting in 2015, Annual Allowances Added to the Rolls no longer includes cost of living adjustments for existing retirees.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

Reconciliation of System Membership Since Prior Valuation											
Total Members											
	Active	Deferred Vested	Deferred Vested - Transferred	Ordinary Disability	Duty Disability	Retired	Beneficiaries	Non-Vested Terminations Due Refund	QDRO	Deferred QDRO	Totals
June 30, 2020	4,605	448	654	123	224	2,574	436	1,065	51	16	10,196
New Entrants	264										264
Rehires	12	(6)	(1)					(5)			-
Duty Disabilities	(2)				3	(1)					-
Ordinary Disabilities		(1)		1							-
Retirements	(89)	(15)	(24)			128					-
Vested Terminations	(68)	68									-
Non-Vested Terminations and Death without beneficiary	(151)		(1)	(2)	(2)	(46)		147			(55)
Death with beneficiary	(1)				(5)	(38)	44				-
Transfers	(14)	(8)	34					(11)			1
Beneficiary Deaths							(27)				(27)
Domestic Relations Orders									4		4
Deferred Domestic Relations Orders										3	3
Withdrawals Paid	(72)	(18)	(7)					(43)		(1)	(141)
Data Corrections		(1)		(1)	1	2	1	2	2		6
June 30, 2021	4,484	467	655	121	221	2,619	454	1,155	57	18	10,251

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

Reconciliation of System Membership Since Prior Valuation											
General Members											
	Active	Deferred Vested	Deferred Vested - Transferred	Ordinary Disability	Duty Disability	Retired	Beneficiaries	Non-Vested Terminations Due Refund	QDRO	Deferred QDRO	Totals
June 30, 2020	3,736	371	542	105	102	2,226	351	932	31	7	8,403
New Entrants	208										208
Rehires	11	(6)	-					(5)			-
Duty Disabilities	(1)	-			2	(1)					-
Ordinary Disabilities	-	(1)		1							-
Retirements	(71)	(14)	(21)			106					-
Vested Terminations	(54)	54									-
Non-Vested Terminations and Death without beneficiary	(119)	-	(1)	(2)		(42)		116		-	(48)
Death with beneficiary	-		-	-	(3)	(30)	33				-
Transfers	(14)	(6)	26					(7)			(1)
Beneficiary Deaths							(21)				(21)
Domestic Relations Orders									4		4
Deferred Domestic Relations Orders										3	3
Withdrawals Paid	(58)	(13)	(6)					(36)		(1)	(114)
Data Corrections		-		(1)		3	(1)	1	2		4
June 30, 2021	3,638	385	540	103	101	2,262	362	1,001	37	9	8,438

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX A – MEMBERSHIP INFORMATION

Reconciliation of System Membership Since Prior Valuation											
Safety Members											
	Active	Deferred Vested	Deferred Vested - Transferred	Ordinary Disability	Duty Disability	Retired	Beneficiaries	Non-Vested Terminations Due Refund	QDRO	Deferred QDRO	Totals
June 30, 2020	869	77	112	18	122	348	85	133	20	9	1,793
New Entrants	56										56
Rehires	1	-	(1)					-			-
Duty Disabilities	(1)				1						-
Ordinary Disabilities											-
Retirements	(18)	(1)	(3)			22					-
Vested Terminations	(14)	14	-								-
Non-Vested Terminations and Death without beneficiary	(32)		-		(2)	(4)		31			(7)
Death with beneficiary	(1)				(2)	(8)	11				-
Transfers		(2)	8					(4)			2
Beneficiary Deaths							(6)				(6)
Domestic Relations Orders									-		-
Deferred Domestic Relations Orders										-	-
Withdrawals Paid	(14)	(5)	(1)					(7)		-	(27)
Data Corrections		(1)		-	1	(1)	2	1			2
June 30, 2021	846	82	115	18	120	357	92	154	20	9	1,813

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

**APPENDIX B – STATEMENT OF CURRENT ACTUARIAL
ASSUMPTIONS AND METHODS**

The methods and assumptions used in the actuarial valuation as of June 30, 2021 are outlined on the following pages.

A. Actuarial Methods

1. Actuarial Cost Method

The actuarial valuation is prepared using the entry age actuarial cost method (CERL 31453.5). Under the principles of this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit (until maximum retirement age). For members who transferred between plans, entry age is based on original entry into the system. The normal cost for the Plan is based on the sum of the individual normal costs for each member (Individual Entry Age Method).

The UAL (or Surplus) is amortized as a percentage of the projected salaries of present and future members of TCERA. At its October 28, 2015 meeting, the Board adopted 19-year layered amortization of the UAL. The UAL as of June 30, 2015 is being amortized over a closed 19-year period as a level percentage of payroll, assuming payroll increases of 3.00% per year, and subsequent changes in the UAL due to experience gains and losses, assumption changes, or plan changes will be amortized over new closed 19-year periods.

2. Valuation of Assets

Beginning in fiscal year 2009, the assets are valued using a 10-year smoothed method based on the difference between the expected market value and the actual market value of the assets, net of expenses, as of June 30 and December 31 of each year. The expected market value at the end of each period is the beginning market value increased with the net increase in the cash flow of funds, all increased with interest at the expected investment return rate assumption.

A 30% asset corridor limit is applied.

The contribution of \$250 million expected to be made on or before June 30, 2018 from the proceeds of a POB was included in the 2017 valuation as a receivable in both the Market and Actuarial Values of Assets as of June 30, 2017. Accordingly, it was not recorded as a contribution during the FY 2017-2018.

3. Changes in Actuarial Methods

None.

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B. Actuarial Assumptions

The TCERA Board has the authority to select economic and demographic assumptions for the Plan. The assumptions used in this report reflect the results of an Experience Study performed by Cheiron covering the period July 1, 2017 through June 30, 2020.

1. Rate of Return

Assets are assumed to earn 7.00% net of investment and administrative expenses.

2. Inflation

The Consumer Price Index (CPI) is assumed to increase at the rate of 2.75% per year. This assumption is also used to project the compensation limit for PEPRA members.

3. Post Retirement COLA

Benefits are assumed to increase after retirement at the rate of 2.6% per year for Tier 1 and 2% per year for Tiers 2-4.

4. Internal Revenue Code Limits and PEPRA Pensionable Compensation Limits

The maximum benefit and maximum compensation limitations under Internal Revenue Code Sections 415 and 401(a)(17), respectively, are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement. The PEPRA compensation limit, which was \$128,059 for calendar year 2021 for members participating in Social Security, was applied.

5. Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 7.00%.

6. Family Composition

Percentage married for deferred vested terminations and all active members who retire, become disabled, or die during active service is shown below. Spouses of male members are assumed to be female and three years younger. Spouses of female members are assumed to be male and two years older. Actual spouse demographic data is reflected following benefit commencement.

Division	Gender	Percentage
General	Male	80%
General	Female	60%
Safety	Male	85%
Safety	Female	65%

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7. Increases in Pay

Wage inflation component: 3.00%

Additional longevity and promotion component:

Longevity and Promotion Increases		
Service	General	Safety
0	8.00%	9.00%
1	6.50%	6.00%
2	5.50%	5.00%
3	4.00%	3.00%
4	3.00%	3.00%
5	2.00%	2.00%
6	1.75%	2.00%
7	1.50%	2.00%
8	1.00%	1.00%
9	1.00%	1.00%
10	1.00%	1.00%
11	1.00%	1.00%
12	1.00%	1.00%
13	1.00%	1.00%
14	1.00%	1.00%
15+	0.50%	1.00%

8. Sick Leave Service Credit Upon Service Retirement

Active members' service retirement benefits are adjusted by a percentage, 1% for General and 2% for Safety, for anticipated conversions of sick leave to retirement service credit.

