

## **Tulare County Employees' Retirement Association**

### **Actuarial Valuation Report as of June 30, 2020**

**Produced by Cheiron**

**October 2020**

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October 21, 2020

Board of Retirement  
Tulare County Employees' Retirement Association  
136 N. Akers St.  
Visalia, CA 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, 2020. 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

A handwritten signature in blue ink, reading "Graham A. Schmidt".

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

A handwritten signature in blue ink, reading "Steven M. Hastings".

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

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**FOREWORD**

Cheiron has performed the actuarial valuation of the Tulare County Employees' Retirement Association as of June 30, 2020. 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).

The results of this report rely on future plan experience conforming to the underlying assumptions. To the extent that actual plan experience deviates from the underlying assumptions, the results would vary accordingly.

This report was prepared using census data and financial information as of the valuation date, June 30, 2020. Events following that date are not, and should not be, 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  
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**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 2021-2022,
- An assessment and disclosure of key risks, and
- Information required by the GFOA for the Comprehensive Annual Financial Report.

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, 2021. 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. For this valuation the discount rate was lowered from 7.25% to 7.00%, the mortality improvement projection scale was updated to MP-2019, and a number of other demographic assumptions were updated to reflect experience. A summary of the assumptions and methods used in the current valuation is shown in Appendix B. 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.

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, 2020 actuarial valuation are as follows:

- The average actuarially determined employer contribution rate increased from 13.79% of payroll to 15.68% 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 14.78%. 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 1.36% from assumption changes adopted by the Board resulting from the recently completed experience study, of which only 0.45% is recognized this year; an identical amount will be recognized in the next two valuations. 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 0.42% increase due to investment losses for the plan year ending June 30, 2020. On a Market Value of Assets basis, the Plan earned 0.14%, as compared to the prior year's 7.25% assumed return. However, on a smoothed (Actuarial Value of Assets) basis, the return was 6.27%.
- The UAL is the excess of the System's Actuarial Liability over the Actuarial Value of Assets. The System experienced an increase in the UAL from \$142.9 million as of June 30, 2019 to \$205.0 million as of June 30, 2020. The \$62.2 million increase in the UAL was primarily due to assumption changes, which increased the UAL by \$42.4 million for the plan year ending June 30, 2020. The impact of investment and demographic losses increased the UAL by \$15.6 million and \$5.6 million, respectively, which was offset by \$1.4 million in other UAL changes.
- The remaining balance of the June 30, 2015 UAL is being amortized over 14 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 15 years). Finally, the UAL loss for the plan year ending June 30, 2020 and the UAL increase from assumption changes are both being amortized as new 19-year layers. A detailed reconciliation of the components of change in the UAL is shown in Table I-3.
- The System's funded ratio, the ratio of actuarial assets over Actuarial Liability, decreased from 91.8% last year to 89.1% as of June 30, 2020. On a market value basis, the funded ratio decreased from 88.3% last year to 80.3% this year. The Actuarial Value of Assets is higher than the market value, meaning that there are deferred investment losses that will be recognized in the Actuarial Value of Assets (and employer contributions) in future years.

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**SECTION I – EXECUTIVE SUMMARY**

- During the 2019-2020 plan year, the actuarial liabilities of the System increased more than expected, before accounting for the assumption changes. The liability losses were associated primarily with salary increases that were higher than expected, particularly for Safety members, as well as COLA increases that were higher than expected. These losses were partially offset by mortality gains. In total, the liability losses increased the Actuarial Liability by \$5.6 million.
- Overall participant membership increased compared to last year, from 10,013 to 10,196. The total active population decreased from 4,619 to 4,605 and total projected payroll increased from \$272,415,593 to \$284,272,002. The number of inactives increased from 2,082 to 2,183, while the number of retirees increased from 3,312 to 3,408.
- In Table IV-4 of this valuation, we have disclosed a liability of \$72.8 million associated with future transfers to the Supplemental Retiree Benefit Reserve (SRBR). This amount 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 \$6.0 million higher, or about 2.1% of pay. We have also disclosed a liability of \$99.5 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  
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**SECTION I – EXECUTIVE SUMMARY**

<p style="text-align: center;"><b>Table I-1</b> <b>Summary of Key Valuation Results - Funded Status</b> (in thousands)</p>			
<b>Valuation Date</b>	<b>June 30, 2019</b>	<b>June 30, 2020</b>	<b>% Change</b>
Actuarial Liability	\$ 1,741,283	\$ 1,875,797	7.7%
Market Value of Assets	\$ 1,646,171	\$ 1,615,418	-1.9%
Market Value of Assets (Excluding SRBR)	1,538,405	1,507,070	-2.0%
Actuarial Value of Assets (Excluding SRBR)	1,598,431	1,670,786	4.5%
Unfunded Actuarial Liability (UAL)			
- based on Market Value of Assets	\$ 202,878	\$ 368,727	81.7%
- based on Actuarial Value of Assets	142,851	205,011	43.5%
Funding Ratio - Market value basis	88.3%	80.3%	-8.0%
Funding Ratio - Actuarial value basis	91.8%	89.1%	-2.7%
Expected Payroll	\$ 272,416	\$ 284,272	4.4%
Asset Leverage Ratio (Excluding SRBR)	5.6	5.3	-6.1%
Actuarial Liability Leverage Ratio	6.4	6.6	3.2%
Interest on UAL (MVA basis)	\$ 14,709	\$ 25,811	75.5%
Interest Cost as Percent of Payroll	5.4%	9.1%	3.7%

*Numbers may not add to totals due to rounding.*



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

<b>Table I-2</b>			
<b>Membership Total</b>			
<b>Item</b>	<b>June 30, 2019</b>	<b>June 30, 2020</b>	<b>% Change</b>
Actives	4,619	4,605	-0.3%
Inactives	2,082	2,183	4.9%
Members Receiving Benefits	3,312	3,408	2.9%
Total Members	10,013	10,196	1.8%
Ratio of Retired Members to Active Members	71.7%	74.0%	2.3%
Active Member Projected Payroll for FYE June 30, 2020 and 2021	\$ 272,415,593	\$ 284,272,002	4.4%
Average Pay per Active	\$ 58,977	\$ 61,731	4.7%

The Unfunded Actuarial Liability (UAL) for TCERA increased by \$62.2 million, from \$142.9 million to \$205.0 million. Table I-3 below presents the specific components of the change in the UAL.

Assumption changes related to the June 30, 2020 experience study increased the UAL by \$42.4 million. The UAL was expected to decrease by \$3.4 million, due to the scheduled amortization payment being greater than the interest on the UAL. Liability experience losses increased the UAL by an additional \$5.6 million and asset losses – i.e., the smoothed investment return below last year's assumed rate of 7.25% – increased the UAL by \$15.6 million. Contributions were slightly lower than expected, increasing the UAL by \$1.9 million. A detailed breakdown of the liability experience can be found in Table IV-2.

<b>Table I-3</b>	
<b>Change in Unfunded Actuarial Liability</b>	
<b>Experience</b>	<b>(in thousands)</b>
Unfunded actuarial liability, 6/30/2019	\$ 142,851
Expected change in unfunded actuarial liability	\$ (3,378)
Increase due to investment loss	15,577
Increase due to contributions less than expected	1,939
Increase due to liability loss	5,587
Increase due to assumption changes	42,435
Total change in unfunded actuarial liability	\$ 62,160
Unfunded actuarial liability, 6/30/2020	\$ 205,011

*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) increased by 1.89% for the June 30, 2020 valuation. The net employer normal cost rate increased by 0.29% and the UAL rate increased by 1.60%. The average employee rate increased by 0.77%, from 8.33% to 9.10%.

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. We would note that without further action, future investment experience related to the POB contribution will be shared amongst all TCERA employers.

**Table I-4  
Summary of Contributions**

	<b>FYE 2021</b>	<b>FYE 2022</b>	<b>Change</b>
<b><u>Contribution Rates</u></b>			
Net Employer Contribution Rate	13.79%	15.68%	1.89%
Estimated Employee Contribution Rate	<u>8.33%</u>	<u>9.10%</u>	0.77%
Total Contribution Rate	22.13%	24.79%	2.66%
Net Employer Contribution Rate with Phase-in	N/A	14.78%	
Estimated Net Employer Contributions (in thousands)	\$ 38,702	\$ 43,252	\$ 4,550
<b><u>Total Contribution Rate</u></b>			
Estimated Employee Contribution Rate	8.33%	9.10%	0.77%
Employer Normal Cost Rate	<u>8.92%</u>	<u>9.21%</u>	0.29%
Total Normal Cost Rate	17.26%	18.32%	1.06%
UAL Rate			
Interest on Market Value UAL	5.40%	9.08%	3.68%
Principal on Market Value UAL	<u>-0.53%</u>	<u>-2.61%</u>	-2.08%
Total UAL Rate	4.87%	6.47%	1.60%
Total Contribution Rate	22.13%	24.79%	2.66%
Total Contribution Rate with Phase-in	N/A	23.88%	

*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 assumption changes and lower than expected investment returns on a smoothed basis. Other sources of increase are demographic losses and contributions being less than expected, which was offset by a reduction in the UAL payment as a result of pensionable payroll increasing by more than expected. In aggregate, the employer contribution rate increased from 13.79% for FYE 2021 to 14.78% for FYE 2022, 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 2021 Net Employer Contribution Rate	8.92%	4.87%	13.79%
Change due to asset loss	0.00%	0.42%	0.42%
Change due to contributions less than expected	0.00%	0.05%	0.05%
Change due to demographic gains and losses	-0.03%	0.18%	0.15%
Change due to payroll more than expected	0.00%	-0.09%	-0.09%
Change due to assumption changes	0.32%	1.04%	1.36%
Phase-in of assumption changes*	-0.21%	-0.69%	-0.91%
Total Change in Employer Rate	0.08%	0.91%	0.98%
FYE 2022 Net Employer Contribution Rate	9.00%	5.78%	14.78%

*\*Reflects first 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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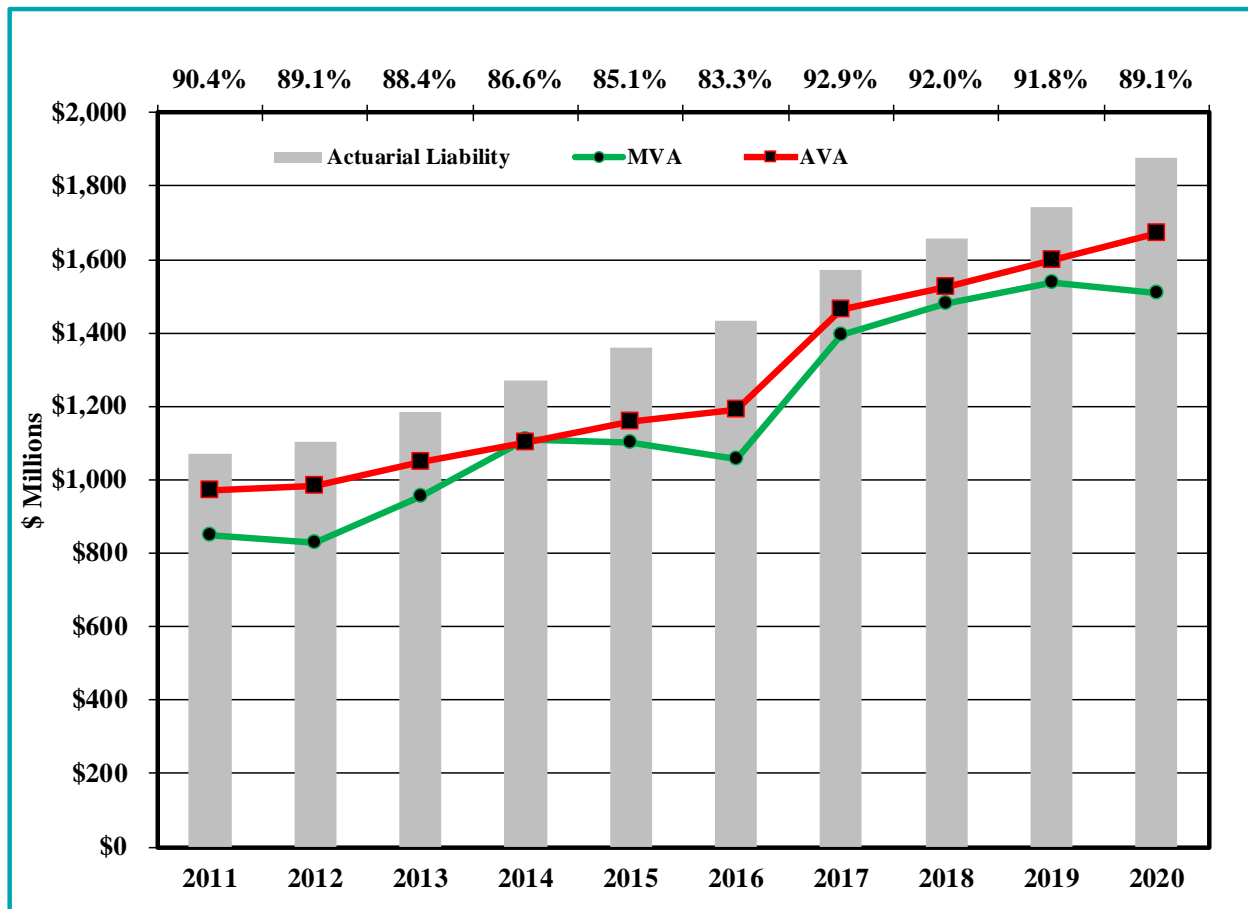
**SECTION I – EXECUTIVE SUMMARY**

**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 90.4% in 2011 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 2020 plan year, the funding ratio decreased slightly for the third year in a row to 89.1%, primarily as a result of assumption changes and investment losses compared to the assumed rate of return.



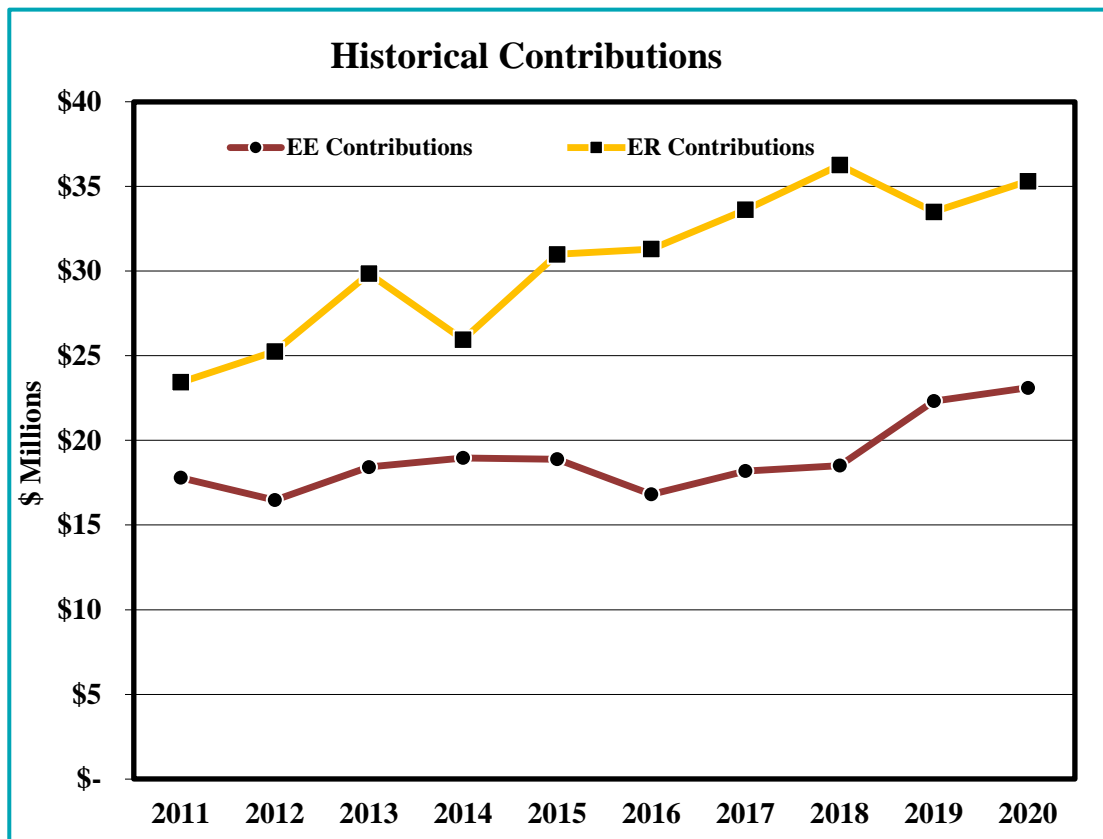
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**SECTION I – EXECUTIVE SUMMARY**

**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 do not include the contribution from POB proceeds that exceeded the regular actuarially determined amounts.



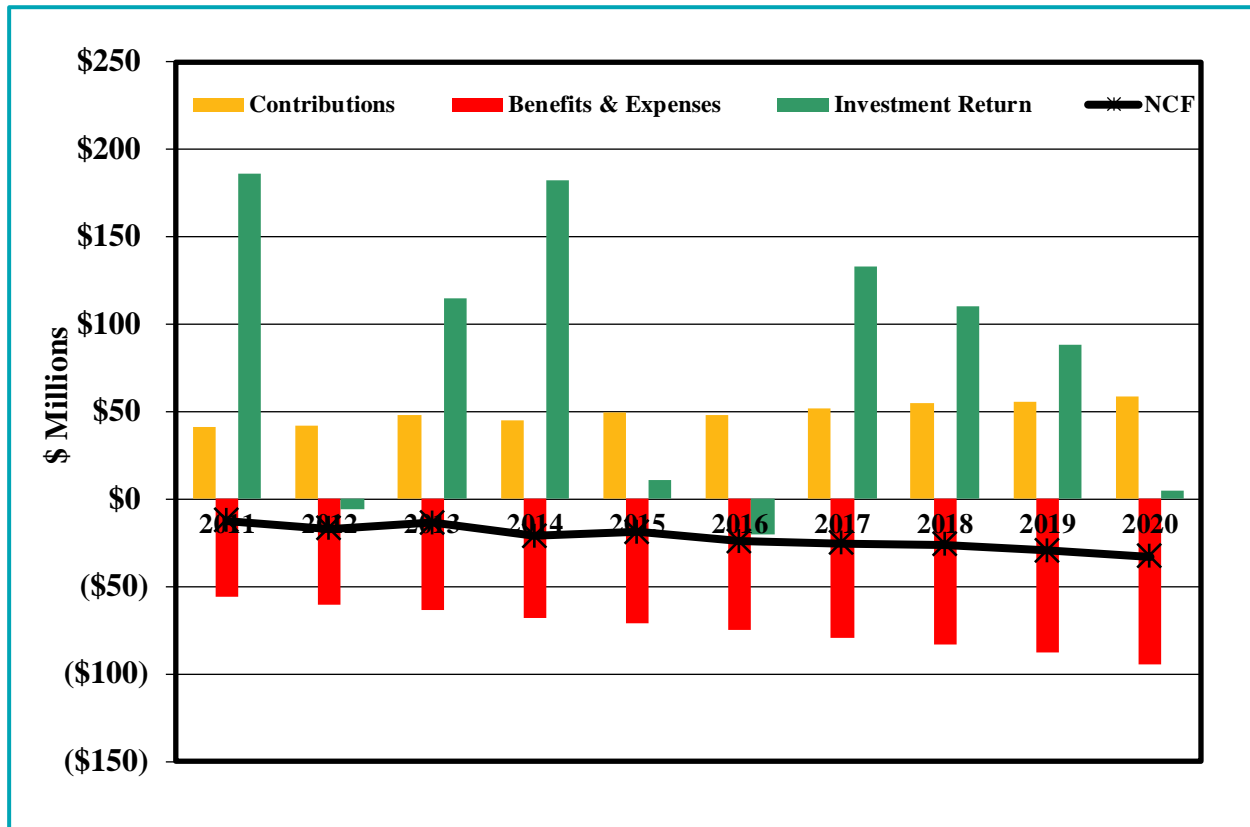
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**SECTION I – EXECUTIVE SUMMARY**

**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 2.3% 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.

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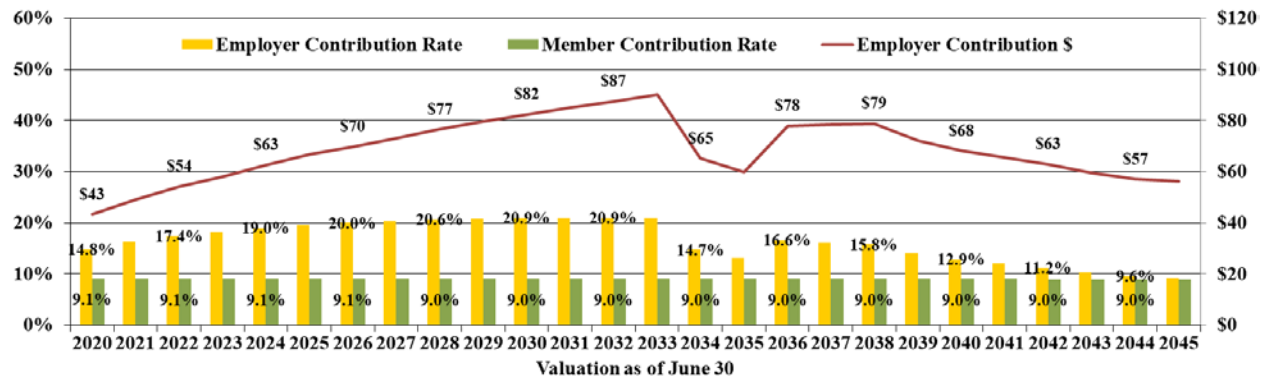
**SECTION I – EXECUTIVE SUMMARY**

**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, 2020 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.

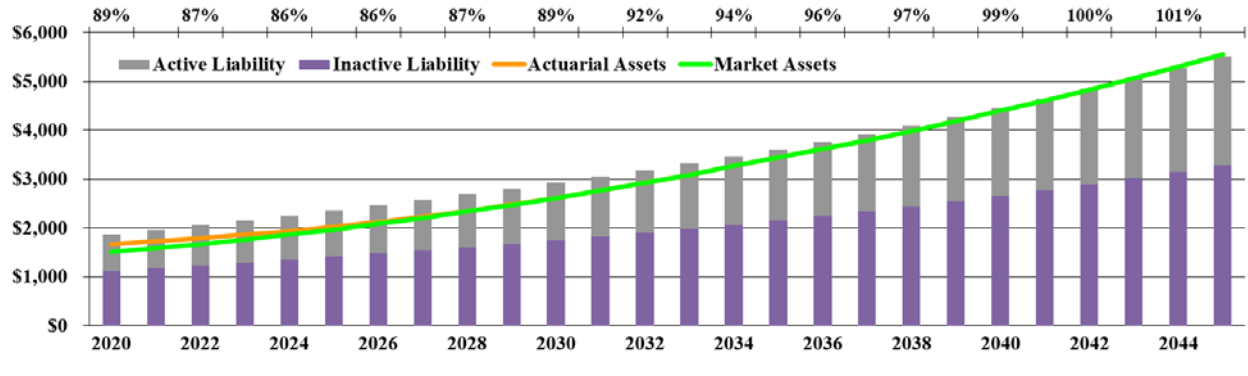
The contribution graph shows that the employer contribution rate is expected to increase for the next ten years as the current deferred investment losses (approximately \$164 million) are recognized, then experience some fluctuation as certain UAL layers drop off.



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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 2041 assuming the actuarial assumptions are achieved. The Market Value of Assets is currently lower than the actuarial value – due to the deferred losses mentioned above – and the funded status on this basis is currently about 10% lower, 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.



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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.

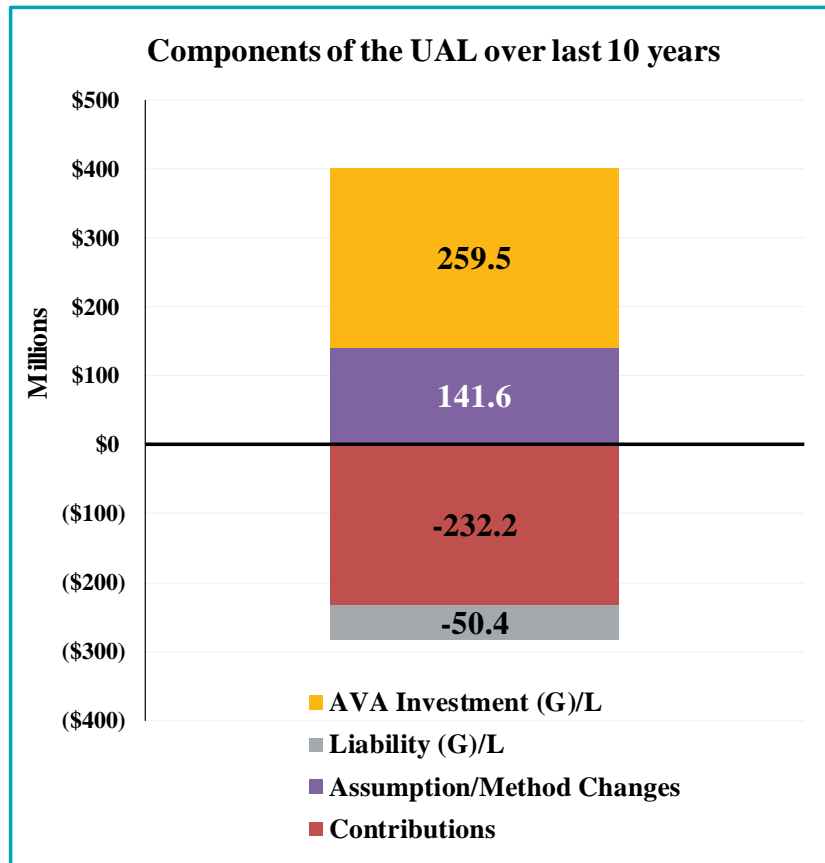
*Contribution risk* is the potential for actual future contributions to deviate from expected future contributions. There are different sources of contribution risk such as the sponsor choosing to not make contributions in accordance with the funding policy. As another example, the contribution requirement 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, 2010 through June 30, 2020. Over the last 10 years, the UAL has increased by approximately \$118 million. The investment losses (gold bar) of \$259 million on the Actuarial Value of Assets (AVA) and assumption/method changes (purple bar) resulting in a total UAL increase of \$142 million are the primary sources in the UAL growth. Contributions in excess of the “tread water” level (red bar) of \$232 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 \$50 million also decreased the UAL.

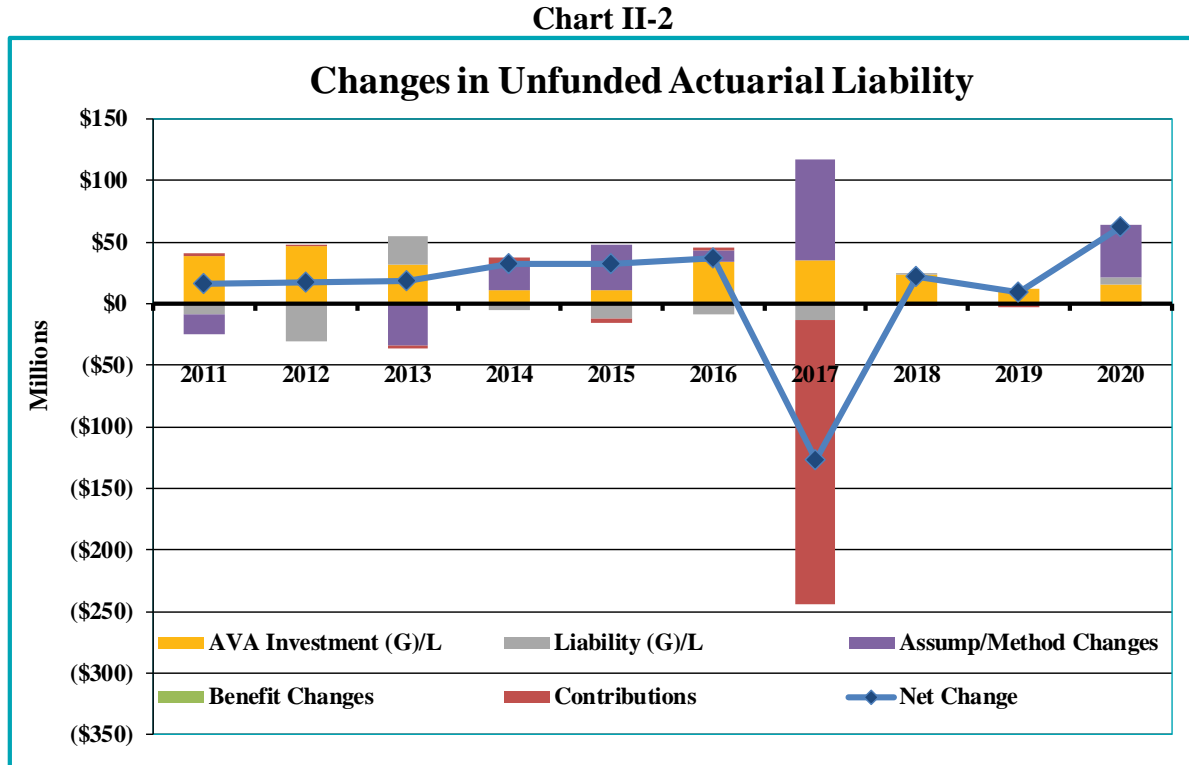
**Chart II-1**



**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 5.2%, with losses occurring on the AVA every year that have increased the UAL. As of June 30, 2020, there are approximately \$164 million of deferred losses that will be recognized over the next nine years. As a result, even if the Plan earns the new expected return of 7.00% on a market basis, there will continue to be losses 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's current capital market assumptions (including their inflation assumption of 1.83%) and the Plan's asset allocation, the expected average annual return is 6.13% compared to the Plan's new 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. There are several assumption changes effective with the June 30, 2020 valuation as a result of the recently adopted experience study.