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9. Termination

Age	Rates of Termination						
	General				Safety		
	Years of Service				Years of Service		
	Less than 3	3 to 5	5 to 10	10 or more	Less than 3	3 to 5	5 or more
20	15.00%	12.00%	10.00%	10.00%	11.00%	7.00%	6.00%
21	15.00%	12.00%	10.00%	10.00%	11.00%	7.00%	6.00%
22	15.00%	12.00%	10.00%	10.00%	11.00%	7.00%	6.00%
23	15.00%	12.00%	10.00%	10.00%	11.00%	7.00%	6.00%
24	15.00%	12.00%	10.00%	10.00%	11.00%	7.00%	6.00%
25	15.00%	8.00%	8.00%	8.00%	11.00%	7.00%	6.00%
26	15.00%	8.00%	8.00%	8.00%	11.00%	7.00%	6.00%
27	15.00%	8.00%	8.00%	8.00%	11.00%	7.00%	6.00%
28	15.00%	8.00%	8.00%	8.00%	11.00%	7.00%	6.00%
29	15.00%	8.00%	8.00%	8.00%	11.00%	7.00%	6.00%
30	15.00%	8.00%	6.00%	5.00%	11.00%	7.00%	4.50%
31	15.00%	8.00%	6.00%	5.00%	11.00%	7.00%	4.50%
32	15.00%	8.00%	6.00%	5.00%	11.00%	7.00%	4.50%
33	15.00%	8.00%	6.00%	5.00%	11.00%	7.00%	4.50%
34	15.00%	8.00%	6.00%	5.00%	11.00%	7.00%	4.50%
35	15.00%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
36	15.00%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
37	15.00%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
38	15.00%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
39	15.00%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
40	14.25%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
41	14.25%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
42	14.25%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
43	14.25%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
44	14.25%	8.00%	5.00%	3.00%	11.00%	7.00%	4.00%
45	13.50%	8.00%	5.00%	3.00%	8.00%	6.00%	3.50%
46	13.50%	8.00%	5.00%	3.00%	8.00%	6.00%	3.50%
47	13.50%	8.00%	5.00%	3.00%	8.00%	6.00%	3.50%
48	13.50%	8.00%	5.00%	3.00%	8.00%	6.00%	3.50%
49	13.50%	8.00%	5.00%	3.00%	8.00%	6.00%	3.50%
50	12.75%	5.00%	5.00%	3.00%	8.00%	6.00%	0.00%
51	12.75%	5.00%	5.00%	3.00%	8.00%	6.00%	0.00%
52	12.75%	5.00%	5.00%	3.00%	8.00%	6.00%	0.00%
53	12.75%	5.00%	5.00%	3.00%	8.00%	6.00%	0.00%
54	12.75%	5.00%	5.00%	3.00%	8.00%	6.00%	0.00%
55	12.00%	5.00%	5.00%	3.00%	5.00%	6.00%	0.00%
56	12.00%	5.00%	5.00%	3.00%	5.00%	6.00%	0.00%
57	12.00%	5.00%	5.00%	3.00%	5.00%	6.00%	0.00%
58	12.00%	5.00%	5.00%	3.00%	5.00%	6.00%	0.00%
59	12.00%	5.00%	5.00%	3.00%	5.00%	6.00%	0.00%
60	11.25%	5.00%	5.00%	3.00%	0.00%	0.00%	0.00%
61	11.25%	5.00%	5.00%	3.00%	0.00%	0.00%	0.00%
62	11.25%	5.00%	5.00%	3.00%	0.00%	0.00%	0.00%
63	11.25%	5.00%	5.00%	3.00%	0.00%	0.00%	0.00%
64	11.25%	5.00%	5.00%	3.00%	0.00%	0.00%	0.00%
65 and over	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

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Rates of termination apply to active Members who terminate their employment. Rates are assumed not to apply after eligibility for retirement.

Former members with contributions on deposit are assumed to receive a retirement benefit commencing at the following ages:

General Members: Age 60
Safety Members: Age 55

10. Rates of Deferred Vested Termination

Rates of deferred vested termination are a percentage of the termination rates shown on the previous page.

Service	General Males	General Females	Safety
5-10	75%	55%	60%
10-15	85%	70%	60%
15-20	85%	75%	60%
20+	85%	75%	100%

11. Reciprocal Transfers

60% of General and 65% of Safety deferred vested terminated members that leave their member contributions on deposit with the Plan are assumed to be reciprocal.

Reciprocal members are assumed to remain with the reciprocal agency until retirement, and receive annual salary increases of 3.50% for General members and 4.00% for Safety members.

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12. Rates of Disability

Disability rates of active participants are shown below.

Age	Rates of Disability					
	General - Males		General - Females		Safety	
	Ordinary	Duty	Ordinary	Duty	Ordinary	Duty
20	0.000%	0.010%	0.000%	0.010%	0.000%	0.110%
21	0.000%	0.010%	0.000%	0.010%	0.000%	0.120%
22	0.000%	0.010%	0.000%	0.010%	0.000%	0.130%
23	0.000%	0.010%	0.000%	0.010%	0.000%	0.140%
24	0.000%	0.010%	0.000%	0.010%	0.000%	0.150%
25	0.010%	0.010%	0.010%	0.010%	0.050%	0.170%
26	0.010%	0.010%	0.010%	0.010%	0.050%	0.200%
27	0.010%	0.010%	0.010%	0.010%	0.050%	0.250%
28	0.010%	0.010%	0.010%	0.010%	0.050%	0.300%
29	0.010%	0.010%	0.010%	0.010%	0.050%	0.350%
30	0.010%	0.010%	0.010%	0.010%	0.050%	0.400%
31	0.010%	0.010%	0.010%	0.010%	0.050%	0.450%
32	0.010%	0.010%	0.010%	0.010%	0.050%	0.500%
33	0.010%	0.010%	0.010%	0.010%	0.050%	0.520%
34	0.010%	0.010%	0.010%	0.010%	0.050%	0.540%
35	0.020%	0.020%	0.080%	0.020%	0.050%	0.560%
36	0.020%	0.020%	0.080%	0.020%	0.050%	0.580%
37	0.020%	0.020%	0.080%	0.020%	0.050%	0.600%
38	0.030%	0.030%	0.120%	0.030%	0.050%	0.620%
39	0.030%	0.030%	0.130%	0.030%	0.050%	0.640%
40	0.030%	0.030%	0.140%	0.030%	0.075%	0.660%
41	0.040%	0.045%	0.160%	0.045%	0.075%	0.670%
42	0.040%	0.045%	0.170%	0.045%	0.080%	0.680%
43	0.040%	0.045%	0.180%	0.045%	0.085%	0.690%
44	0.050%	0.050%	0.190%	0.050%	0.090%	0.700%
45	0.050%	0.055%	0.200%	0.055%	0.095%	0.750%
46	0.050%	0.060%	0.220%	0.060%	0.100%	0.800%
47	0.060%	0.070%	0.240%	0.070%	0.150%	0.850%
48	0.070%	0.080%	0.260%	0.080%	0.200%	0.900%
49	0.080%	0.090%	0.280%	0.090%	0.250%	0.950%
50	0.090%	0.100%	0.300%	0.100%	0.300%	1.000%
51	0.100%	0.150%	0.320%	0.150%	0.350%	1.250%
52	0.120%	0.200%	0.340%	0.200%	0.400%	1.500%
53	0.140%	0.250%	0.360%	0.250%	0.450%	1.750%
54	0.160%	0.300%	0.380%	0.300%	0.500%	2.000%
55	0.180%	0.350%	0.400%	0.350%	0.550%	2.250%
56	0.200%	0.400%	0.420%	0.400%	0.600%	2.300%
57	0.220%	0.450%	0.440%	0.450%	0.650%	2.350%
58	0.240%	0.500%	0.480%	0.500%	0.700%	2.400%
59	0.260%	0.550%	0.520%	0.550%	0.750%	2.450%
60	0.280%	0.600%	0.540%	0.600%	0.000%	0.000%
61	0.300%	0.650%	0.560%	0.650%	0.000%	0.000%
62	0.320%	0.700%	0.600%	0.700%	0.000%	0.000%
63	0.340%	0.750%	0.620%	0.750%	0.000%	0.000%
64	0.360%	0.800%	0.640%	0.800%	0.000%	0.000%
65 and over	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%

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13. Rates of Mortality for Healthy Lives

Mortality rates for General actives, retirees, beneficiaries (both General and Safety), terminated vested, and reciprocals are based on the sex distinct Retired Pensioner (RP) 2014 Combined Healthy Tables, published by the Society of Actuaries, with Generational improvement using Projection Scale MP-2019, and increased by 2.2% for males and 8.0% for females to reflect Plan experience.

Mortality rates for Safety actives, retirees, terminated vested, and reciprocals are based on the sex distinct Retired Pensioner (RP) 2014 Combined Healthy Tables with blue-collar adjustment, published by the Society of Actuaries, with Generational improvement using Projection Scale MP-2019, and increased by 4.5% for males to reflect Plan experience.

14. Rates of Mortality for Retired Disabled Lives

Mortality rates for disabled retirees are based on the sex distinct Retired Pensioner (RP) 2014 Disabled Retiree Mortality Table, published by the Society of Actuaries, with Generational improvement using Projection Scale MP-2019.

15. Duty-Related Deaths (Safety Employees Only)

Percentage of deaths assumed to be duty related	
Age	
20-24	37%
25-30	42%
31-34	45%
35-43	50%
44-45	52%
46-47	54%
48-49	56%
50-54	58%
55-56	60%
57-58	62%
59	63%

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16. Rates of Retirement

Rates of retirement are based on age and service according to the following below.

Age	General Years of Service		Safety Years of Service	
	Less than 30	30 or more	Less than 20	20 or more
45	0.00%	0.00%	7.00%	7.00%
46	0.00%	0.00%	7.00%	7.00%
47	0.00%	0.00%	7.00%	7.00%
48	0.00%	0.00%	7.00%	7.00%
49	0.00%	0.00%	7.00%	7.00%
50	5.00%	10.00%	7.00%	7.00%
51	5.00%	10.00%	7.00%	7.00%
52	5.00%	10.00%	7.00%	7.00%
53	5.00%	10.00%	7.00%	7.00%
54	5.00%	10.00%	7.00%	7.00%
55	6.00%	10.00%	10.00%	18.00%
56	6.00%	10.00%	10.00%	18.00%
57	6.00%	10.00%	10.00%	18.00%
58	6.00%	10.00%	10.00%	18.00%
59	6.00%	10.00%	10.00%	18.00%
60	15.00%	20.00%	20.00%	40.00%
61	15.00%	20.00%	20.00%	40.00%
62	15.00%	20.00%	20.00%	40.00%
63	15.00%	20.00%	20.00%	40.00%
64	15.00%	20.00%	20.00%	40.00%
65	35.00%	35.00%	40.00%	75.00%
66	35.00%	35.00%	40.00%	75.00%
67	35.00%	35.00%	40.00%	75.00%
68	35.00%	35.00%	40.00%	75.00%
69	35.00%	35.00%	40.00%	75.00%
70	35.00%	35.00%	100.00%	100.00%
71	35.00%	35.00%	100.00%	100.00%
72	35.00%	35.00%	100.00%	100.00%
73	35.00%	35.00%	100.00%	100.00%
74	35.00%	35.00%	100.00%	100.00%
75 and over	100.00%	100.00%	100.00%	100.00%

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17. Disclosures regarding Models Used

In accordance with Actuarial Standard of Practice (ASOP) No. 56 *Modeling*, the following disclosures are made:

a. Valuation Software

Cheiron utilizes ProVal, an actuarial valuation software program leased from Winklevoss Technologies (WinTech), to calculate liabilities and projected benefit payments. We have reviewed the underlying workings of this model to the degree feasible and consistent with ASOP No. 56 and believe them to be appropriate for the purposes of the valuation.

b. Projections

This valuation report includes projections of future contributions and funded status for the purpose of assisting the Retirement Board and the sponsors of the System with the management of the Fund.