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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 were above the tread water level by approximately \$2.7 million and \$1.4 million for the plan years ending in 2019 and 2020, respectively.

**Table II-1**

Unfunded Actuarial Liability (UAL) Change by Source					
June 30,	Contributions	Assumption/ Method Changes	Liability Experience	Investment Experience	Total UAL Change
2011	\$ 1,611,219	\$ (15,647,348)	\$ (8,770,947)	\$ 38,745,383	\$ 15,938,307
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
<b>Total</b>	<b>\$ (232,223,916)</b>	<b>\$ 141,636,927</b>	<b>\$ (50,423,440)</b>	<b>\$ 259,451,546</b>	<b>\$ 118,441,116</b>

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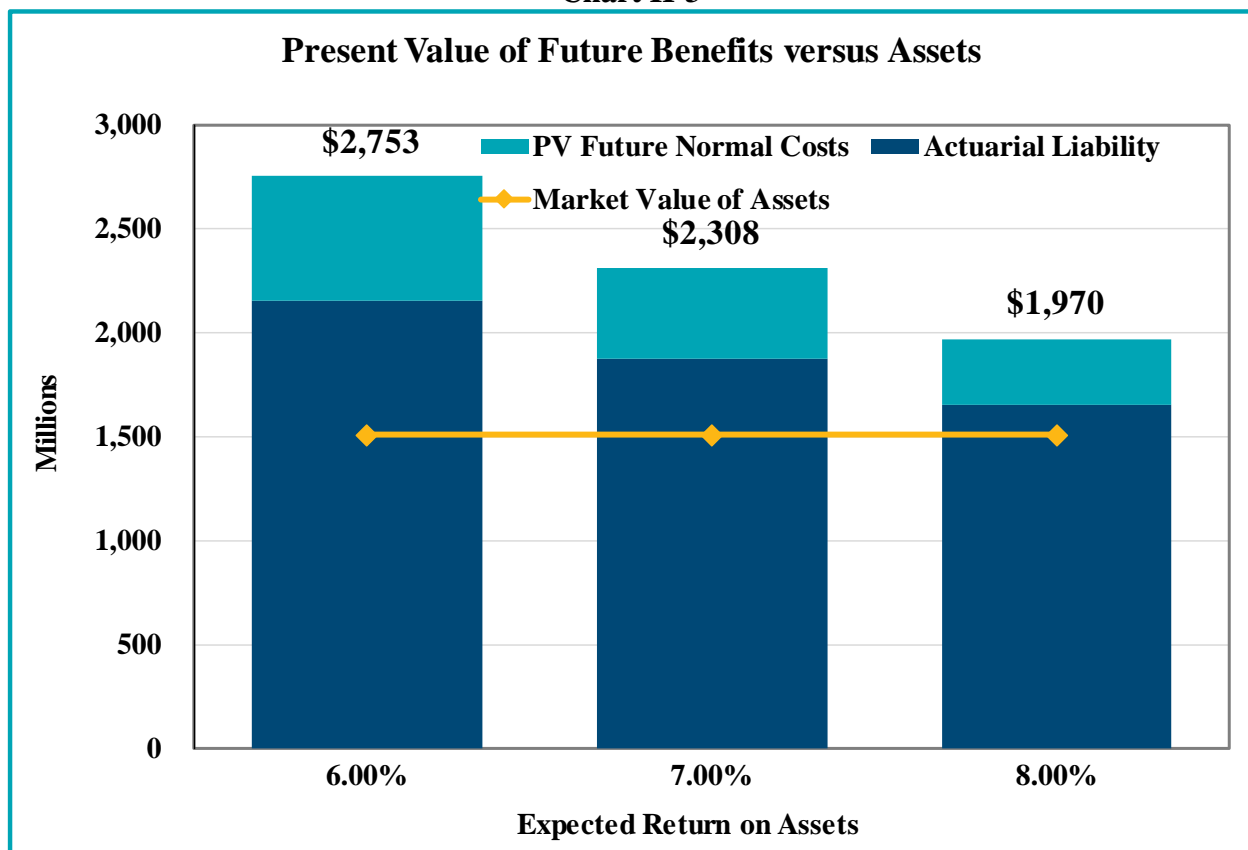
**SECTION II – RISK IDENTIFICATION AND ASSESSMENT**

**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**



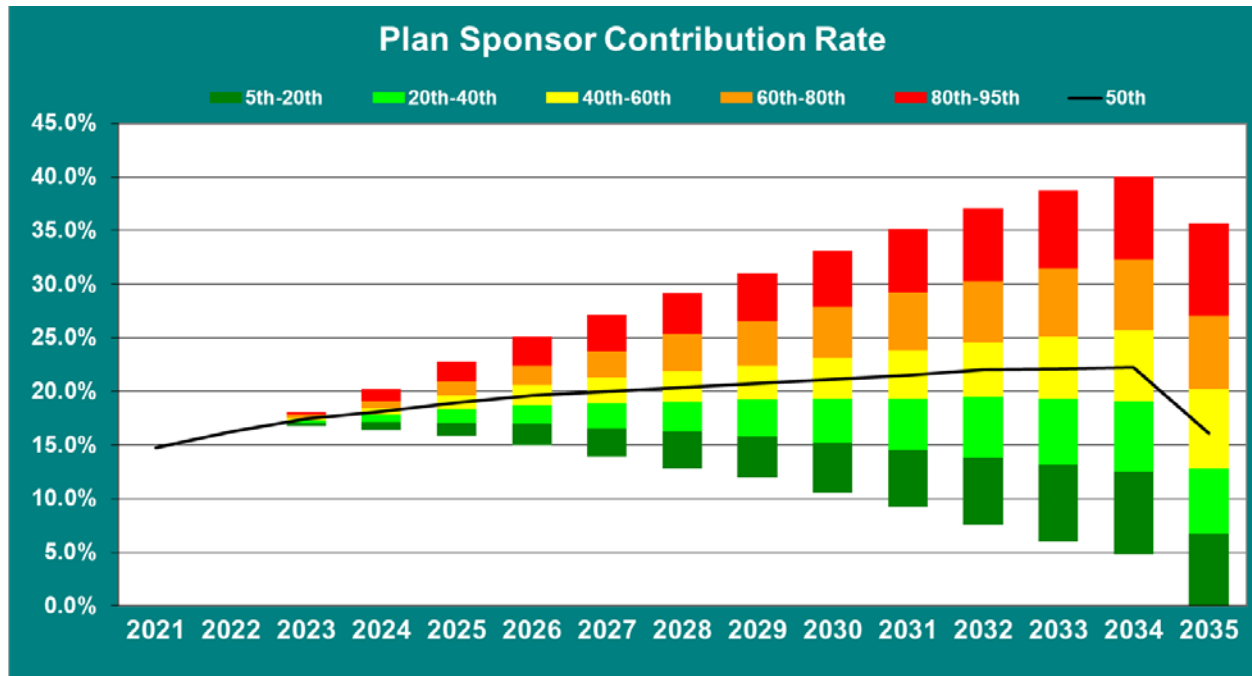
If investments return 7.00% annually, the Plan would need approximately \$2.3 billion in assets today to pay all projected benefits compared to current assets of \$1.5 billion (excluding values for Supplemental Retiree Benefit Reserve). If investment returns are only 6.00%, the Plan would need approximately \$2.8 billion in assets today, and if investment returns are 8.00%, the Plan would need approximately \$2.0 billion in assets today.

**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 10.8% standard deviation of annual returns, as indicated by Verus's current capital market assumptions.



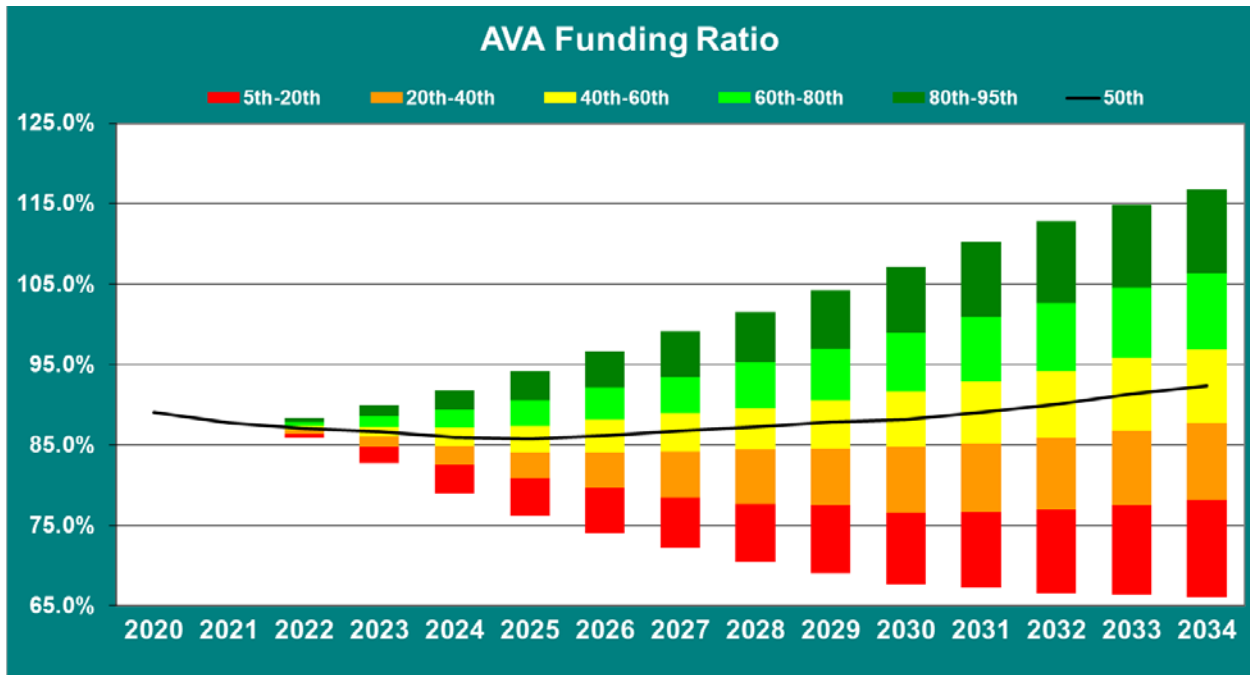
The stochastic projection of employer contributions as a percent of pay shows the probable range of future contribution rates. The baseline contribution rate (black line) is based on the median of the simulations using an average return of 7.00%. It is similar to the *deterministic* projections discussed 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 95<sup>th</sup> percentile, the projected employer contribution rate approaches 40% of pay in 2034. Conversely, the most optimistic scenario shown, the 5<sup>th</sup> percentile, the projected employer contribution rate declines to 5% in 2034.

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 PEPR.

**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 92% 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.

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**SECTION II – RISK IDENTIFICATION AND ASSESSMENT**

### Plan Maturity Measures

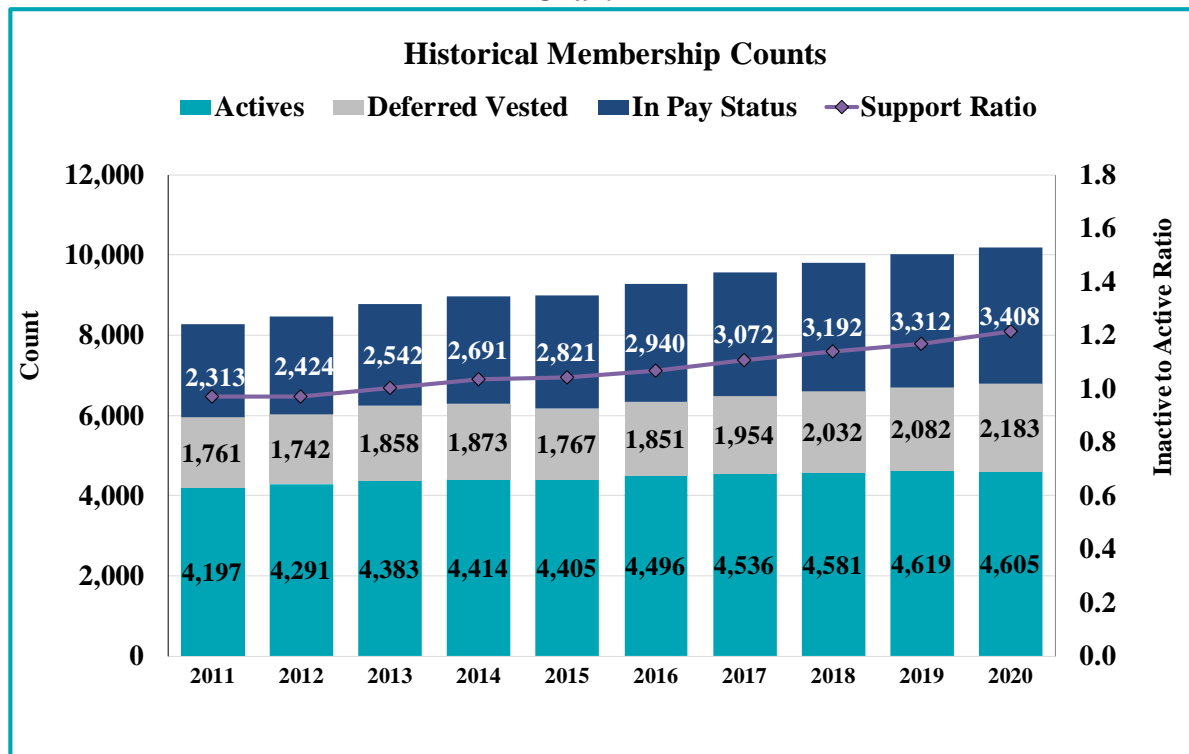
The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. Before assessing each of these risks, it is important to understand the maturity of the Plan compared to other plans and how the maturity has changed over time.

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 2011 to 2020. The inactive membership level was only about 97% of the active membership level in 2011, 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 1.2. That means for 2020, there are approximately 1.2 inactive members per active member.

**Chart II-4**





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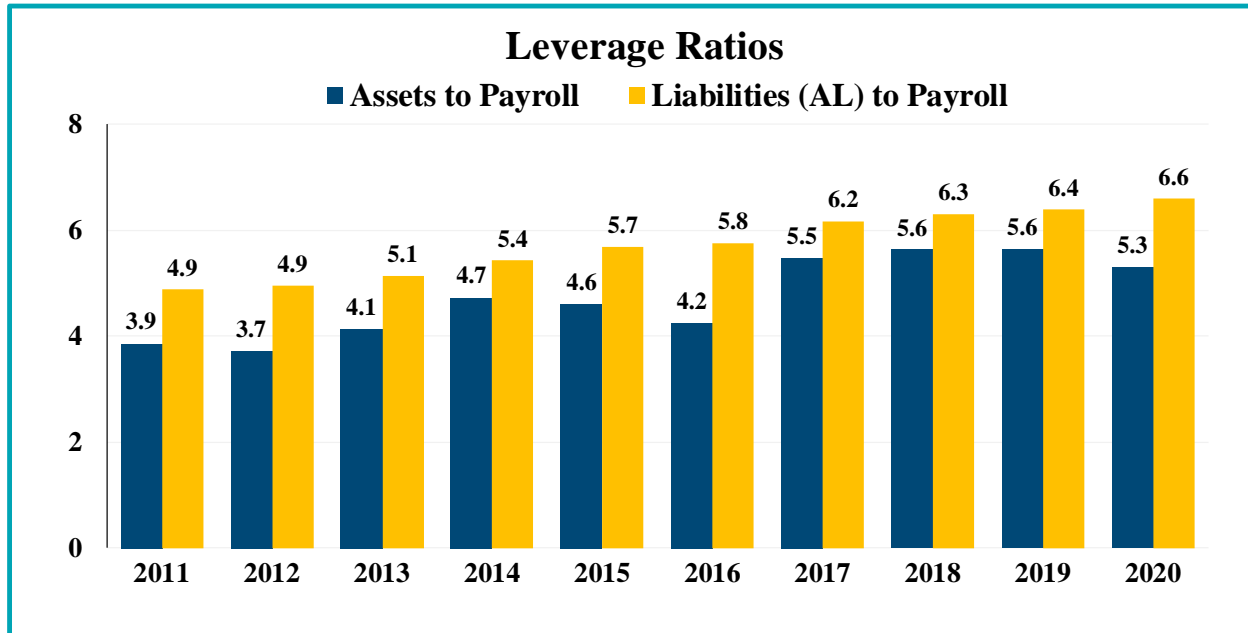
**SECTION II – RISK IDENTIFICATION AND ASSESSMENT**

**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 2010, 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.

**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.

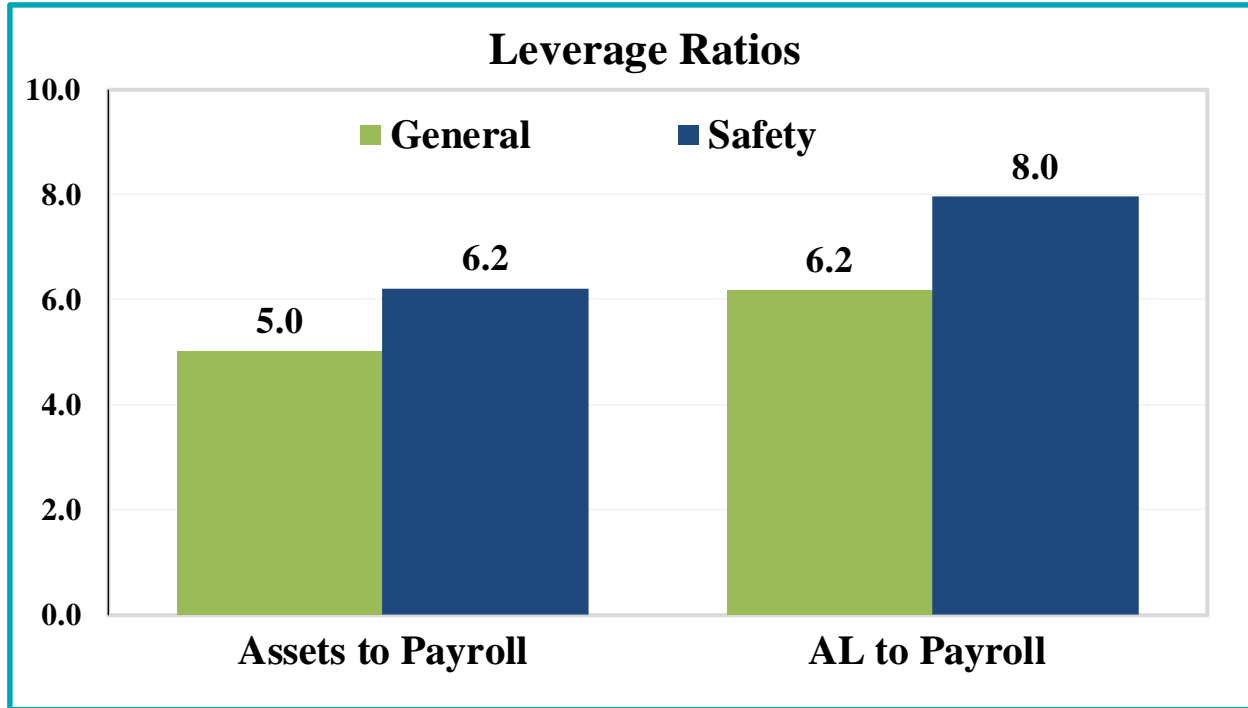
As the Plan becomes better funded, the asset leverage ratio will increase, and if it was 100% funded, the asset leverage ratio would be close to 6.6 times payroll, or the Actuarial Liability (AL) leverage ratio.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**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 5.0 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 85% of payroll (17.00% times 5.0). The same investment loss for the Safety group with an asset ratio of 6.2 would be equivalent to approximately 105% 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, 2019 and June 30, 2020;
- 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, 2019 and June 30, 2020.

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

Table III-1 Statement of Assets at Market Value		
	June 30, 2019	June 30, 2020
<b>Cash and Securities Lending Collateral:</b>		
Cash and Short Term Investments	\$ 48,422,000	\$ 98,130,000
Collateral on Loaned Securities	57,325,000	35,338,000
Total Cash and Securities Lending Collateral	\$ 105,747,000	\$ 133,468,000
<b>Receivables:</b>		
Sales of Investments	\$ 38,890,000	\$ 10,315,000
Interest and Dividends	2,653,000	1,847,000
Employee and Employer Contributions	1,446,000	860,000
Other Receivables	20,000	12,000
Total Receivables	\$ 43,009,000	\$ 13,034,000
<b>Investments, at Fair Value:</b>		
Fixed Income	\$ 445,208,000	\$ 474,595,000
Equities	721,124,000	723,450,000
Real Estate	141,552,000	177,779,000
Alternative Investments (Hedge Funds, Private Equity, Private Credit, Futures, Commodities)	289,006,000	151,671,000
Total Investments, at Fair Value	\$ 1,596,890,000	\$ 1,527,495,000
<b>Capital Assets</b>		
Land	\$ 370,000	\$ 370,000
Building, Office Equipment and Furniture Net of Accumulated Depreciation	731,000	694,000
Intangible Assets, Pension Administration System Net of Accumulated Depreciation	910,000	607,000
Total Capital Assets	\$ 2,011,000	\$ 1,671,000
<b>Total Assets</b>	\$ 1,747,657,000	\$ 1,675,668,000
<b>Current Liabilities:</b>		
Purchase of Investments	\$ 40,140,000	\$ 19,237,000
Obligations under Security Lending Program	57,325,000	35,337,000
Refunds Payable	2,549,000	3,392,000
Accounts Payable	1,382,000	2,180,000
Total Current Liabilities	\$ 101,396,000	\$ 60,146,000
<b>Long-Term Liabilities:</b>		
Compensated Absences	\$ 90,000	\$ 104,000
Total Long-Term Liabilities	\$ 90,000	\$ 104,000
<b>Total Liabilities</b>	\$ 101,486,000	\$ 60,250,000
<b>Total Market Value of Assets for Valuation</b>	<b>\$ 1,646,171,000</b>	<b>\$ 1,615,418,000</b>

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, 2019 and June 30, 2020.

<b>Table III-2 Changes in Market Values</b>		
	<b>June 30, 2019</b>	<b>June 30, 2020</b>
<b>Additions:</b>		
Contributions		
Employer	\$ 33,494,000	\$ 35,310,000
Plan Member	22,325,000	23,104,000
Total Contributions	<u>\$ 55,819,000</u>	<u>\$ 58,414,000</u>
Investment Income		
Net Appreciation/(Depreciation) in		
Fair Value of Investments	\$ 78,961,000	\$ (5,485,000)
Interest	9,522,000	5,219,000
Dividends	4,460,000	4,400,000
Real Estate Operating Income	3,918,000	5,155,000
Other Investment Income	1,905,000	4,557,000
Total Investment Activity Income/(Loss)	<u>\$ 98,766,000</u>	<u>\$ 13,846,000</u>
Less Expenses from Investing Activities	<u>8,301,000</u>	<u>9,051,000</u>
Net Investing Activity Income/(Loss)	<u>\$ 90,465,000</u>	<u>\$ 4,795,000</u>
From Securities Lending Activities		
Securities Lending Income	\$ 1,516,000	\$ 816,000
Less Expenses from Securities Lending Income		
Management Fee	\$ 12,000	\$ 691,000
Borrower Rebate	1,379,000	(5,000)
Net Securities Lending Income	<u>\$ 125,000</u>	<u>\$ 130,000</u>
Total Net Investment Income/(Loss)	<u>\$ 90,590,000</u>	<u>\$ 4,925,000</u>
Other Income	\$ 189,000	\$ 188,000
<b>Total Additions</b>	<b>\$ 146,598,000</b>	<b>\$ 63,527,000</b>

*Numbers may not add to totals due to rounding.*

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

Table III-2 Changes in Market Values (Continued)		
	June 30, 2019	June 30, 2020
<b>Deductions:</b>		
Benefits	\$ 82,236,000	\$ 87,671,000
Refunds of Contributions	2,861,000	3,756,000
Administrative Expenses	<u>2,806,000</u>	<u>2,853,000</u>
Total Deductions	\$ 87,903,000	\$ 94,280,000
<b>Net Increase/(Decrease)</b>	<b>\$ 58,695,000</b>	<b>\$ (30,753,000)</b>
<b><u>Net Assets Held in Trust for Pension Benefits</u></b>		
Beginning of Year	\$ 1,587,476,000	\$ 1,646,171,000
End of Year for Valuation	\$ 1,646,171,000	\$ 1,615,418,000
Approximate Return*	5.59%	0.14%

*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, 2020						
<u>Six month Period</u>		<u>Total Actual Market Return (net)</u>	<u>Expected Market Return (net)</u>	<u>Investment Gain (Loss)</u>	<u>Deferred Factor</u>	<u>Deferred Return</u>
<u>From</u>	<u>To</u>					
1/11	6/11	\$ 49,953,925	\$ 37,183,527	\$ 12,770,398	0.05	\$ 638,520
7/11	12/11	(58,996,703)	39,029,015	(98,025,719)	0.10	(9,802,572)
1/12	6/12	46,133,182	36,032,847	10,100,335	0.15	1,515,050
7/12	12/12	61,934,352	38,223,420	23,710,932	0.20	4,742,186
1/13	6/13	45,446,072	39,915,825	5,530,247	0.25	1,382,562
7/13	12/13	114,083,453	41,675,731	72,407,722	0.30	21,722,317
1/14	6/14	62,482,815	45,022,478	17,460,337	0.35	6,111,118
7/14	12/14	(17,886,044)	46,676,782	(64,562,826)	0.40	(25,825,130)
1/15	6/15	26,507,383	44,856,580	(18,349,197)	0.45	(8,257,139)
7/15	12/15	(45,631,715)	45,909,756	(91,541,471)	0.50	(45,770,736)
1/16	6/16	24,729,226	43,045,278	(18,316,052)	0.55	(10,073,829)
7/16	12/16	44,835,718	44,015,787	819,931	0.60	491,958
1/17	6/17	84,564,705	42,691,625	41,873,080	0.65	27,217,502
7/17	12/17	79,943,304	45,809,189	34,134,115	0.70	23,893,881
1/18	6/18	11,201,303	48,460,635	(37,259,332)	0.75	(27,944,499)
7/18	12/18	(54,685,836)	56,898,055	(111,583,891)	0.80	(89,267,113)
1/19	6/19	143,284,434	53,981,060	89,303,374	0.85	75,907,868
7/19	12/19	74,015,847	59,050,363	14,965,484	0.90	13,468,935
1/20	6/20	(69,767,060)	60,619,959	(130,387,018)	0.95	(123,867,668)
1. Total deferred return						(163,716,787)
2. Market Value of Assets (includes SRBR)						1,615,418,000
3. Actuarial Value of Assets for Funding Ratio (2. - 1.) <sup>1</sup>						1,779,134,000
4. Non-valuation reserves and designations:						
a. Supplemental Retiree Benefit Reserve (SRBR)						108,348,000
5. Preliminary Actuarial Value of Assets (3. - 4.) <sup>2</sup>						1,670,786,000
6. Corridor Limit						
a. 70% of Market Value of Assets excluding SRBR						1,054,949,000
b. 130% of Market Value of Assets excluding SRBR						1,959,191,000
7. Actuarial Value of Assets after Corridor						1,670,786,000

<sup>1</sup>Items will not sum due to a rounding adjustment of \$292 on the MVA

<sup>2</sup>Items will not sum due to a rounding adjustment of \$475 on the SRBR

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**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.