The projections are based on the same census data and financial information as of June 30, 2021 as disclosed in this actuarial valuation. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of June 30, 2021 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after June 30, 2021.

The projections assume that all future assumptions are met except where specifically indicated. The future outcomes become increasingly uncertain over time, and therefore the general trends and not the absolute values should be considered in the review of these projections. Further, for the purpose of these projections, we have only reflected the impact of new entrants entering the plan in aggregate and have not developed individual liabilities or detailed profiles related to these potential new entrants. We feel this is appropriate for the purpose of these projections, but if they were to be used for other purposes, this may not be appropriate and alternative projections may need to be developed.

18. Changes in Assumptions

None.

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APPENDIX C – SUMMARY OF PLAN PROVISIONS

All actuarial calculations are based on our understanding of the statutes governing the TCERA as contained in the County Employees Retirement Law (CERL) of 1937, with provisions adopted by the County Board of Supervisors, a district Board of Directors, or the TCERA Board, effective through June 30, 2021. The benefit and contribution provisions of this law are summarized briefly below, (*along with corresponding references to the State Code*). This summary does not attempt to cover all the detailed provisions of the law.

There have been no changes to the Plan provisions since the prior valuation.

A. Membership in Retirement Plans

The County has established several defined benefit tiers based primarily on a member's date of entry into TCERA and in some cases, bargaining unit. There are two types of TCERA members:

Safety members: Employees whose principal duty is active law enforcement or active fire suppression are eligible to be Safety members. Membership in a particular tier depends upon date of entry to the system.

General members: All non-Safety employees are eligible to be General members. Membership in a particular tier depends primarily upon date of entry to the system.

Tier 1: General and Safety employees hired on or before December 31, 1979.

Tier 2: General and Safety employees hired on or after January 1, 1980 through December 31, 1989.

Tier 3: General and Safety employees hired on or after January 1, 1990 through December 31, 2012.

Tier 4 (PEPRA): All new members hired on or after January 1, 2013. Employees who transfer from and are eligible for reciprocity with another public employer will not be PEPRA members if their service in the reciprocal system was under a pre-PEPRA tier.

B. Member Contributions

Basic: Contributions are based on the entry age and class of each member and are required of all members. See Appendix F for details on this calculation. Current member rates are shown in the Appendix. (31621.5, 31621.2, 31639.5, 31639.25)

Contributions cease for all non-PEPRA members credited with 30 years of service. (31625, 31625.2)

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Tier 4: PEPRA members must contribute half of the normal cost of the Plan. Contributions for these members will be based on the Normal Cost associated with their benefits; General and Safety members will pay different rates.

Interest is credited to contributions semiannually on June 30 and December 31 at an interest rate set by the Board of Retirement on amounts that have been on deposit for at least six months. (31591, 31700)

Cost-of-Living: The following loads are applied to Tier 1-3 Basic rates to pay for the employee portion of Cost-of-Living Adjustments. For PEPRA members, the cost of COLAs is included in the normal cost, of which they contribute half.

	Tier 1	Tier 2-3
2020 Actual	53.70% (General) 68.45% (Safety)	25.29% (General) 31.01% (Safety)
2021 Actual	53.70% (General) 68.45% (Safety)	25.29% (General) 31.01% (Safety)

C. Employer Contributions:

The employer (County or District) contributes to the retirement fund a percentage of the total compensation provided for all members based on an actuarial investigation, valuation, and recommendation of the actuary. (31453, 31453.5, 31453.6, 31454, 31454.1, 31581)

D. Service Retirement Allowance:

Eligibility:

General Plan members:

Tiers 1-3: Age 50 with 10 years of service;
Any age with 30 years of service; or
Age 70 regardless of service. (31672, 31672.1)

Tier 4 (PEPRA): Age 52 with 5 years of service.

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Safety Plan members:

Tiers 1-3: Age 50 with 10 years of service;
Any age with 20 years of service. (31663.25)

Tier 4 (PEPRA): Age 50 with 5 years of service.

Final Compensation:

Tier 1: Monthly average of a member's highest 12 consecutive months of compensation. (31462.1)

Tiers 2-3: Monthly average of a member's highest 36 consecutive months of compensation. (31462)

Tier 4 (PEPRA): Monthly average of a member's highest 36 consecutive months of compensation, limited to the Social Security Wage Base on January 1, 2013, adjusted based on the annual change in the CPI-U each January 1 thereafter.

Compensation

Limit: The amount of compensation that is taken into account in computing benefits payable to any person who first becomes a member on or after July 1, 1996, shall not exceed the dollar limitations in Section 401(a)(17) of Title 26 of the US Code. (31671)

Integration with

Social Security: General and Safety Tier 1-3 members' benefits are integrated with Social Security. Benefits payable from the first \$161.54 of bi-weekly compensation are reduced by 1/3.

Monthly Allowance:

General Plan members:

Tier 1: Sum of (a) + (b):
(a) $1/60 \times \text{Final Compensation} \times \text{Plan Age Factor} \times \text{Years of Service}$ prior to 7/1/2005 (31676.11); plus
(b) $1/50 \times \text{Final Compensation} \times \text{Plan Age Factor} \times \text{Years of Service}$ after 7/1/2005 (31676.12)

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APPENDIX C – SUMMARY OF PLAN PROVISIONS

Tiers 2-3: Sum of (a) + (b):
 (a) $1/60 \times \text{Final Compensation} \times \text{Plan Age Factor} \times \text{Years of Service}$ prior to 7/1/2005 (31676.1); plus
 (b) $1/50 \times \text{Final Compensation} \times \text{Plan Age Factor} \times \text{Years of Service}$ after 7/1/2005 (31676.12)

Tier 4 (PEPRA): $2\% \times \text{Final Compensation} \times \text{PEPRA Age Factor} \times \text{Years of Service}$

Safety Plan members:

Tiers 1-3: $2\% \times \text{Final Compensation} \times \text{Plan Age Factor} \times \text{Years of Service}$ (31664)

Tier 4 (PEPRA): $2\% \times \text{Final Compensation} \times \text{PEPRA Age Factor} \times \text{Years of Service}$

Code Section: Label: Base: Age	Age Factors By Plan				Safety	
	General					
	31676.11	31676.1	31676.12	PEPRA	31664	PEPRA
	1.67% @ 55	1.67% @ 57.5	2% @ 57	2% @ 62	2% @ 50	2% @ 50
	1.67%	1.67%	2.00%	2.00%	2.00%	2.00%
41					0.6258	
42					0.6625	
43					0.7004	
44					0.7397	
45					0.7805	
46					0.8226	
47					0.8678	
48					0.9085	
49					0.9522	
50	0.7454	0.7091	0.6681		1.0000	1.0000
51	0.7882	0.7457	0.7056		1.0516	1.0500
52	0.8346	0.7816	0.7454	0.5000	1.1078	1.1000
53	0.8850	0.8181	0.7882	0.5500	1.1692	1.1500
54	0.9399	0.8556	0.8346	0.6000	1.2366	1.2000
55	1.0000	0.8954	0.885	0.6500	1.3099	1.2500
56	1.0447	0.9382	0.9399	0.7000	1.3099	1.3000
57	1.1048	0.9846	1.0000	0.7500	1.3099	1.3500
58	1.1686	1.0350	1.0447	0.8000	1.3099	1.3500
59	1.2365	1.0899	1.1048	0.8500	1.3099	1.3500
60	1.3093	1.1500	1.1686	0.9000	1.3099	1.3500
61	1.3608	1.1947	1.2365	0.9500	1.3099	1.3500
62	1.4123	1.2548	1.3093	1.0000	1.3099	1.3500
63	1.4638	1.3186	1.3093	1.0500	1.3099	1.3500
64	1.5153	1.3865	1.3093	1.1000	1.3099	1.3500
65	1.5668	1.4593	1.3093	1.1500	1.3099	1.3500
66	1.5668	1.4593	1.3093	1.2000	1.3099	1.3500
67	1.5668	1.4593	1.3093	1.2500	1.3099	1.3500

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Maximum Allowance:

Allowance may not exceed 100% of Final Compensation.

Unmodified Retirement Allowance (Normal Form):

All Plans: Life Annuity payable to retired member with 60% continuance to an eligible spouse. (31760.1)

Eligible survivor includes certain domestic partners and dependent children. (31780.2) If there is no eligible survivor, any unpaid remainder of the member's accumulated contributions will be paid to the member's designated beneficiary.