<b>Table III-4 Allocation of Assets by Accounting Reserve Amounts for the Years Ended June 30, 2019 and June 30, 2020</b>			
		<b>FYE 2019</b>	<b>FYE 2020</b>
1. Member Deposit Reserve	\$	301,935,000	\$ 319,562,000
2. Employer Advance Reserve		817,209,000	859,182,000
3. Retiree Reserve		426,060,000	442,157,000
4. Supplemental Retiree Benefit Reserve		107,766,000	108,348,000
5. Contingency Reserve		50,671,000	49,228,000
6. Market Stabilization Reserve		(60,026,000)	(163,717,000)
7. TCERA Property, Inc. Retained Earnings		660,000	787,000
8. Other Reserves		1,896,000	(129,000)
<b>Total Reserves</b>	\$	1,646,171,000	\$ 1,615,418,000

*Numbers may not add to totals due to rounding.*



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**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.

<b>Table III-5 Net Return on Assets vs. Increase in Consumer Price Index</b>			
<b>Year Ended June 30</b>	<b>Net Return at Market Value*</b>	<b>Net Return at Actuarial Value*</b>	<b>Increase in Consumer Price Index**</b>
2011	21.8%	3.8%	3.6%
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%
<b>Compound Average</b>	<b>6.9%</b>	<b>5.2%</b>	<b>1.7%</b>
* 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, 2020**

**SECTION IV – LIABILITIES**

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

- **Disclosure** of System liabilities at June 30, 2019 and June 30, 2020;
- 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, 2020**

**SECTION IV – LIABILITIES**

<b>Table IV-1</b> <b>Present Value of Future Benefits and Actuarial Liability</b> (in thousands)				
<b>Item</b>	<b>General</b>	<b>Safety</b>	<b>June 30, 2020 Total</b>	<b>June 30, 2019 Total</b>
<b>Present Value of Future Benefits (PVFB)</b>				
Actives	\$ 841,103	\$ 349,187	\$ 1,190,290	\$ 1,057,169
Terminated Vested	83,749	25,764	109,512	131,178
Retirees	623,454	190,963	814,417	747,889
Disabled	55,374	63,575	118,949	108,930
Beneficiaries	48,262	26,804	75,066	68,208
<b>Total PVFB</b>	<b>\$ 1,651,943</b>	<b>\$ 656,292</b>	<b>\$ 2,308,235</b>	<b>\$ 2,113,374</b>
<b>Actuarial Liability</b>				
Total Present Value of Benefits	\$ 1,651,943	\$ 656,292	\$ 2,308,235	\$ 2,113,374
Present Value of Future Normal Costs				
Employer Portion	154,173	69,871	224,044	197,048
Employee Portion	144,214	64,180	208,394	175,043
<b>Actuarial Liability</b>	<b>\$ 1,353,556</b>	<b>\$ 522,241</b>	<b>\$ 1,875,797</b>	<b>\$ 1,741,283</b>
Actuarial Value of Assets	\$ 1,218,170	\$ 452,616	\$ 1,670,786	\$ 1,598,431
Funded Ratio	90.0%	86.7%	89.1%	91.8%
<b>Unfunded Actuarial Liability/(Surplus)</b>	<b>\$ 135,386</b>	<b>\$ 69,625</b>	<b>\$ 205,011</b>	<b>\$ 142,851</b>

*Numbers may not add to totals due to rounding.*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**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 expected
- Investment earnings different than expected
- A change in the method used to measure plan assets

<b>Table IV-2</b> <b>Development of 2020 Experience Gain/(Loss)</b> (in thousands)	
<b>Item</b>	<b>Cost</b>
1. Unfunded Actuarial Liability at June 30, 2019	\$ 142,851
2. Middle of year actuarial liability payment	(13,263)
3. Interest to end of year on 1 and 2	9,884
4. Impact of assumption changes	42,435
5. Expected Unfunded Actuarial Liability at June 30, 2020	\$ 181,908
6. Actual Unfunded Liability at June 30, 2020 (AVA basis)	205,011
7. Net Gain/(Loss): (5 - 6)	\$ (23,103)
8. Portion of net gain/(loss) due to:	
a. Investment experience loss	\$ (15,577)
b. Contributions less than expected	(1,939)
c. Inactive mortality gain	734
d. COLAs more than expected	(1,022)
e. Salaries more than expected	(7,614)
f. Retirements	(996)
g. Terminations	(1,227)
h. Other experience	4,538
i Total gain/(loss)	\$ (23,103)

*Numbers may not add to totals due to rounding.*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**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, 2020 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, 2020		
	June 30, 2019	June 30, 2020
<b>Level One</b>		
1. Current Retirees	\$ 57,858,377	\$ 60,262,708
2. Inactive Members	2,216,918	2,051,922
3. Active members	<u>37,226,796</u>	<u>38,425,932</u>
4. Subtotal	\$ 97,302,091	\$ 100,740,562
<b>Level Two</b>		
5. Supplemental COLA for those who have lost at least 15% of Purchasing Power	\$ 797,753	\$ 718,407
<b>Level Three</b>		
6. Supplemental Spousal Death Benefit	\$ 3,449,188	\$ 4,846,221
<b>7. Total SRBR Combined Liability: (4) + (5) + (6)</b>	\$ 101,549,032	\$ 106,305,190
<b>8. Supplemental Retiree Benefit Reserve: (SRBR)</b>	<u>107,766,000</u>	<u>108,348,000</u>
<b>9. Net Reserve: (8) - (7)</b>	\$ 6,216,968	\$ 2,042,810

*Numbers may not add to totals due to rounding.*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**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 (\$99.5 million) as well as the accrued portion of the present value of future transfers to the SRBR (\$72.8 million). In addition, the SRBR balance of \$108.3 million as of June 30, 2020 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 fallen significantly since the prior valuation (from \$116.0 million to \$72.8 million), as a result of the increase in deferred investment losses, which reduces 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.

<b>Table IV-4</b> <b>Disclosure of SRBR Liabilities</b> (in thousands)	
<b>Valuation Date</b>	<b>June 30, 2020</b>
<u><b>Without SRBR</b></u>	
Actuarial Liability (Excluding SRBR)	\$ 1,875,797
Actuarial Value of Assets (Excluding SRBR)	1,670,786
Market Value of Assets (Excluding SRBR)	1,507,070
 Funded Ratio - Actuarial Value Basis	 89.1%
Funded Ratio - Market Value Basis	80.3%
<u><b>With SRBR</b></u>	
Actuarial Liability (Excluding SRBR)	\$ 1,875,797
Liability Associated with Current SRBR Balance	99,539
Liability from Future Transfers	72,820
Total Liability with SRBR	\$ 2,048,156
 Actuarial Value of Assets (Including SRBR)	 \$ 1,779,134
Market Value of Assets (Including SRBR)	1,615,418
 Funded Ratio - Actuarial Value Basis	 86.9%
Funded Ratio - Market Value Basis	78.9%

*Numbers may not add to totals due to rounding.*

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**  
**ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**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 14 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, 2020**

**SECTION V – CONTRIBUTIONS**

The employer contribution rates for FYE 2022 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, 2020 for FYE 2022				
	Tier 1	Tier 2 & 3	Tier 4	Total
<b>General (County)</b>				
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%
<b>General (Non-County)</b>				
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%
<b>Safety (County)</b>				
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, 2020**

**SECTION V – CONTRIBUTIONS**

The employer contribution rates for FYE 2021 are shown in the table below, split by tier (1-4) and membership class (General or Safety).

<b>Table V-1(b)</b> <b>Development of the Net Employer Contribution Rate as of June 30, 2019 for FYE 2021</b>				
	<b>Tier 1</b>	<b>Tier 2 &amp; 3</b>	<b>Tier 4</b>	<b>Total</b>
<b>General (County)</b>				
1. Total Normal Cost Rate	15.46%	16.25%	14.42%	15.53%
2. Member Contribution Rate	<u>1.46%</u>	<u>7.92%</u>	<u>7.21%</u>	<u>7.61%</u>
3. Employer Normal Cost Rate (1-2)	14.00%	8.33%	7.21%	7.92%
4. UAL Amortization	<u>4.20%</u>	<u>4.20%</u>	<u>4.20%</u>	<u>4.20%</u>
5. Net Employer Contribution Rate (3+4)	18.20%	12.53%	11.41%	12.12%
<b>General (Non-County)</b>				
1. Total Normal Cost Rate	15.46%	16.25%	14.42%	15.53%
2. Member Contribution Rate	<u>1.46%</u>	<u>7.92%</u>	<u>7.21%</u>	<u>7.61%</u>
3. Employer Normal Cost Rate (1-2)	14.00%	8.33%	7.21%	7.92%
4. UAL Amortization	<u>11.57%</u>	<u>11.57%</u>	<u>11.57%</u>	<u>11.57%</u>
5. Net Employer Contribution Rate (3+4)	25.57%	19.90%	18.78%	19.49%
<b>Safety (County)</b>				
1. Total Normal Cost Rate	N/A	22.26%	24.43%	22.96%
2. Member Contribution Rate	<u>N/A</u>	<u>10.00%</u>	<u>12.21%</u>	<u>10.71%</u>
3. Employer Normal Cost Rate (1-2)	N/A	12.26%	12.21%	12.25%
4. UAL Amortization	<u>N/A</u>	<u>5.17%</u>	<u>5.17%</u>	<u>5.17%</u>
5. Net Employer Contribution Rate (3+4)	N/A	17.43%	17.38%	17.42%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**SECTION V – CONTRIBUTIONS**

The combined General and Safety employer contribution rates for FYE 2022 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).

<b>Table V-2(a)</b> <b>Development of the Employer Contribution Rate as of June 30, 2020 for FYE 2022</b> <b>with Social Security Integration</b>				
	<b>Tier 1</b>	<b>Tier 2 &amp; 3</b>	<b>Tier 4</b>	<b>Total</b>
<b>General and Safety</b>				
1. Employer Normal Cost Rate:	15.23%	9.37%	8.45%	9.00%
a. Rate on first \$161.54 of biweekly compensation	10.37%	6.39%		
b. Rate on biweekly compensation in excess of \$161.54	15.55%	9.58%		
2. UAL Rate:	5.16%	5.83%	5.70%	5.78%
a. Rate on first \$161.54 of biweekly compensation	3.52%	3.97%		
b. Rate on biweekly compensation in excess of \$161.54	5.27%	5.96%		
3. Total Rate (1 + 2):	20.39%	15.20%	14.15%	14.78%
a. Rate on first \$161.54 of biweekly compensation	13.88%	10.36%		
b. Rate on biweekly compensation in excess of \$161.54	20.82%	15.54%		

*Reflects first 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 2022 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).

<b>Table V-2(b) Development of the Employer Contribution Rate as of June 30, 2020 for FYE 2022 with Social Security Integration</b>				
	<b>Tier 1</b>	<b>Tier 2 &amp; 3</b>	<b>Tier 4</b>	<b>Total</b>
<b>General (County)</b>				
1. Employer Normal Cost Rate:	15.23%	8.43%	7.43%	8.01%
a. Rate on first \$161.54 of biweekly compensation	10.37%	5.75%		
b. Rate on biweekly compensation in excess of \$161.54	15.55%	8.63%		
2. UAL Rate:	4.58%	4.58%	4.58%	4.58%
a. Rate on first \$161.54 of biweekly compensation	3.12%	3.13%		
b. Rate on biweekly compensation in excess of \$161.54	4.68%	4.69%		
3. Total Rate (1 + 2):	19.81%	13.01%	12.01%	12.59%
a. Rate on first \$161.54 of biweekly compensation	13.49%	8.88%		
b. Rate on biweekly compensation in excess of \$161.54	20.23%	13.32%		
<b>General (Non-County)</b>				
1. Employer Normal Cost Rate:	15.23%	8.43%	7.43%	8.01%
a. Rate on first \$161.54 of biweekly compensation	10.37%	5.75%		
b. Rate on biweekly compensation in excess of \$161.54	15.55%	8.63%		
2. UAL Rate:	11.77%	11.77%	11.77%	11.77%
a. Rate on first \$161.54 of biweekly compensation	8.01%	8.03%		
b. Rate on biweekly compensation in excess of \$161.54	12.02%	12.05%		
3. Total Rate (1 + 2):	27.00%	20.20%	19.20%	19.78%
a. Rate on first \$161.54 of biweekly compensation	18.38%	13.78%		
b. Rate on biweekly compensation in excess of \$161.54	27.57%	20.68%		
<b>Safety (County)</b>				
1. Employer Normal Cost Rate:	N/A	12.15%	12.45%	12.26%
a. Rate on first \$161.54 of biweekly compensation	N/A	8.25%		
b. Rate on biweekly compensation in excess of \$161.54	N/A	12.37%		
2. UAL Rate:	N/A	7.79%	7.79%	7.79%
a. Rate on first \$161.54 of biweekly compensation	N/A	5.29%		
b. Rate on biweekly compensation in excess of \$161.54	N/A	7.93%		
3. Total Rate (1 + 2):	N/A	19.93%	20.23%	20.04%
a. Rate on first \$161.54 of biweekly compensation	N/A	13.54%		
b. Rate on biweekly compensation in excess of \$161.54	N/A	20.30%		

*Reflects first 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**

Table V-3 below shows information on each layer of the June 30, 2020 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, 2020 Actuarial Valuation**

Type of Base	Date Established	Initial Amount	Initial Amortization Years	June 30, 2020 Outstanding Balance	Remaining Amortization Years	Amortization Amount
1. Initial UAL	6/30/2015	201,848,216	19	189,138,377	14	17,692,373
2. (Gain)/Loss Base	6/30/2016	38,033,040	19	36,349,938	15	3,228,957
3. (Gain)/Loss Base	6/30/2017	25,611,386	19	24,863,984	16	2,106,514
4. Assumption Change Base	6/30/2017	82,259,297	19	79,858,774	16	6,765,753
5. POB Contribution Base	6/30/2017	(233,100,233)	19	(226,297,811)	16	(19,172,286)
6. (Gain)/Loss Base	6/30/2018	23,781,349	19	23,391,331	17	1,897,281
7. (Gain)/Loss Base	6/30/2019	12,251,268	19	12,168,378	18	948,083
8. (Gain)/Loss Base	6/30/2020	23,103,302	19	23,103,302	19	1,734,267
9. Assumption Change Base	6/30/2020	42,435,148	19	<u>42,435,148</u>	19	<u>3,185,428</u>
<b>Total</b>				<b>\$ 205,011,422</b>		<b>\$ 18,386,370</b>

*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 \$18,386,370 is calculated based on a single-equivalent period with the June 30, 2020 UAL of \$205,011,401, the number of years to fully pay off the UAL would be approximately 15 years.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**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 2020 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.

<b>Table V-4 Development of UAL Amortization Rates for FYE 2022</b>	
<b>General (County)</b>	
1. General County Projected Payroll for FYE June 30, 2021	\$ 200,898,912
2. Total General Projected Payroll for FYE June 30, 2021	\$ 218,718,329
3. County Share (1 divided by 2)	91.8528%
4. UAL Payment, not including POB Contribution	\$ 26,849,817
5. UAL Payment for POB Contribution	\$ (14,439,071)
6. County Share of 4. (3 multiplied by 4)	\$ 24,662,309
7. County Share of 5. (100% of 5)	\$ (14,439,071)
8. Total General County UAL Payment (6+7)	\$ 10,223,238
9. General County UAL Rate (8 divided by 1)*	5.09%
<b>General (Non-County)</b>	
1. General Non-County Projected Payroll for FYE June 30, 2021	\$ 17,819,417
2. Total General Projected Payroll for FYE June 30, 2021	\$ 218,718,329
3. Non-County Share (1 divided by 2)	8.1472%
4. UAL Payment, not including POB Contribution	\$ 26,849,817
5. UAL Payment for POB Contribution	\$ (14,439,071)
6. Non-County Share of 4. (3 multiplied by 4)	\$ 2,187,508
7. Non-County Share of 5. (0% of 5)	\$ 0
8. Total General Non-County UAL Payment (6+7)	\$ 2,187,508
9. General Non-County UAL Rate (8 divided by 1)*	12.28%
<b>Safety (County)</b>	
1. County Safety Projected Payroll for FYE June 30, 2021	\$ 65,667,080
2. Total Safety Projected Payroll for FYE June 30, 2021	\$ 65,667,080
3. County Share (1 divided by 2)	100.0000%
4. UAL Payment, not including POB Contribution	\$ 10,708,839
5. UAL Payment for POB Contribution	\$ (4,733,215)
6. County Share of 4. (3 multiplied by 4)	\$ 10,708,839
7. County Share of 5. (100% of 5)	\$ (4,733,215)
8. Total County Safety UAL Payment (6+7)	\$ 5,975,624
9. County Safety UAL Rate (8 divided by 1)*	9.10%

*\*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, 2020**

**SECTION V – CONTRIBUTIONS**

The employer contribution rates for FYE 2022 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 2022 at sample ages.

Table V-5 Detailed Employer Contribution Rate as of June 30, 2020 for FYE 2022										
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	12.59%	2.63%	15.23%	3.79%	0.79%	4.58%	16.38%	3.43%	19.81%
General (County)	2&3	7.00%	1.43%	8.43%	3.80%	0.78%	4.58%	10.80%	2.20%	13.01%
General (County)	4	6.05%	1.38%	7.43%	3.73%	0.85%	4.58%	9.78%	2.23%	12.01%
General (Non-County)	1	12.59%	2.63%	15.23%	9.73%	2.04%	11.77%	22.33%	4.67%	27.00%
General (Non-County)	2&3	7.00%	1.43%	8.43%	9.78%	1.99%	11.77%	16.78%	3.42%	20.20%
General (Non-County)	4	6.05%	1.38%	7.43%	9.59%	2.18%	11.77%	15.64%	3.56%	19.20%
General (Total)	1	12.59%	2.63%	15.23%	4.27%	0.89%	5.16%	16.86%	3.52%	20.39%
General (Total)	2&3	7.00%	1.43%	8.43%	4.29%	0.87%	5.16%	11.29%	2.30%	13.59%
General (Total)	4	6.05%	1.38%	7.43%	4.21%	0.95%	5.16%	10.26%	2.33%	12.59%
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	9.85%	2.30%	12.15%	6.31%	1.48%	7.79%	16.16%	3.78%	19.93%
Safety (County)	4	9.96%	2.49%	12.45%	6.23%	1.56%	7.79%	16.19%	4.05%	20.23%

*Reflects first 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, 2020 for FYE 2022					
Member Type	Tier	Age 25	Age 35	Age 45	Single Rate
General	1	4.85%	5.96%	7.33%	N/A
General	2&3	7.65%	9.38%	11.49%	N/A
General	4	5.69%	7.89%	10.68%	N/A
Safety	1	N/A	N/A	N/A	N/A
Safety	2&3	11.12%	13.18%	15.27%	N/A
Safety	4	11.53%	15.22%	19.26%	N/A

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

Table V-7 below shows projected annual employer contributions for FYE 2022, 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 2022				
Member Type	Tier	Normal Cost	UAL Amortization	Contributions Total
General (County)	1	\$ 93,882	\$ 28,236	\$ 122,117
General (County)	2&3	9,815,802	5,333,063	15,148,865
General (County)	4	6,669,276	4,112,127	10,781,403
General (Non-County)	1	8,327	6,436	14,763
General (Non-County)	2&3	870,646	1,215,636	2,086,282
General (Non-County)	4	591,554	937,332	1,528,886
General (Total)	1	102,209	34,672	136,881
General (Total)	2&3	10,686,448	6,548,699	17,235,147
General (Total)	4	7,260,830	5,049,459	12,310,289
Safety (County)	1	0	0	0
Safety (County)	2&3	5,190,091	3,326,814	8,516,905
Safety (County)	4	3,097,391	1,937,761	5,035,152

*Reflects first 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 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 (%)
2020	\$ 26,336,968	\$ 16,897,405	\$ 43,234,373	14.8%	\$ 26,632,960	9.1%
2021	26,986,688	21,993,330	48,980,018	16.2%	27,403,636	9.1%
2022	28,524,897	25,659,273	54,184,170	17.4%	28,201,216	9.1%
2023	29,333,876	28,789,880	58,123,756	18.2%	29,024,091	9.1%
2024	30,168,375	32,421,764	62,590,139	19.0%	29,872,512	9.1%
2025	31,029,214	35,578,217	66,607,431	19.6%	30,750,327	9.1%
2026	31,919,669	37,868,436	69,788,105	20.0%	31,656,067	9.1%
2027	32,838,557	40,192,776	73,031,334	20.3%	32,590,258	9.1%
2028	33,786,299	42,793,661	76,579,960	20.6%	33,554,616	9.0%
2029	34,764,506	44,777,078	79,541,584	20.8%	34,546,914	9.0%
2030	35,772,072	46,689,153	82,461,225	20.9%	35,571,781	9.0%
2031	36,812,515	48,131,313	84,943,827	20.9%	36,625,569	9.0%
2032	37,883,174	49,576,001	87,459,175	20.9%	37,709,819	9.0%
2033	38,985,740	51,060,792	90,046,531	20.9%	38,828,231	9.0%
2034	40,123,074	25,025,719	65,148,792	14.7%	39,978,957	9.0%
2035	41,294,576	18,452,000	59,746,576	13.1%	41,164,968	9.0%
2036	42,502,554	35,458,799	77,961,353	16.6%	42,383,579	9.0%
2037	43,744,943	34,567,873	78,312,816	16.2%	43,637,071	9.0%
2038	45,023,838	33,788,228	78,812,066	15.8%	44,928,116	9.0%
2039	46,341,908	25,772,914	72,114,821	14.0%	46,257,746	9.0%
2040	47,700,824	20,400,017	68,100,841	12.9%	47,627,736	9.0%



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**SECTION VI – COMPREHENSIVE ANNUAL 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, 2020.

In accordance with Government Finance Officers Association (GFOA) and their recommended checklist for Comprehensive Annual Financial Reports (CAFRs), 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).

<b>Table VI-1</b> <b>SCHEDULE OF FUNDED LIABILITIES BY TYPE</b> (in thousands)									
<b>Valuation Date June 30,</b>	<b>(A) Active/Inactive Member Contributions</b>	<b>(B) Retirees And Beneficiaries</b>	<b>(C) Remaining Active Members' Liabilities</b>	<b>Reported Assets</b>	<b>Portion of Actuarial Liabilities Covered by Reported Assets</b>				
					<b>(A)</b>	<b>(B)</b>	<b>(C)</b>		
2011	\$ 228,275	\$ 546,553	\$ 297,316	\$ 969,636	100%	100%	66%		
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%		

*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, 2020**

**SECTION VI – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION**

**Table VI-2  
SCHEDULE OF FUNDING PROGRESS**  
(dollars in thousands)

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets</b>	<b>Actuarial Liability (AL)</b>	<b>Unfunded AL</b>	<b>Funded Ratio</b>	<b>Covered Payroll</b>	<b>Unfunded AL as a % of Covered Payroll</b>
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%

*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, 2020**

**SECTION VI – COMPREHENSIVE ANNUAL 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%	

*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, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

The data for this valuation was provided by the Tulare County staff as of June 30, 2020. 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.

<b>SUMMARY OF TOTAL ACTIVE MEMBERSHIP</b>			
	<b>June 30, 2019</b>	<b>June 30, 2020</b>	<b>Change</b>
<b>Total (General &amp; Safety)</b>			
Count	4,619	4,605	-0.3%
Average Age	41.8	41.9	0.4%
Average Service	9.7	9.9	2.1%
Annual Projected Payroll	\$ 272,415,593	\$ 284,272,002	4.4%
Average Annual Pay	\$ 58,977	\$ 61,731	4.7%

<b>SUMMARY OF INACTIVE MEMBERSHIP*</b>			
	<b>June 30, 2019</b>	<b>June 30, 2020</b>	<b>Change</b>
<b>General</b>			
Count	1,774	1,852	4.4%
Average Age	43.9	43.7	-0.4%
Total Contribution Balance	\$ 41,393,272	\$ 43,402,585	4.9%
Average Contribution Balance	\$ 23,333	\$ 23,436	0.4%
<b>Safety</b>			
Count	308	331	7.5%
Average Age	39.5	39.2	-0.7%
Total Contribution Balance	\$ 11,151,367	\$ 12,835,551	15.1%
Average Contribution Balance	\$ 36,206	\$ 38,778	7.1%
<b>Total</b>			
Count	2,082	2,183	4.9%
Average Age	43.3	43.1	-0.5%
Total Contribution Balance	\$ 52,544,639	\$ 56,238,136	7.0%
Average Contribution Balance	\$ 25,238	\$ 25,762	2.1%

\*Includes unclaimed accounts.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

SUMMARY OF RETIRED MEMBERSHIP				
	June 30, 2019	June 30, 2020	Change	
<b>General</b>				
Count	2,749	2,815		2.4%
Average Age	70.9	71.2		0.4%
Total Annual Allowance	\$ 59,081,180	\$ 62,618,882		6.0%
Average Annual Allowance	\$ 21,492	\$ 22,245		3.5%
<b>Safety</b>				
Count	563	593		5.3%
Average Age	64.9	64.9		-0.1%
Total Annual Allowance	\$ 19,889,881	\$ 21,793,355		9.6%
Average Annual Allowance	\$ 35,328	\$ 36,751		4.0%
<b>Total</b>				
Count	3,312	3,408		2.9%
Average Age	69.9	70.1		0.3%
Total Annual Allowance	\$ 78,971,061	\$ 84,412,237		6.9%
Average Annual Allowance	\$ 23,844	\$ 24,769		3.9%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

SUMMARY OF ACTIVE GENERAL MEMBERSHIP				
	June 30, 2019		June 30, 2020	Change
General Tier 1				
Count	13		8	-38.5%
Average Age	65.1		67.6	3.9%
Average Service	34.8		36.5	4.7%
Annual Projected Payroll	\$	1,007,983	\$ 651,897	-35.3%
Average Annual Pay	\$	77,537	\$ 81,487	5.1%
General Tier 2 & 3				
Count	2,009		1,880	-6.4%
Average Age	47.9		48.5	1.2%
Average Service	15.0		15.9	5.8%
Annual Projected Payroll	\$	126,303,821	\$ 123,014,040	-2.6%
Average Annual Pay	\$	62,869	\$ 65,433	4.1%
General Tier 4				
Count	1,704		1,848	8.5%
Average Age	35.9		36.5	1.8%
Average Service	2.9		3.4	16.7%
Annual Projected Payroll	\$	82,281,048	\$ 94,939,152	15.4%
Average Annual Pay	\$	48,287	\$ 51,374	6.4%
General Total				
Count	3,726		3,736	0.3%
Average Age	42.5		42.6	0.4%
Average Service	9.5		9.7	2.1%
Annual Projected Payroll	\$	209,592,852	\$ 218,605,089	4.3%
Average Annual Pay	\$	56,251	\$ 58,513	4.0%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>SUMMARY OF ACTIVE SAFETY MEMBERSHIP</b>				
	<b>June 30, 2019</b>		<b>June 30, 2020</b>	<b>Change</b>
<b>Safety Tier 1</b>				
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%
<b>Safety Tier 2 &amp; 3</b>				
Count		550	503	-8.5%
Average Age		43.3	44.0	1.6%
Average Service		15.1	15.7	4.5%
Annual Projected Payroll	\$	42,313,399	\$ 41,496,639	-1.9%
Average Annual Pay	\$	76,933	\$ 82,498	7.2%
<b>Safety Tier 4</b>				
Count		343	366	6.7%
Average Age		31.4	31.9	1.7%
Average Service		2.7	3.3	22.3%
Annual Projected Payroll	\$	20,509,342	\$ 24,170,274	17.9%
Average Annual Pay	\$	59,794	\$ 66,039	10.4%
<b>Safety Total</b>				
Count		893	869	-2.7%
Average Age		38.7	38.9	0.5%
Average Service		10.3	10.5	1.8%
Annual Projected Payroll	\$	62,822,741	\$ 65,666,913	4.5%
Average Annual Pay	\$	70,350	\$ 75,566	7.4%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