Death after Retirement:

All Plans: Upon a member's death after retirement, a special lump sum of \$5,000 is payable to an eligible survivor, or the member's estate. (31789.3)

All Allowances: All allowances are made on a pro-rata basis (based on the number of days in that month) if not in effect for the entire month of retirement. (31600)

Supplemental Retiree Benefit Reserve:

The County has adopted the financial provisions of Article 5.5 of the 1937 Act for Tiers 1-3. The Article requires that in certain cases, a portion of investment earnings be allocated to a Supplemental Retiree Benefit Reserve (SRBR). Earnings allocated to the SRBR are to be used for the benefit of members in Tiers 1-3. Members of Tier 4 are not eligible for supplemental benefits. (31618)

Level 1: Members with at least 20 years of service are eligible for a supplemental benefit up to \$250 a month. The multiplier in effect is as follows:

Period	Multiplier
Prior to July 1, 2013	\$18.00
After July 1, 2013	\$17.00
After July 1, 2014	\$16.00
After July 1, 2015	\$15.00
After July 1, 2016	\$14.00
After July 1, 2017	\$12.50

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Members with less than 20 years of service are eligible for benefits in accordance with the schedule below:

Years of Service	Percentage of Full Benefit
Less than 10	0.00%
10	50.0%
11	55.0%
12	60.0%
13	65.0%
14	70.0%
15	75.0%
16	80.0%
17	85.0%
18	90.0%
19	95.0%

Only years of service with Tulare County are included for this benefit. 50% of member's reduced allowance is payable to an eligible spouse, or minor children if no eligible spouse exists.

Level 2: In addition to the Level 1 benefit, a supplemental COLA is available to retirees and beneficiaries who have lost more than 15% of their purchasing power, measured by their COLA Banks. The design of this COLA is to allow retirees to retain at least 85% of their purchasing power.

Level 3: 60% of a service retirement or 100% of a service-connected disability is payable to a spouse not married to the member at retirement. The spouse must be at least age 55 at the member's date of retirement, must have been married for at least two years, and the member must have elected the Unmodified Allowance retirement option to be eligible for this benefit.

E. Service-Connected Disability Retirement Allowance

Eligibility:

All Plans: Any age and length of service; disability must result from occupational injury or disease, and member must be permanently incapacitated for the performance of duty. (31720, 31720.5, 31720.6, 31720.7, 31720.9)

Monthly Allowance:

All Plans: Greater of (1) 50% of final compensation, and (2) the service retirement allowance, if eligible to retire. (31727.4)

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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Normal Form of Payment:

All Plans: Life Annuity payable to retired member with 100% continuance to an eligible spouse.

Death after Retirement:

All Plans: Upon a member's death after retirement, a special lump sum of \$5,000 is payable to an eligible survivor, or the member's estate. (31789.3)

F. Non-Service-Connected Disability Retirement Allowance

Eligibility:

All Plans: Any age with five (5) years of service and permanently incapacitated for the performance of duty. (31720)

Monthly Allowance:

All Plans: The monthly allowance is equal to a service retirement allowance if the member is eligible to retire and the service retirement allowance exceeds the benefits described below. Otherwise, allowance equals 20% of Final Compensation, plus 2% for each year of service over five, with a maximum allowance of 40% of Final Compensation at 15 years of service. (31727.7)

Normal Form of Payment:

All Plans: Life Annuity with 60% continuance to a surviving spouse (or eligible children). (31760.1)

Death after Retirement:

All Plans: Upon a member's death after retirement, a special lump sum of \$5,000 is payable to an eligible survivor, or the member's estate. (31789.3)

G. Service-Connected Death Benefits

Eligibility:

All Plans: Active members who die in service as a result of injury or disease arising out of and in the course of employment. (31486.7, 31787)

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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Monthly Allowance:

All Plans: A monthly allowance is payable to an eligible survivor equal to the greater of the Member's Service Retirement Allowance or Non-Service-Connected Disability Allowance (if he is eligible for service retirement or non-service disability at his date of death), and (b) 50% x Final Compensation. (31787)

A lump sum is payable to an eligible survivor equal to 1/12 x final 12 months' Salary x years of service (up to max of 6 years). (31781)

H. Non-Service-Connected Death Benefits

Eligibility:

All Plans: Active members who die while in service but not as a result of injury or disease arising out of and in the course of employment.

Monthly Allowance:

All Plans: If an active member is eligible for Non-Service-Connected Disability at his date of death, then a monthly allowance is payable to an eligible survivor equal to 60% x the member's non-service connected disability allowance. Otherwise, the benefit is a refund of contributions. (31781.1)

I. Deferred Vested Benefits

Eligibility:

All other Plans: Member contributions must be left on deposit and the member must have terminated with five (5) years of service or entered a reciprocal agency. Members are eligible for service retirement when they reach service retirement eligibility (based on years of service at termination plus reciprocal service, if any). (31700, 31701, 31702)

Monthly Allowance:

All other Plans: Same as service retirement allowance; payable any time after the member would have been eligible for service retirement. (31703, 31704, 31705)

J. Cost-of-Living Increases

Cost-of-living increases (or decreases) are applied to all retirement allowances (service and disability), optional death allowances, and annual death allowances effective April 1, based on changes in the average annual Consumer Price Index (CPI), rounded to the nearest ½ of 1%. (31870, 31870.1)

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All Plans (excluding Tier 1):

Members (and their beneficiaries) are limited to a maximum 2% cost-of-living increase. (31870)

Tier 1:

Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase. (31870.1)

COLA Bank:

All Plans:

When the CPI exceeds the applicable percentage, the difference between the actual CPI and the maximum cost-of-living increase given in any year is credited to the COLA Accumulation (COLA Bank). It may be used in future years to provide cost-of-living increases when the CPI falls below the applicable percentage. (31874, 31874.1, 31874.2, 31874.3)

K. Optional Forms

In addition to the Unmodified Allowance, retirees may choose one of the following options:

Option 1: A slightly reduced monthly retirement allowance will be paid throughout the member's life, with the provision that accumulated contributions less the sum of the annuity portion of the payments received by the member will be paid upon death to the beneficiary.

Option 2: A reduced monthly retirement allowance will be paid to the member for life, with 100% of the allowance continued after death to the beneficiary.

Option 3: A reduced monthly retirement allowance will be paid to the member for life, with 50% of the allowance continued after death to the beneficiary.

Option 4: This option allows the member to name multiple beneficiaries and provides for a reduced monthly retirement allowance paid to the member for the member's lifetime with an actuarially calculated benefit continued throughout the life of the beneficiaries named at retirement.

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APPENDIX C – SUMMARY OF PLAN PROVISIONS

Assumptions Used for Optional Forms:

Our understanding is that the following assumptions are used to calculate the reduced monthly retirement allowances for Options 1-4 described above.

General

Mortality: RP-2000 Healthy Annuitant Mortality Table with adjustment for white-collar workers (healthy), RP-2000 Disabled Annuitant Mortality Table (disabled)

Gender Blend: 1/3 male, 2/3 female

Discount Rate: 7.25% per annum

Post-Retirement COLA: 3% per annum (Tier 1), 2% per annum (Tiers 2-3)

Safety

Mortality: RP-2000 Healthy Annuitant Mortality Table with adjustment for blue-collar workers (healthy), RP-2000 Disabled Annuitant Mortality Table with 2-year setback (disabled)

Gender Blend: 5/6 male, 1/6 female

Discount Rate: 7.25% per annum

Post-Retirement COLA: 3% per annum (Tier 1), 2% per annum (Tiers 2-3)

APPENDIX D – GLOSSARY

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs such as mortality, withdrawal, disability, retirement, changes in compensation, and rates of investment return.

2. Actuarial Cost Method

A procedure for determining the actuarial present value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a normal cost and an Actuarial Liability.

3. Actuarial Gain (Loss)

The difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

4. Actuarial Liability

The portion of the actuarial present value of projected benefits which will not be paid by future normal costs. It represents the value of the past normal costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The actuarial present value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made.

6. Actuarial Valuation

The determination, as of a specified date, of the normal cost, Actuarial Liability, Actuarial Value of Assets, and related actuarial present values for a pension plan.

7. Actuarial Value of Assets

The value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values.

8. Actuarially Equivalent

Of equal actuarial present value, determined as of a given date, with each value based on the same set of actuarial assumptions.

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APPENDIX D – GLOSSARY

9. Amortization Payment

The portion of the pension plan contribution which is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

10. Entry Age Normal Actuarial Cost Method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

11. Funded Ratio

The ratio of the Actuarial Value of Assets to the Actuarial Liability.

12. Normal Cost

That portion of the actuarial present value of pension plan benefits and expenses which is allocated to a valuation year by the actuarial cost method.

13. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of actuarial assumptions, taking into account such items as increases in future compensation and service credits.

14. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.

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APPENDIX E – MEMBER CONTRIBUTION RATES

Assumptions used to develop member contribution rates match valuation assumptions detailed in Appendix B, other than mortality which is static for member contribution rates. Additionally, only service retirement benefits are included in Tiers 1-3 member basic rate development.

The table below shows the applicable Code Section for Tier 1-3 member contribution rates as well as the corresponding annuity funded by the member.