SUMMARY OF RETIRED GENERAL MEMBERSHIP				
	June 30, 2019		June 30, 2020	Change
Service Retirement				
Count	2,188		2,226	1.7%
Average Age	70.9		71.2	0.4%
Total Annual Allowance	\$	49,865,736	\$ 52,711,040	5.7%
Average Annual Allowance	\$	22,791	\$ 23,680	3.9%
Disability				
Count	205		207	1.0%
Average Age	64.1		64.5	0.6%
Total Annual Allowance	\$	4,304,481	\$ 4,426,622	2.8%
Average Annual Allowance	\$	20,997	\$ 21,385	1.8%
Beneficiaries				
Count	356		382	7.3%
Average Age	74.9		74.9	0.0%
Total Annual Allowance	\$	4,910,963	\$ 5,481,220	11.6%
Average Annual Allowance	\$	13,795	\$ 14,349	4.0%
Total				
Count	2,749		2,815	2.4%
Average Age	70.9		71.2	0.4%
Total Annual Allowance	\$	59,081,180	\$ 62,618,882	6.0%
Average Annual Allowance	\$	21,492	\$ 22,245	3.5%



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX A – MEMBERSHIP INFORMATION**

SUMMARY OF RETIRED SAFETY MEMBERSHIP				
	June 30, 2019	June 30, 2020	Change	
Service Retirement				
Count	331	348	5.1%	
Average Age	66.3	66.2	-0.1%	
Total Annual Allowance	\$ 13,600,293	\$ 14,780,132	8.7%	
Average Annual Allowance	\$ 41,088	\$ 42,472	3.4%	
Disability				
Count	130	140	7.7%	
Average Age	59.2	59.4	0.3%	
Total Annual Allowance	\$ 4,020,469	\$ 4,542,057	13.0%	
Average Annual Allowance	\$ 30,927	\$ 32,443	4.9%	
Beneficiaries				
Count	102	105	2.9%	
Average Age	67.8	67.7	-0.3%	
Total Annual Allowance	\$ 2,269,119	\$ 2,471,166	8.9%	
Average Annual Allowance	\$ 22,246	\$ 23,535	5.8%	
Total				
Count	563	593	5.3%	
Average Age	64.9	64.9	-0.1%	
Total Annual Allowance	\$ 19,889,881	\$ 21,793,355	9.6%	
Average Annual Allowance	\$ 35,328	\$ 36,751	4.0%	

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

**AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY  
OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2020  
TIER 1**

Attained Age	YEARS OF CREDITED SERVICE																					
	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	1	52,317	1	52,317
65 to 69	0	0	0	0	1	117,189	0	0	0	0	0	0	0	0	1	75,386	1	48,427	2	64,399	5	73,960
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	45,626	1	184,155	2	114,891
Total	0	0	0	0	1	117,189	0	0	0	0	0	0	0	0	1	75,386	2	47,027	4	91,317	8	81,487

**AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY  
OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2020  
TIER 2 & 3**

Attained Age	YEARS OF CREDITED SERVICE																					
	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	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	11	44,858	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	44,858
30 to 34	0	0	3	63,102	70	58,602	46	56,125	0	0	0	0	0	0	0	0	0	0	0	0	119	57,758
35 to 39	0	0	8	78,743	103	68,326	139	67,217	32	63,097	2	55,010	0	0	0	0	0	0	0	0	284	67,394
40 to 44	0	0	10	69,797	60	59,422	135	63,265	109	65,548	34	66,418	1	68,936	0	0	0	0	0	0	349	63,828
45 to 49	1	137,673	4	65,884	45	69,795	79	65,071	100	67,995	71	59,370	11	74,961	0	0	0	0	0	0	311	65,987
50 to 54	0	0	3	61,141	36	56,142	61	61,657	71	64,257	63	63,439	34	64,337	5	61,182	0	0	0	0	273	62,337
55 to 59	0	0	1	134,025	27	55,961	66	69,078	58	68,501	59	60,922	32	65,189	17	90,890	5	69,569	0	0	265	66,983
60 to 64	0	0	0	0	16	74,413	39	69,827	47	59,031	46	65,008	23	62,479	23	86,150	7	67,556	2	72,188	203	67,559
65 to 69	0	0	0	0	10	64,383	15	82,513	10	93,579	9	81,536	3	71,265	2	101,520	0	0	0	0	49	80,979
70 & up	0	0	0	0	3	172,155	4	69,683	5	40,541	3	72,401	0	0	0	0	1	42,724	0	0	16	78,614
Total	1	137,673	29	72,352	381	63,575	584	65,353	432	65,768	287	63,122	104	65,556	47	85,862	13	66,420	2	72,188	1,880	65,433

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2020 TIER 4																						
Attained Age	YEARS OF CREDITED SERVICE																					
	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	33	\$ 36,984	62	\$ 40,004	2	\$ 45,855	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	97	\$ 39,097
25 to 29	110	43,912	284	46,540	51	48,521	0	0	0	0	0	0	0	0	0	0	0	0	0	0	445	46,118
30 to 34	64	47,483	283	52,192	133	60,076	0	0	0	0	0	0	0	0	0	0	0	0	0	0	480	53,749
35 to 39	47	49,110	176	54,995	91	56,352	0	0	0	0	0	0	0	0	0	0	0	0	0	0	314	54,507
40 to 44	24	48,237	102	54,903	41	59,652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167	55,111
45 to 49	19	44,865	51	48,141	41	57,356	0	0	0	0	0	0	0	0	0	0	0	0	0	0	111	50,984
50 to 54	14	57,966	53	50,927	33	57,669	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	54,138
55 to 59	10	47,387	31	58,641	26	61,599	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	58,109
60 to 64	6	38,078	31	49,932	17	59,171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	51,524
65 to 69	1	44,457	5	82,069	5	45,757	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	62,144
70 & up	0	0	0	0	2	36,955	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	36,955
Total	328	45,629	1,078	50,721	442	57,229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,848	51,374

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

**AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY  
OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2020**

**TIER 1**

Attained Age	YEARS OF CREDITED SERVICE																					
	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, 2020**

**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	
	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	3	72,294	0	0	0	0	0	0	0	0	0	0	0	0	3	72,294
30 to 34	0	0	1	78,901	28	71,482	16	75,650	0	0	0	0	0	0	0	0	0	0	45	73,129
35 to 39	1	67,613	2	79,926	30	73,984	78	78,493	18	82,127	0	0	0	0	0	0	0	0	129	77,889
40 to 44	0	0	2	87,590	14	77,900	58	81,853	31	82,452	8	90,768	0	0	0	0	0	0	113	82,260
45 to 49	0	0	0	0	10	71,988	29	81,681	28	82,977	31	95,384	4	117,004	0	0	0	0	102	86,636
50 to 54	0	0	0	0	2	63,452	9	76,850	13	80,333	23	92,474	19	92,931	6	130,964	0	0	72	90,851
55 to 59	0	0	0	0	2	94,124	10	86,747	4	81,602	7	85,798	3	66,396	4	108,432	0	0	30	87,188
60 to 64	0	0	0	0	0	0	1	90,944	3	73,648	3	64,676	0	0	1	74,596	0	0	8	72,564
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0	1	71,556	0	0	0	0	1	71,556
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	67,613	5	82,786	89	73,748	201	80,095	97	81,952	72	91,730	27	92,758	11	117,646	0	0	503	82,498

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2020 TIER 4																					
Attained Age	YEARS OF CREDITED SERVICE																				
	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	\$ 52,908	19	\$ 63,821	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	35      \$ 58,832
25 to 29	21	59,026	105	63,329	16	71,735	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142      63,640
30 to 34	9	55,138	61	66,720	37	69,922	0	0	0	0	0	0	0	0	0	0	0	0	0	0	107      66,853
35 to 39	1	44,472	26	69,471	16	70,852	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43      69,403
40 to 44	0	0	5	66,397	8	72,664	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13      70,254
45 to 49	0	0	6	64,528	6	75,514	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12      70,021
50 to 54	1	76,484	2	97,437	1	73,047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4      86,101
55 to 59	1	75,374	4	73,211	3	101,551	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8      84,109
60 to 64	0	0	1	79,114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1      79,114
65 to 69	0	0	0	0	1	86,860	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1      86,860
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	49	56,707	229	65,608	88	72,357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	366      66,039

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

Longevity and Promotion Component	2.40%
Wage Inflation Component	<u>3.00%</u>
Total	5.40%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

AGE DISTRIBUTION OF TOTAL INACTIVE PARTICIPANTS PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2020								
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	92	\$ 2,636,980	60	\$ 861,112	36	\$ 449,061	188	\$ 3,947,153
55-59	46	1,146,911	211	5,578,939	22	431,956	279	7,157,806
60-64	50	1,334,308	391	9,685,579	42	567,210	483	11,587,097
65-69	63	1,508,488	580	16,870,339	66	1,264,985	709	19,643,812
70-74	54	1,394,145	628	17,632,605	77	1,324,142	759	20,350,892
75-79	22	531,739	389	10,295,004	86	1,453,248	497	12,279,991
80 & Over	20	416,108	315	6,567,594	158	2,461,784	493	9,445,486
<b>Total</b>	<b>347</b>	<b>\$ 8,968,679</b>	<b>2,574</b>	<b>\$ 67,491,172</b>	<b>487</b>	<b>\$ 7,952,386</b>	<b>3,408</b>	<b>\$ 84,412,237</b>

AGE DISTRIBUTION OF INACTIVE GENERAL PARTICIPANTS PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2020								
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	\$ 679,687	36	\$ 317,675	21	\$ 174,932	91	\$ 1,172,294
55-59	31	654,804	138	2,408,026	13	214,006	182	3,276,836
60-64	30	733,615	337	7,664,919	29	264,938	396	8,663,472
65-69	47	949,987	498	13,267,680	46	684,910	591	14,902,577
70-74	40	930,562	568	14,397,922	69	1,074,412	677	16,402,896
75-79	16	320,833	345	8,513,417	69	1,112,712	430	9,946,962
80 & Over	9	157,134	304	6,141,402	135	1,955,309	448	8,253,845
<b>Total</b>	<b>207</b>	<b>\$ 4,426,622</b>	<b>2,226</b>	<b>\$ 52,711,041</b>	<b>382</b>	<b>\$ 5,481,219</b>	<b>2,815</b>	<b>\$ 62,618,882</b>

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX A – MEMBERSHIP INFORMATION**

AGE DISTRIBUTION OF INACTIVE SAFETY PARTICIPANTS PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2020								
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	58	\$ 1,957,293	24	\$ 543,437	15	\$ 274,129	97	\$ 2,774,859
55-59	15	492,107	73	3,170,913	9	217,950	97	3,880,970
60-64	20	600,693	54	2,020,660	13	302,272	87	2,923,625
65-69	16	558,501	82	3,602,659	20	580,075	118	4,741,235
70-74	14	463,583	60	3,234,683	8	249,730	82	3,947,996
75-79	6	210,906	44	1,781,587	17	340,536	67	2,333,029
80 & Over	11	258,974	11	426,192	23	506,475	45	1,191,641
<b>Total</b>	<b>140</b>	<b>\$ 4,542,057</b>	<b>348</b>	<b>\$ 14,780,131</b>	<b>105</b>	<b>\$ 2,471,167</b>	<b>593</b>	<b>\$ 21,793,355</b>

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**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	
2010	2,099	170	\$ 4,343,830	88	\$ 334,218	2,181	\$ 41,495,219	10.70%	\$ 19,026	
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	

*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, 2020**

**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
<b>June 30, 2018</b>	<b>4,619</b>	<b>408</b>	<b>662</b>	<b>128</b>	<b>207</b>	<b>2,519</b>	<b>413</b>	<b>996</b>	<b>45</b>	<b>16</b>	<b>10,013</b>
New Entrants	437										437
Rehires	8	(3)	(2)					(3)			-
Duty Disabilities	(12)	(2)			14						-
Ordinary Disabilities	(1)			1							-
Retirements	(99)	(16)	(22)			137					-
Vested Terminations	(76)	77	(1)								-
Non-Vested Terminations and Death without beneficiary	(169)	(2)	(5)	(2)		(38)		171		(1)	(46)
Death with beneficiary	(1)		(1)	(3)	(1)	(37)	43				-
Transfers	(20)	(1)	26					(5)			-
Beneficiary Deaths							(21)				(21)
Domestic Relations Orders									6		6
Deferred Domestic Relations Orders										4	4
Withdrawals Paid	(81)	(15)	(3)					(89)		(3)	(191)
Data Corrections		2		(1)	4	(7)	1	(5)			(6)
<b>June 30, 2019</b>	<b>4,605</b>	<b>448</b>	<b>654</b>	<b>123</b>	<b>224</b>	<b>2,574</b>	<b>436</b>	<b>1,065</b>	<b>51</b>	<b>16</b>	<b>10,196</b>

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**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
<b>June 30, 2018</b>	<b>3,726</b>	<b>347</b>	<b>549</b>	<b>109</b>	<b>96</b>	<b>2,188</b>	<b>330</b>	<b>869</b>	<b>26</b>	<b>9</b>	<b>8,249</b>
New Entrants	380										380
Rehires	6	(2)	(2)					(2)			-
Duty Disabilities	(4)	(2)			6						-
Ordinary Disabilities	(1)			1							-
Retirements	(78)	(14)	(17)			109					-
Vested Terminations	(55)	55									-
Non-Vested Terminations and Death without beneficiary	(144)	(2)	(3)	(2)		(34)		146		(1)	(40)
Death with beneficiary	(1)		(1)	(3)		(33)	38				-
Transfers	(20)		19					(4)			(5)
Beneficiary Deaths							(17)				(17)
Domestic Relations Orders									5		5
Deferred Domestic Relations										1	1
Withdrawals Paid	(73)	(12)	(3)					(74)		(2)	(164)
Data Corrections		1				(4)		(3)			(6)
<b>June 30, 2019</b>	<b>3,736</b>	<b>371</b>	<b>542</b>	<b>105</b>	<b>102</b>	<b>2,226</b>	<b>351</b>	<b>932</b>	<b>31</b>	<b>7</b>	<b>8,403</b>

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**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
<b>June 30, 2018</b>	<b>893</b>	<b>61</b>	<b>113</b>	<b>19</b>	<b>111</b>	<b>331</b>	<b>83</b>	<b>127</b>	<b>19</b>	<b>7</b>	<b>1,764</b>
New Entrants	57										57
Rehires	2	(1)						(1)			-
Duty Disabilities	(8)				8						-
Ordinary Disabilities											-
Retirements	(21)	(2)	(5)			28					-
Vested Terminations	(21)	22	(1)								-
Non-Vested Terminations and Death without beneficiary	(25)		(2)			(4)		25			(6)
Death with beneficiary					(1)	(4)	5				-
Transfers		(1)	7					(1)			5
Beneficiary Deaths							(4)				(4)
Domestic Relations Orders									1		1
Deferred Domestic Relations										3	3
Withdrawals Paid	(8)	(3)						(15)		(1)	(27)
Data Corrections		1		(1)	4	(3)	1	(2)			-
<b>June 30, 2019</b>	<b>869</b>	<b>77</b>	<b>112</b>	<b>18</b>	<b>122</b>	<b>348</b>	<b>85</b>	<b>133</b>	<b>20</b>	<b>9</b>	<b>1,793</b>

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

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

The methods and assumptions used in the actuarial valuation as of June 30, 2020 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.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

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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.