Plan/Tier	Code Section	Member Contribution Provides Average Annuity	FAS Period
General Tier 1	31621.5	1/200 of Final Average Salary (FAS) at age 60	1 year
General Tier 2	31621.2	1/100 of Final Average Salary (FAS) at age 60	3 years
General Tier 3	31621.2	1/100 of Final Average Salary (FAS) at age 60	3 years
Safety Tier 1	31639.5	1/200 of Final Average Salary (FAS) at age 50	1 year
Safety Tier 2	31639.25	1/100 of Final Average Salary (FAS) at age 50	3 years
Safety Tier 3	31639.25	1/100 of Final Average Salary (FAS) at age 50	3 years

For Tiers 1-3, the following COLA loads were applied to the Basic rates. Starting in 2015, based on discussion with TCERA staff, we developed separate loads for General and Safety.

	Tier 1	Tier 2-3
2020 Actual	53.70% (General) 68.45% (Safety)	25.29% (General) 31.01% (Safety)
2021 Actual	53.70% (General) 68.45% (Safety)	25.29% (General) 31.01% (Safety)

For PEPRA members, the cost of COLAs is included in the normal cost, of which they contribute half.

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APPENDIX E – MEMBER CONTRIBUTION RATES

2021 Member Contribution Rates (for fiscal year ending 2023)

Entry Age	General Tier 1		General Tiers 2 and 3		Safety Tier 1		Safety Tiers 2 and 3		Tier 4 Members	
	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	General	Safety
16	2.75%	4.13%	4.34%	6.51%	4.65%	6.97%	6.95%	10.43%	4.42%	9.61%
17	2.81%	4.22%	4.43%	6.64%	4.65%	6.97%	6.95%	10.43%	4.42%	9.61%
18	2.87%	4.31%	4.52%	6.78%	4.65%	6.97%	6.95%	10.43%	4.42%	9.61%
19	2.93%	4.40%	4.62%	6.93%	4.65%	6.97%	6.95%	10.43%	4.42%	9.61%
20	2.99%	4.49%	4.71%	7.07%	4.65%	6.97%	6.95%	10.43%	4.42%	9.61%
21	3.05%	4.58%	4.81%	7.22%	4.73%	7.09%	7.07%	10.60%	4.67%	9.99%
22	3.12%	4.68%	4.91%	7.37%	4.81%	7.21%	7.19%	10.78%	4.92%	10.38%
23	3.18%	4.77%	5.01%	7.52%	4.89%	7.33%	7.31%	10.96%	5.17%	10.76%
24	3.25%	4.87%	5.12%	7.68%	4.97%	7.45%	7.43%	11.14%	5.43%	11.15%
25	3.31%	4.97%	5.23%	7.84%	5.05%	7.57%	7.55%	11.33%	5.69%	11.54%
26	3.39%	5.08%	5.33%	8.00%	5.13%	7.70%	7.68%	11.52%	5.91%	11.91%
27	3.45%	5.18%	5.44%	8.16%	5.22%	7.83%	7.81%	11.72%	6.13%	12.28%
28	3.53%	5.29%	5.55%	8.33%	5.31%	7.96%	7.94%	11.91%	6.35%	12.64%
29	3.60%	5.40%	5.67%	8.50%	5.40%	8.10%	8.07%	12.11%	6.58%	12.99%
30	3.67%	5.51%	5.79%	8.68%	5.49%	8.24%	8.21%	12.32%	6.80%	13.34%
31	3.75%	5.62%	5.91%	8.86%	5.59%	8.38%	8.35%	12.53%	7.01%	13.72%
32	3.83%	5.74%	6.03%	9.04%	5.68%	8.52%	8.50%	12.75%	7.22%	14.10%
33	3.91%	5.86%	6.15%	9.23%	5.78%	8.67%	8.65%	12.97%	7.44%	14.47%
34	3.99%	5.98%	6.28%	9.42%	5.88%	8.82%	8.79%	13.19%	7.66%	14.85%
35	4.07%	6.10%	6.41%	9.61%	5.99%	8.98%	8.95%	13.43%	7.89%	15.24%
36	4.15%	6.23%	6.54%	9.81%	6.09%	9.14%	9.11%	13.67%	8.12%	15.59%
37	4.24%	6.36%	6.68%	10.02%	6.21%	9.31%	9.29%	13.93%	8.36%	15.94%
38	4.33%	6.49%	6.81%	10.22%	6.33%	9.49%	9.46%	14.19%	8.62%	16.30%
39	4.42%	6.63%	6.96%	10.44%	6.45%	9.67%	9.65%	14.47%	8.88%	16.67%
40	4.51%	6.77%	7.11%	10.66%	6.58%	9.87%	9.81%	14.72%	9.14%	17.07%
41	4.61%	6.91%	7.26%	10.89%	6.73%	10.09%	9.97%	14.95%	9.40%	17.46%
42	4.71%	7.06%	7.41%	11.12%	6.82%	10.23%	10.11%	15.16%	9.66%	17.86%
43	4.81%	7.22%	7.57%	11.35%	6.92%	10.38%	10.22%	15.33%	9.99%	18.33%
44	4.92%	7.38%	7.71%	11.57%	7.04%	10.56%	10.33%	15.49%	10.33%	18.81%
45	5.01%	7.51%	7.85%	11.77%	7.11%	10.66%	10.37%	15.56%	10.67%	19.28%
46	5.09%	7.64%	7.99%	11.99%	7.20%	10.80%	10.35%	15.52%	11.09%	19.68%
47	5.19%	7.79%	8.14%	12.21%	7.19%	10.79%	10.19%	15.28%	11.51%	20.09%
48	5.29%	7.93%	8.29%	12.44%	7.15%	10.73%	10.52%	15.78%	11.85%	20.50%
49	5.39%	8.09%	8.45%	12.68%	6.99%	10.48%	10.87%	16.31%	12.19%	20.93%
50	5.51%	8.26%	8.62%	12.93%	6.99%	10.48%	10.87%	16.31%	12.52%	20.93%
51	5.63%	8.44%	8.77%	13.16%	6.99%	10.48%	10.87%	16.31%	12.86%	20.93%
52	5.73%	8.59%	8.91%	13.37%	6.99%	10.48%	10.87%	16.31%	13.18%	20.93%
53	5.83%	8.75%	9.03%	13.55%	6.99%	10.48%	10.87%	16.31%	13.50%	20.93%
54	5.94%	8.91%	9.11%	13.66%	6.99%	10.48%	10.87%	16.31%	13.79%	20.93%
55	6.01%	9.01%	9.12%	13.68%	6.99%	10.48%	10.87%	16.31%	14.03%	20.93%
56	6.05%	9.07%	9.06%	13.59%	6.99%	10.48%	10.87%	16.31%	14.29%	20.93%
57	6.02%	9.03%	8.93%	13.40%	6.99%	10.48%	10.87%	16.31%	14.49%	20.93%
58	5.96%	8.94%	9.23%	13.84%	6.99%	10.48%	10.87%	16.31%	14.65%	20.93%
59	5.85%	8.77%	9.53%	14.30%	6.99%	10.48%	10.87%	16.31%	14.71%	20.93%
Assumptions:	Interest: 7.00%		7.00%		7.00%		7.00%		7.00%	
	Salary: 3.00%		3.00%		3.00%		3.00%		3.00%	
	COLA: 2.60%		2.00%		2.60%		2.00%		2.00%	
Mortality:	For General: Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2019, in 8.0% for females to reflect Plan experience, and blended 30% male and 70% female For Safety: Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Pro increased by 4.5% for males to reflect Plan experience, and blended 75% male and 25% female									



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APPENDIX E – MEMBER CONTRIBUTION RATES

The tables on the next six pages show the 2021 member contribution rates split into the Basic and COLA components, by tier.

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APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	General Tier I					
	Basic Rate		COLA Rate		Total Rate	
	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54
16	1.79%	2.69%	0.96%	1.44%	2.75%	4.13%
17	1.83%	2.75%	0.98%	1.47%	2.81%	4.22%
18	1.87%	2.80%	1.00%	1.51%	2.87%	4.31%
19	1.91%	2.86%	1.02%	1.54%	2.93%	4.40%
20	1.95%	2.92%	1.05%	1.57%	2.99%	4.49%
21	1.99%	2.98%	1.07%	1.60%	3.05%	4.58%
22	2.03%	3.04%	1.09%	1.64%	3.12%	4.68%
23	2.07%	3.10%	1.11%	1.67%	3.18%	4.77%
24	2.11%	3.17%	1.13%	1.70%	3.25%	4.87%
25	2.16%	3.23%	1.16%	1.74%	3.31%	4.97%
26	2.20%	3.31%	1.18%	1.77%	3.39%	5.08%
27	2.25%	3.37%	1.21%	1.81%	3.45%	5.18%
28	2.29%	3.44%	1.23%	1.85%	3.53%	5.29%
29	2.34%	3.51%	1.26%	1.89%	3.60%	5.40%
30	2.39%	3.58%	1.28%	1.93%	3.67%	5.51%
31	2.44%	3.66%	1.31%	1.96%	3.75%	5.62%
32	2.49%	3.73%	1.34%	2.01%	3.83%	5.74%
33	2.54%	3.81%	1.36%	2.05%	3.91%	5.86%
34	2.59%	3.89%	1.39%	2.09%	3.99%	5.98%
35	2.65%	3.97%	1.42%	2.13%	4.07%	6.10%
36	2.70%	4.05%	1.45%	2.18%	4.15%	6.23%
37	2.76%	4.14%	1.48%	2.22%	4.24%	6.36%
38	2.82%	4.22%	1.51%	2.27%	4.33%	6.49%
39	2.88%	4.31%	1.54%	2.32%	4.42%	6.63%
40	2.94%	4.40%	1.58%	2.37%	4.51%	6.77%
41	3.00%	4.50%	1.61%	2.41%	4.61%	6.91%
42	3.06%	4.59%	1.64%	2.47%	4.71%	7.06%
43	3.13%	4.70%	1.68%	2.52%	4.81%	7.22%
44	3.20%	4.80%	1.72%	2.58%	4.92%	7.38%
45	3.26%	4.89%	1.75%	2.62%	5.01%	7.51%
46	3.31%	4.97%	1.78%	2.67%	5.09%	7.64%
47	3.38%	5.07%	1.81%	2.72%	5.19%	7.79%
48	3.44%	5.16%	1.85%	2.77%	5.29%	7.93%
49	3.51%	5.26%	1.88%	2.83%	5.39%	8.09%
50	3.58%	5.37%	1.92%	2.89%	5.51%	8.26%
51	3.66%	5.49%	1.97%	2.95%	5.63%	8.44%
52	3.73%	5.59%	2.00%	3.00%	5.73%	8.59%
53	3.80%	5.69%	2.04%	3.06%	5.83%	8.75%
54	3.86%	5.80%	2.08%	3.11%	5.94%	8.91%
55	3.91%	5.86%	2.10%	3.15%	6.01%	9.01%
56	3.93%	5.90%	2.11%	3.17%	6.05%	9.07%
57	3.92%	5.88%	2.10%	3.15%	6.02%	9.03%
58	3.88%	5.82%	2.08%	3.12%	5.96%	8.94%
59	3.80%	5.71%	2.04%	3.06%	5.85%	8.77%
Assumptions:						
Interest:	7.00%					
Salary:	3.00%					
COLA:	2.60%					
Mortality:	Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2019, increased by 2.2% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female					

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	General Tiers 2 and 3					
	Basic Rate		COLA Rate		Total Rate	
	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54
16	3.46%	5.20%	0.88%	1.31%	4.34%	6.51%
17	3.53%	5.30%	0.89%	1.34%	4.43%	6.64%
18	3.61%	5.41%	0.91%	1.37%	4.52%	6.78%
19	3.69%	5.53%	0.93%	1.40%	4.62%	6.93%
20	3.76%	5.64%	0.95%	1.43%	4.71%	7.07%
21	3.84%	5.76%	0.97%	1.46%	4.81%	7.22%
22	3.92%	5.88%	0.99%	1.49%	4.91%	7.37%
23	4.00%	6.00%	1.01%	1.52%	5.01%	7.52%
24	4.09%	6.13%	1.03%	1.55%	5.12%	7.68%
25	4.17%	6.26%	1.05%	1.58%	5.23%	7.84%
26	4.26%	6.39%	1.08%	1.61%	5.33%	8.00%
27	4.34%	6.51%	1.10%	1.65%	5.44%	8.16%
28	4.43%	6.65%	1.12%	1.68%	5.55%	8.33%
29	4.52%	6.78%	1.14%	1.72%	5.67%	8.50%
30	4.62%	6.93%	1.17%	1.75%	5.79%	8.68%
31	4.71%	7.07%	1.19%	1.79%	5.91%	8.86%
32	4.81%	7.22%	1.22%	1.82%	6.03%	9.04%
33	4.91%	7.37%	1.24%	1.86%	6.15%	9.23%
34	5.01%	7.52%	1.27%	1.90%	6.28%	9.42%
35	5.11%	7.67%	1.29%	1.94%	6.41%	9.61%
36	5.22%	7.83%	1.32%	1.98%	6.54%	9.81%
37	5.33%	8.00%	1.35%	2.02%	6.68%	10.02%
38	5.44%	8.16%	1.38%	2.06%	6.81%	10.22%
39	5.56%	8.33%	1.40%	2.11%	6.96%	10.44%
40	5.67%	8.51%	1.43%	2.15%	7.11%	10.66%
41	5.79%	8.69%	1.47%	2.20%	7.26%	10.89%
42	5.92%	8.88%	1.50%	2.24%	7.41%	11.12%
43	6.04%	9.06%	1.53%	2.29%	7.57%	11.35%
44	6.16%	9.23%	1.56%	2.34%	7.71%	11.57%
45	6.26%	9.39%	1.58%	2.38%	7.85%	11.77%
46	6.38%	9.57%	1.61%	2.42%	7.99%	11.99%
47	6.50%	9.75%	1.64%	2.46%	8.14%	12.21%
48	6.62%	9.93%	1.67%	2.51%	8.29%	12.44%
49	6.75%	10.12%	1.71%	2.56%	8.45%	12.68%
50	6.88%	10.32%	1.74%	2.61%	8.62%	12.93%
51	7.00%	10.50%	1.77%	2.66%	8.77%	13.16%
52	7.11%	10.67%	1.80%	2.70%	8.91%	13.37%
53	7.21%	10.82%	1.82%	2.73%	9.03%	13.55%
54	7.27%	10.90%	1.84%	2.76%	9.11%	13.66%
55	7.28%	10.92%	1.84%	2.76%	9.12%	13.68%
56	7.23%	10.85%	1.83%	2.74%	9.06%	13.59%
57	7.13%	10.70%	1.80%	2.70%	8.93%	13.40%
58	7.36%	11.05%	1.86%	2.79%	9.23%	13.84%
59	7.61%	11.41%	1.92%	2.89%	9.53%	14.30%
Assumptions:						
Interest:	7.00%					
Salary:	3.00%					
COLA:	2.00%					
Mortality:	Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2019, increased by 2.2% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female					

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX E – MEMBER CONTRIBUTION RATES

General Tier 4			
Entry Age	Basic Rate	COLA Rate	Total Rate
16	3.62%	0.80%	4.42%
17	3.62%	0.80%	4.42%
18	3.62%	0.80%	4.42%
19	3.62%	0.80%	4.42%
20	3.62%	0.80%	4.42%
21	3.81%	0.86%	4.67%
22	4.01%	0.91%	4.92%
23	4.22%	0.95%	5.17%
24	4.43%	1.00%	5.43%
25	4.65%	1.04%	5.69%
26	4.83%	1.08%	5.91%
27	5.01%	1.12%	6.13%
28	5.20%	1.15%	6.35%
29	5.39%	1.19%	6.58%
30	5.57%	1.23%	6.80%
31	5.75%	1.26%	7.01%
32	5.93%	1.29%	7.22%
33	6.11%	1.33%	7.44%
34	6.30%	1.36%	7.66%
35	6.49%	1.40%	7.89%
36	6.69%	1.43%	8.12%
37	6.89%	1.47%	8.36%
38	7.11%	1.51%	8.62%
39	7.32%	1.56%	8.88%
40	7.54%	1.60%	9.14%
41	7.77%	1.63%	9.40%
42	7.99%	1.67%	9.66%
43	8.27%	1.72%	9.99%
44	8.55%	1.78%	10.33%
45	8.83%	1.84%	10.67%
46	9.18%	1.91%	11.09%
47	9.52%	1.99%	11.51%
48	9.82%	2.03%	11.85%
49	10.11%	2.08%	12.19%
50	10.40%	2.12%	12.52%
51	10.70%	2.16%	12.86%
52	10.99%	2.19%	13.18%
53	11.28%	2.22%	13.50%
54	11.54%	2.25%	13.79%
55	11.76%	2.27%	14.03%
56	12.01%	2.28%	14.29%
57	12.21%	2.28%	14.49%
58	12.37%	2.28%	14.65%
59	12.46%	2.25%	14.71%
Assumptions:			
Interest:	7.00%		
Salary:	3.00%		
COLA:	2.00%		
Mortality:	Retired Pensioner (RP) 2014 Combined Healthy Table, with 22-year Generational improvement using Projection Scale MP-2019, increased by 2.2% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female		

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	Safety Tier 1					
	Basic Rate		COLA Rate		Total Rate	
	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54
16	2.76%	4.14%	1.89%	2.83%	4.65%	6.97%
17	2.76%	4.14%	1.89%	2.83%	4.65%	6.97%
18	2.76%	4.14%	1.89%	2.83%	4.65%	6.97%
19	2.76%	4.14%	1.89%	2.83%	4.65%	6.97%
20	2.76%	4.14%	1.89%	2.83%	4.65%	6.97%
21	2.81%	4.21%	1.92%	2.88%	4.73%	7.09%
22	2.85%	4.28%	1.95%	2.93%	4.81%	7.21%
23	2.90%	4.35%	1.99%	2.98%	4.89%	7.33%
24	2.95%	4.42%	2.02%	3.03%	4.97%	7.45%
25	3.00%	4.49%	2.05%	3.08%	5.05%	7.57%
26	3.05%	4.57%	2.09%	3.13%	5.13%	7.70%
27	3.10%	4.65%	2.12%	3.18%	5.22%	7.83%
28	3.15%	4.73%	2.16%	3.23%	5.31%	7.96%
29	3.21%	4.81%	2.19%	3.29%	5.40%	8.10%
30	3.26%	4.89%	2.23%	3.35%	5.49%	8.24%
31	3.32%	4.97%	2.27%	3.41%	5.59%	8.38%
32	3.37%	5.06%	2.31%	3.46%	5.68%	8.52%
33	3.43%	5.15%	2.35%	3.52%	5.78%	8.67%
34	3.49%	5.24%	2.39%	3.58%	5.88%	8.82%
35	3.55%	5.33%	2.43%	3.65%	5.99%	8.98%
36	3.62%	5.43%	2.48%	3.71%	6.09%	9.14%
37	3.68%	5.53%	2.52%	3.78%	6.21%	9.31%
38	3.76%	5.63%	2.57%	3.86%	6.33%	9.49%
39	3.83%	5.74%	2.62%	3.93%	6.45%	9.67%
40	3.91%	5.86%	2.67%	4.01%	6.58%	9.87%
41	3.99%	5.99%	2.73%	4.10%	6.73%	10.09%
42	4.05%	6.07%	2.77%	4.16%	6.82%	10.23%
43	4.11%	6.16%	2.81%	4.22%	6.92%	10.38%
44	4.18%	6.27%	2.86%	4.29%	7.04%	10.56%
45	4.22%	6.33%	2.89%	4.33%	7.11%	10.66%
46	4.27%	6.41%	2.93%	4.39%	7.20%	10.80%
47	4.27%	6.41%	2.92%	4.38%	7.19%	10.79%
48	4.25%	6.37%	2.91%	4.36%	7.15%	10.73%
49	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
50	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
51	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
52	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
53	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
54	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
55	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
56	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
57	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
58	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
59	4.15%	6.22%	2.84%	4.26%	6.99%	10.48%
Assumptions:						
Interest:	7.00%					
Salary:	3.00%					
COLA:	2.60%					
Mortality:	Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2019, increased by 4.5% for males to reflect Plan experience, and blended 75% male and 25% female					

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	Safety Tiers 2 and 3					
	Basic Rate		COLA Rate		Total Rate	
	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54
16	5.31%	7.96%	1.65%	2.47%	6.95%	10.43%
17	5.31%	7.96%	1.65%	2.47%	6.95%	10.43%
18	5.31%	7.96%	1.65%	2.47%	6.95%	10.43%
19	5.31%	7.96%	1.65%	2.47%	6.95%	10.43%
20	5.31%	7.96%	1.65%	2.47%	6.95%	10.43%
21	5.39%	8.09%	1.67%	2.51%	7.07%	10.60%
22	5.49%	8.23%	1.70%	2.55%	7.19%	10.78%
23	5.58%	8.37%	1.73%	2.59%	7.31%	10.96%
24	5.67%	8.50%	1.76%	2.64%	7.43%	11.14%
25	5.77%	8.65%	1.79%	2.68%	7.55%	11.33%
26	5.86%	8.79%	1.82%	2.73%	7.68%	11.52%
27	5.96%	8.95%	1.85%	2.77%	7.81%	11.72%
28	6.06%	9.09%	1.88%	2.82%	7.94%	11.91%
29	6.16%	9.24%	1.91%	2.87%	8.07%	12.11%
30	6.27%	9.40%	1.94%	2.92%	8.21%	12.32%
31	6.38%	9.56%	1.98%	2.97%	8.35%	12.53%
32	6.49%	9.73%	2.01%	3.02%	8.50%	12.75%
33	6.60%	9.90%	2.05%	3.07%	8.65%	12.97%
34	6.71%	10.07%	2.08%	3.12%	8.79%	13.19%
35	6.83%	10.25%	2.12%	3.18%	8.95%	13.43%
36	6.96%	10.43%	2.16%	3.24%	9.11%	13.67%
37	7.09%	10.63%	2.20%	3.30%	9.29%	13.93%
38	7.22%	10.83%	2.24%	3.36%	9.46%	14.19%
39	7.36%	11.05%	2.28%	3.42%	9.65%	14.47%
40	7.49%	11.24%	2.32%	3.48%	9.81%	14.72%
41	7.61%	11.41%	2.36%	3.54%	9.97%	14.95%
42	7.71%	11.57%	2.39%	3.59%	10.11%	15.16%
43	7.80%	11.70%	2.42%	3.63%	10.22%	15.33%
44	7.88%	11.82%	2.44%	3.67%	10.33%	15.49%
45	7.92%	11.88%	2.46%	3.68%	10.37%	15.56%
46	7.90%	11.85%	2.45%	3.67%	10.35%	15.52%
47	7.78%	11.66%	2.41%	3.62%	10.19%	15.28%
48	8.03%	12.05%	2.49%	3.73%	10.52%	15.78%
49	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
50	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
51	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
52	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
53	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
54	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
55	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
56	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
57	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
58	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
59	8.30%	12.45%	2.57%	3.86%	10.87%	16.31%
Assumptions:						
Interest:	7.00%					
Salary:	3.00%					
COLA:	2.00%					
Mortality:	Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2019, increased by 4.5% for males to reflect Plan experience, and blended 75% male and 25% female					

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX E – MEMBER CONTRIBUTION RATES

Safety Tier 4			
Entry Age	Basic Rate	COLA Rate	Total Rate
16	7.71%	1.90%	9.61%
17	7.71%	1.90%	9.61%
18	7.71%	1.90%	9.61%
19	7.71%	1.90%	9.61%
20	7.71%	1.90%	9.61%
21	8.01%	1.98%	9.99%
22	8.32%	2.06%	10.38%
23	8.63%	2.13%	10.76%
24	8.94%	2.21%	11.15%
25	9.26%	2.28%	11.54%
26	9.56%	2.35%	11.91%
27	9.86%	2.42%	12.28%
28	10.16%	2.48%	12.64%
29	10.45%	2.54%	12.99%
30	10.74%	2.60%	13.34%
31	11.05%	2.67%	13.72%
32	11.35%	2.75%	14.10%
33	11.65%	2.82%	14.47%
34	11.96%	2.89%	14.85%
35	12.27%	2.97%	15.24%
36	12.57%	3.02%	15.59%
37	12.86%	3.08%	15.94%
38	13.15%	3.15%	16.30%
39	13.46%	3.21%	16.67%
40	13.79%	3.28%	17.07%
41	14.11%	3.35%	17.46%
42	14.45%	3.41%	17.86%
43	14.84%	3.49%	18.33%
44	15.23%	3.58%	18.81%
45	15.63%	3.65%	19.28%
46	15.98%	3.70%	19.68%
47	16.34%	3.75%	20.09%
48	16.72%	3.78%	20.50%
49	17.10%	3.83%	20.93%
50	17.10%	3.83%	20.93%
51	17.10%	3.83%	20.93%
52	17.10%	3.83%	20.93%
53	17.10%	3.83%	20.93%
54	17.10%	3.83%	20.93%
55	17.10%	3.83%	20.93%
56	17.10%	3.83%	20.93%
57	17.10%	3.83%	20.93%
58	17.10%	3.83%	20.93%
59	17.10%	3.83%	20.93%
Assumptions:			
Interest:	7.00%		
Salary:	3.00%		
COLA:	2.00%		
Mortality:	Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 22-year Generational improvement using Projection Scale MP-2019, increased by 4.5% for males to reflect Plan experience, and blended 75% male and 25% female		

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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APPENDIX E – MEMBER CONTRIBUTION RATES

2020 Member Contribution Rates (for fiscal year ending 2022)

Entry Age	General Tier 1		General Tiers 2 and 3		Safety Tier 1		Safety Tiers 2 and 3		Tier 4 Members	
	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	First \$161.54	Over \$161.54	General	Safety
16	2.75%	4.13%	4.34%	6.51%	4.65%	6.97%	6.95%	10.43%	4.43%	9.60%
17	2.81%	4.22%	4.43%	6.64%	4.65%	6.97%	6.95%	10.43%	4.43%	9.60%
18	2.87%	4.31%	4.52%	6.78%	4.65%	6.97%	6.95%	10.43%	4.43%	9.60%
19	2.93%	4.40%	4.62%	6.93%	4.65%	6.97%	6.95%	10.43%	4.43%	9.60%
20	2.99%	4.49%	4.71%	7.07%	4.65%	6.97%	6.95%	10.43%	4.43%	9.60%
21	3.05%	4.58%	4.81%	7.22%	4.73%	7.09%	7.07%	10.60%	4.67%	9.98%
22	3.12%	4.68%	4.91%	7.37%	4.81%	7.21%	7.19%	10.78%	4.92%	10.36%
23	3.18%	4.77%	5.01%	7.52%	4.89%	7.33%	7.31%	10.96%	5.18%	10.75%
24	3.25%	4.87%	5.12%	7.68%	4.97%	7.45%	7.43%	11.14%	5.43%	11.14%
25	3.31%	4.97%	5.23%	7.84%	5.05%	7.57%	7.55%	11.33%	5.69%	11.53%
26	3.39%	5.08%	5.33%	8.00%	5.13%	7.70%	7.68%	11.52%	5.91%	11.90%
27	3.45%	5.18%	5.44%	8.16%	5.22%	7.83%	7.81%	11.72%	6.14%	12.26%
28	3.53%	5.29%	5.55%	8.33%	5.31%	7.96%	7.94%	11.91%	6.36%	12.63%
29	3.60%	5.40%	5.67%	8.50%	5.40%	8.10%	8.07%	12.11%	6.58%	12.98%
30	3.67%	5.51%	5.79%	8.68%	5.49%	8.24%	8.21%	12.32%	6.81%	13.33%
31	3.75%	5.62%	5.91%	8.86%	5.59%	8.38%	8.35%	12.53%	7.02%	13.71%
32	3.83%	5.74%	6.03%	9.04%	5.68%	8.52%	8.50%	12.75%	7.23%	14.09%
33	3.91%	5.86%	6.15%	9.23%	5.78%	8.67%	8.65%	12.97%	7.45%	14.46%
34	3.99%	5.98%	6.28%	9.42%	5.88%	8.82%	8.79%	13.19%	7.67%	14.83%
35	4.07%	6.10%	6.41%	9.61%	5.99%	8.98%	8.95%	13.43%	7.89%	15.22%
36	4.15%	6.23%	6.54%	9.81%	6.09%	9.14%	9.11%	13.67%	8.13%	15.58%
37	4.24%	6.36%	6.68%	10.02%	6.21%	9.31%	9.29%	13.93%	8.37%	15.93%
38	4.33%	6.49%	6.81%	10.22%	6.33%	9.49%	9.46%	14.19%	8.63%	16.28%
39	4.42%	6.63%	6.96%	10.44%	6.45%	9.67%	9.65%	14.47%	8.89%	16.66%
40	4.51%	6.77%	7.11%	10.66%	6.58%	9.87%	9.81%	14.72%	9.14%	17.06%
41	4.61%	6.91%	7.26%	10.89%	6.73%	10.09%	9.97%	14.95%	9.41%	17.44%
42	4.71%	7.06%	7.41%	11.12%	6.82%	10.23%	10.11%	15.16%	9.67%	17.85%
43	4.81%	7.22%	7.57%	11.35%	6.92%	10.38%	10.22%	15.33%	10.00%	18.31%
44	4.92%	7.38%	7.71%	11.57%	7.04%	10.56%	10.33%	15.49%	10.34%	18.79%
45	5.01%	7.51%	7.85%	11.77%	7.11%	10.66%	10.37%	15.56%	10.68%	19.26%
46	5.09%	7.64%	7.99%	11.99%	7.20%	10.80%	10.35%	15.52%	11.10%	19.66%
47	5.19%	7.79%	8.14%	12.21%	7.19%	10.79%	10.19%	15.28%	11.52%	20.07%
48	5.29%	7.93%	8.29%	12.44%	7.15%	10.73%	10.52%	15.78%	11.86%	20.48%
49	5.39%	8.09%	8.45%	12.68%	6.99%	10.48%	10.87%	16.31%	12.20%	20.91%
50	5.51%	8.26%	8.62%	12.93%	6.99%	10.48%	10.87%	16.31%	12.53%	20.91%
51	5.63%	8.44%	8.77%	13.16%	6.99%	10.48%	10.87%	16.31%	12.87%	20.91%
52	5.73%	8.59%	8.91%	13.37%	6.99%	10.48%	10.87%	16.31%	13.20%	20.91%
53	5.83%	8.75%	9.03%	13.55%	6.99%	10.48%	10.87%	16.31%	13.52%	20.91%
54	5.94%	8.91%	9.11%	13.66%	6.99%	10.48%	10.87%	16.31%	13.81%	20.91%
55	6.01%	9.01%	9.12%	13.68%	6.99%	10.48%	10.87%	16.31%	14.05%	20.91%
56	6.05%	9.07%	9.06%	13.59%	6.99%	10.48%	10.87%	16.31%	14.30%	20.91%
57	6.02%	9.03%	8.93%	13.40%	6.99%	10.48%	10.87%	16.31%	14.50%	20.91%
58	5.96%	8.94%	9.23%	13.84%	6.99%	10.48%	10.87%	16.31%	14.66%	20.91%
59	5.85%	8.77%	9.53%	14.30%	6.99%	10.48%	10.87%	16.31%	14.73%	20.91%
Assumptions:										
Interest:	7.00%		7.00%		7.00%		7.00%		7.00%	
Salary:	3.00%		3.00%		3.00%		3.00%		3.00%	
COLA:	2.60%		2.00%		2.60%		2.00%		2.00%	
Mortality:	For General: Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2019, increased by 2.2% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female For Safety: Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2019, increased by 4.5% for males to reflect Plan experience, and blended 75% male and 25% female									

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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APPENDIX F – SUPPLEMENTAL TABLES FOR REPORTING PURPOSES

The tables on this page and the next three pages show selected demographic assumption rates based on age or service as reflected in the June 30, 2021 actuarial valuation.

General - Male

Age	Demographic Assumption Rates - Age				
	Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**	
		Ordinary	Service		
25	0.000	0.000590	0.000000	0.0800	
30	0.000	0.000603	0.000000	0.0800	
35	0.000	0.000724	0.000000	0.0800	
40	0.000	0.000809	0.000000	0.0800	
45	0.000	0.001079	0.000000	0.0800	
50	0.050	0.001689	0.000000	0.0500	
55	0.060	0.002788	0.000000	0.0500	
60	0.150	0.004891	0.000000	0.0500	
65	0.350	0.008654	0.000000	0.0000	
70	0.350	0.013827	0.000000	0.0000	

*The Service Retirement Rates above assume less than 30 years of service.

**The Withdrawal Rates above assume at least 3 but less than 5 years of service.

General - Female

Age	Demographic Assumption Rates - Age				
	Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**	
		Ordinary	Service		
25	0.000	0.000223	0.000000	0.0800	
30	0.000	0.000297	0.000000	0.0800	
35	0.000	0.000392	0.000000	0.0800	
40	0.000	0.000498	0.000000	0.0800	
45	0.000	0.000731	0.000000	0.0800	
50	0.050	0.001158	0.000000	0.0500	
55	0.060	0.001834	0.000000	0.0500	
60	0.150	0.002783	0.000000	0.0500	
65	0.350	0.004016	0.000000	0.0000	
70	0.350	0.006471	0.000000	0.0000	

*The Service Retirement Rates above assume less than 30 years of service.

**The Withdrawal Rates above assume at least 3 but less than 5 years of service.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2021**

APPENDIX F – SUPPLEMENTAL TABLES FOR REPORTING PURPOSES

Safety - Male

Age	Demographic Assumption Rates - Age				
	Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**	
		Ordinary	Service		
25	0.000	0.000453	0.000328	0.0700	
30	0.000	0.000463	0.000336	0.0700	
35	0.000	0.000479	0.000479	0.0700	
40	0.000	0.000536	0.000536	0.0700	
45	0.070	0.000685	0.000743	0.0600	
50	0.070	0.000939	0.001296	0.0600	
55	0.100	0.001476	0.002213	0.0600	
60	0.200	0.002395	0.004078	0.0000	
65	0.400	0.004237	0.007214	0.0000	
70	1.000	0.006525	0.011110	0.0000	

*The Service Retirement Rates above assume less than 20 years of service.

**The Withdrawal Rates above assume at least 3 but less than 5 years of service.

Safety - Female

Age	Demographic Assumption Rates - Age				
	Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**	
		Ordinary	Service		
25	0.000	0.000134	0.000097	0.0700	
30	0.000	0.000179	0.000129	0.0700	
35	0.000	0.000204	0.000204	0.0700	
40	0.000	0.000259	0.000259	0.0700	
45	0.070	0.000364	0.000395	0.0600	
50	0.070	0.000505	0.000698	0.0600	
55	0.100	0.000762	0.001143	0.0600	
60	0.200	0.001069	0.001821	0.0000	
65	0.400	0.001543	0.002627	0.0000	
70	1.000	0.002451	0.004174	0.0000	

*The Service Retirement Rates above assume less than 20 years of service.

**The Withdrawal Rates above assume at least 3 but less than 5 years of service.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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APPENDIX F – SUPPLEMENTAL TABLES FOR REPORTING PURPOSES

General - Male

Demographic Assumption Rates - Years of Service		
Service	Service Retirement Rate*	Withdrawal (Termination) Rate**
5	0.150	0.050
10	0.150	0.030
15	0.150	0.030
20	0.150	0.030
25	0.150	0.030
30	0.200	0.030
35	0.200	0.030
40	0.200	0.030
45	0.200	0.030
50	0.200	0.030

**The Service Retirement Rates above apply to a member at age 60.*

***The Withdrawal Rates above apply to a member at age 40.*

General - Female

Demographic Assumption Rates - Years of Service*		
Service	Service Retirement Rate*	Withdrawal (Termination) Rate**
5	0.150	0.050
10	0.150	0.030
15	0.150	0.030
20	0.150	0.030
25	0.150	0.030
30	0.200	0.030
35	0.200	0.030
40	0.200	0.030
45	0.200	0.030
50	0.200	0.030

**The Service Retirement Rates above apply to a member at age 60.*

***The Withdrawal Rates above apply to a member at age 40.*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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APPENDIX F – SUPPLEMENTAL TABLES FOR REPORTING PURPOSES

Safety - Male

Demographic Assumption Rates - Years of Service*		
Service	Service Retirement Rate*	Withdrawal (Termination) Rate**
5	0.200	0.040
10	0.200	0.040
15	0.200	0.040
20	0.400	0.040
25	0.400	0.040
30	0.400	0.040
35	0.400	0.040
40	0.400	0.040
45	0.400	0.040
50	0.400	0.040

**The Service Retirement Rates above apply to a member at age 60.*

***The Withdrawal Rates above apply to a member at age 40.*

Safety - Female

Demographic Assumption Rates - Years of Service*		
Service	Service Retirement Rate*	Withdrawal (Termination) Rate**
5	0.200	0.040
10	0.200	0.040
15	0.200	0.040
20	0.400	0.040
25	0.400	0.040
30	0.400	0.040
35	0.400	0.040
40	0.400	0.040
45	0.400	0.040
50	0.400	0.040

**The Service Retirement Rates above apply to a member at age 60.*

***The Withdrawal Rates above apply to a member at age 40.*



Classic Values, Innovative Advice