**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 \$126,291 for calendar year 2020 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%

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**7. Increases in Pay**

Wage inflation component: 3.00% (this assumption is also used to project the compensation limit for PEPRA members)

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.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX B – STATEMENT OF CURRENT ACTUARIAL  
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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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**APPENDIX B – STATEMENT OF CURRENT ACTUARIAL  
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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, 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, beneficiaries, 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, 2020 as disclosed in this actuarial valuation. The projections assume continuation of the plan provisions and actuarial assumptions in effect as of June 30, 2020 and do not reflect the impact of any changes in benefits or actuarial assumptions that may be adopted after June 30, 2020.

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.

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

**18. Changes in Assumptions**

Based on the results of Cheiron's July 1, 2017 – June 30, 2020 experience study, the Board adopted the following changes to the economic and demographic assumptions:

- The discount rate decreased from 7.25% to 7.00%.
- The inflation assumption decreased from 3.00% to 2.75%.
- The COLA assumption decreased from 2.70% to 2.60% for Tier 1 members.
- The percent married decreased from 85% to 80% for General males, 65% to 60% for General females, 90% to 85% for Safety males, and 70% to 65% for Safety females.
- Merit-based pay increases were slightly decreased for General members with longer service, modest changes were made for Safety at most service points.
- Termination rates were adjusted to better reflect experience.
- The deferred vested termination rates increased for female General members.
- The deferred retirement age increased from 53 to 55 for Safety members.
- The reciprocal transfer rate decreased from 65% to 60% for General members.
- Retirement rates were adjusted to better reflect experience for Safety members with less than 20 years of service.
- The adjustment to the base mortality for healthy General males decreased from 112.1% to 102.2%.
- The mortality improvement scale changed from MP-2016 to MP-2019 for all members.
- A load was added to service retirement benefits for active members for anticipated conversions of sick leave for retirement service credit.

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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, 2020. 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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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

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.

	<b>Tier 1</b>	<b>Tier 2-3</b>
2019 Actual	49.89% (General) 68.45% (Safety)	22.02% (General) 28.41% (Safety)
2020 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.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

***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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**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 General				Safety	
	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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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**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 to the schedule on the following page:

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)

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**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)

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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)  $50\% \times$  Final Compensation. (31787)

A lump sum is payable to an eligible survivor equal to  $1/12 \times$  final 12 months' Salary  $\times$  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  $60\% \times$  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

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

on changes in the average annual Consumer Price Index (CPI), rounded to the nearest ½ of 1%. (31870, 31870.1)

**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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**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)

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**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
2019 Actual	49.89% (General) 68.45% (Safety)	22.02% (General) 28.41% (Safety)
2020 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**

**2020 Member Contribution Rates (for fiscal year ending 2022)**

	General Tier 1		General Tiers 2 and 3		Safety Tier 1		Safety Tiers 2 and 3		Tier 4 Members	
Entry Age	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, 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									

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

The tables on the next six pages show the 2020 member contribution rates split into the Basic and COLA components, by tier.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

Entry Age	General 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	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%
<b>Assumptions:</b>						
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, 2020**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

General Tiers 2 and 3						
Entry Age	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%
<b>Assumptions:</b>						
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, 2020**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

General Tier 4			
Entry Age	Basic Rate	COLA Rate	Total Rate
16	3.44%	0.66%	4.43%
17	3.44%	0.66%	4.43%
18	3.44%	0.66%	4.43%
19	3.44%	0.66%	4.43%
20	3.44%	0.66%	4.43%
21	3.61%	0.70%	4.67%
22	3.78%	0.75%	4.92%
23	3.95%	0.78%	5.18%
24	4.13%	0.81%	5.43%
25	4.31%	0.85%	5.69%
26	4.48%	0.89%	5.91%
27	4.66%	0.92%	6.14%
28	4.84%	0.95%	6.36%
29	5.02%	0.99%	6.58%
30	5.20%	1.03%	6.81%
31	5.38%	1.06%	7.02%
32	5.56%	1.09%	7.23%
33	5.75%	1.12%	7.45%
34	5.94%	1.16%	7.67%
35	6.13%	1.20%	7.89%
36	6.34%	1.23%	8.13%
37	6.55%	1.27%	8.37%
38	6.77%	1.31%	8.63%
39	6.99%	1.35%	8.89%
40	7.20%	1.40%	9.14%
41	7.42%	1.44%	9.41%
42	7.64%	1.48%	9.67%
43	7.89%	1.52%	10.00%
44	8.13%	1.58%	10.34%
45	8.37%	1.63%	10.68%
46	8.67%	1.69%	11.10%
47	8.96%	1.76%	11.52%
48	9.23%	1.79%	11.86%
49	9.48%	1.83%	12.20%
50	9.73%	1.87%	12.53%
51	9.99%	1.90%	12.87%
52	10.24%	1.92%	13.20%
53	10.48%	1.96%	13.52%
54	10.71%	1.98%	13.81%
55	10.90%	2.00%	14.05%
56	11.12%	2.00%	14.30%
57	11.30%	2.01%	14.50%
58	11.46%	2.01%	14.66%
59	11.56%	2.00%	14.73%
<b>Assumptions:</b>			
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, 2020**

**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, 2020**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

Safety Tiers 2 and 3						
Entry Age	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  
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**APPENDIX E – MEMBER CONTRIBUTION RATES**

Safety Tier 4			
Entry Age	Basic Rate	COLA Rate	Total Rate
16	7.29%	1.67%	9.60%
17	7.29%	1.67%	9.60%
18	7.29%	1.67%	9.60%
19	7.29%	1.67%	9.60%
20	7.29%	1.67%	9.60%
21	7.58%	1.73%	9.98%
22	7.86%	1.80%	10.36%
23	8.15%	1.87%	10.75%
24	8.45%	1.94%	11.14%
25	8.76%	2.00%	11.53%
26	9.05%	2.07%	11.90%
27	9.35%	2.14%	12.26%
28	9.65%	2.21%	12.63%
29	9.95%	2.27%	12.98%
30	10.25%	2.32%	13.33%
31	10.57%	2.40%	13.71%
32	10.89%	2.47%	14.09%
33	11.20%	2.55%	14.46%
34	11.53%	2.62%	14.83%
35	11.87%	2.70%	15.22%
36	12.17%	2.76%	15.58%
37	12.46%	2.82%	15.93%
38	12.76%	2.87%	16.28%
39	13.07%	2.94%	16.66%
40	13.41%	3.00%	17.06%
41	13.72%	3.07%	17.44%
42	14.06%	3.14%	17.85%
43	14.44%	3.21%	18.31%
44	14.83%	3.28%	18.79%
45	15.22%	3.36%	19.26%
46	15.55%	3.40%	19.66%
47	15.89%	3.43%	20.07%
48	16.22%	3.46%	20.48%
49	16.55%	3.50%	20.91%
50	16.55%	3.50%	20.91%
51	16.55%	3.50%	20.91%
52	16.55%	3.50%	20.91%
53	16.55%	3.50%	20.91%
54	16.55%	3.50%	20.91%
55	16.55%	3.50%	20.91%
56	16.55%	3.50%	20.91%
57	16.55%	3.50%	20.91%
58	16.55%	3.50%	20.91%
59	16.55%	3.50%	20.91%
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, 2020**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

**2018 Member Contribution Rates (for fiscal year ending 2020)**

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	2.47%	3.71%	3.89%	5.84%	4.06%	6.09%	5.99%	8.98%	4.11%	8.92%
17	2.53%	3.80%	3.99%	5.98%	4.06%	6.09%	5.99%	8.98%	4.11%	8.92%
18	2.59%	3.89%	4.08%	6.12%	4.06%	6.09%	5.99%	8.98%	4.11%	8.92%
19	2.65%	3.98%	4.17%	6.26%	4.06%	6.09%	5.99%	8.98%	4.11%	8.92%
20	2.71%	4.07%	4.27%	6.40%	4.06%	6.09%	5.99%	8.98%	4.11%	8.92%
21	2.77%	4.16%	4.37%	6.55%	4.15%	6.23%	6.12%	9.18%	4.32%	9.27%
22	2.84%	4.26%	4.47%	6.70%	4.25%	6.37%	6.26%	9.39%	4.53%	9.62%
23	2.91%	4.36%	4.57%	6.86%	4.34%	6.51%	6.40%	9.60%	4.74%	9.97%
24	2.97%	4.46%	4.67%	7.01%	4.44%	6.66%	6.55%	9.82%	4.95%	10.34%
25	3.04%	4.56%	4.79%	7.18%	4.54%	6.81%	6.69%	10.04%	5.17%	10.71%
26	3.11%	4.66%	4.89%	7.34%	4.65%	6.97%	6.85%	10.27%	5.37%	11.07%
27	3.18%	4.77%	5.01%	7.51%	4.75%	7.13%	7.00%	10.50%	5.58%	11.43%
28	3.25%	4.88%	5.12%	7.68%	4.86%	7.29%	7.16%	10.74%	5.80%	11.80%
29	3.33%	4.99%	5.24%	7.86%	4.97%	7.46%	7.33%	10.99%	6.01%	12.15%
30	3.41%	5.11%	5.36%	8.04%	5.09%	7.63%	7.50%	11.25%	6.23%	12.51%
31	3.48%	5.22%	5.48%	8.22%	5.21%	7.81%	7.67%	11.51%	6.44%	12.90%
32	3.57%	5.35%	5.61%	8.41%	5.33%	8.00%	7.86%	11.79%	6.66%	13.29%
33	3.65%	5.47%	5.73%	8.59%	5.46%	8.19%	8.05%	12.07%	6.88%	13.68%
34	3.73%	5.60%	5.84%	8.76%	5.60%	8.40%	8.25%	12.37%	7.11%	14.08%
35	3.80%	5.70%	5.95%	8.93%	5.74%	8.61%	8.46%	12.69%	7.34%	14.50%
36	3.87%	5.80%	6.06%	9.09%	5.89%	8.84%	8.67%	13.00%	7.58%	14.85%
37	3.94%	5.91%	6.17%	9.26%	6.05%	9.08%	8.86%	13.29%	7.83%	15.20%
38	4.01%	6.02%	6.29%	9.43%	6.19%	9.29%	9.03%	13.55%	8.09%	15.55%
39	4.09%	6.13%	6.40%	9.60%	6.32%	9.48%	9.19%	13.79%	8.35%	15.93%
40	4.16%	6.24%	6.52%	9.78%	6.43%	9.65%	9.34%	14.01%	8.61%	16.33%
41	4.24%	6.36%	6.64%	9.96%	6.55%	9.83%	9.46%	14.19%	8.87%	16.71%
42	4.32%	6.48%	6.77%	10.15%	6.65%	9.97%	9.55%	14.32%	9.13%	17.11%
43	4.40%	6.60%	6.89%	10.34%	6.73%	10.09%	9.59%	14.39%	9.42%	17.56%
44	4.49%	6.73%	7.03%	10.54%	6.75%	10.13%	9.61%	14.42%	9.71%	18.02%
45	4.57%	6.86%	7.16%	10.74%	6.78%	10.17%	9.61%	14.42%	10.01%	18.49%
46	4.66%	6.99%	7.30%	10.95%	6.79%	10.19%	9.58%	14.37%	10.37%	18.86%
47	4.75%	7.13%	7.44%	11.16%	6.79%	10.19%	9.48%	14.22%	10.73%	19.22%
48	4.85%	7.27%	7.59%	11.39%	6.76%	10.14%	9.80%	14.70%	11.03%	19.58%
49	4.95%	7.43%	7.75%	11.63%	6.65%	9.97%	10.13%	15.20%	11.33%	19.95%
50	5.06%	7.59%	7.91%	11.87%	6.65%	9.97%	10.13%	15.20%	11.61%	19.95%
51	5.17%	7.76%	8.07%	12.10%	6.65%	9.97%	10.13%	15.20%	11.90%	19.95%
52	5.28%	7.92%	8.21%	12.31%	6.65%	9.97%	10.13%	15.20%	12.17%	19.95%
53	5.38%	8.07%	8.33%	12.49%	6.65%	9.97%	10.13%	15.20%	12.45%	19.95%
54	5.49%	8.23%	8.41%	12.62%	6.65%	9.97%	10.13%	15.20%	12.70%	19.95%
55	5.56%	8.34%	8.43%	12.65%	6.65%	9.97%	10.13%	15.20%	12.91%	19.95%
56	5.60%	8.40%	8.40%	12.60%	6.65%	9.97%	10.13%	15.20%	13.14%	19.95%
57	5.59%	8.38%	8.29%	12.44%	6.65%	9.97%	10.13%	15.20%	13.32%	19.95%
58	5.54%	8.31%	8.57%	12.86%	6.65%	9.97%	10.13%	15.20%	13.48%	19.95%
59	5.45%	8.17%	8.87%	13.31%	6.65%	9.97%	10.13%	15.20%	13.57%	19.95%
<b>Assumptions:</b>										
Interest:	7.25%		7.25%		7.25%		7.25%		7.25%	
Salary:	3.00%		3.00%		3.00%		3.00%		3.00%	
COLA:	2.70%		2.00%		2.70%		2.00%		2.00%	
Mortality:	For General: Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2016, in 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 Pro 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, 2020**

**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, 2020 actuarial valuation.

**General - Male**

Demographic Assumption Rates - Age					
Age	Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**	
		Ordinary	Service		
25	0.000	0.000584	0.000000	0.0800	
30	0.000	0.000592	0.000000	0.0800	
35	0.000	0.000706	0.000000	0.0800	
40	0.000	0.00079	0.000000	0.0800	
45	0.000	0.001065	0.000000	0.0800	
50	0.050	0.00169	0.000000	0.0500	
55	0.060	0.002804	0.000000	0.0500	
60	0.150	0.004909	0.000000	0.0500	
65	0.350	0.008661	0.000000	0.0000	
70	0.350	0.013864	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**

Demographic Assumption Rates - Age					
Age	Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**	
		Ordinary	Service		
25	0.000	0.000220	0.000000	0.0800	
30	0.000	0.000292	0.000000	0.0800	
35	0.000	0.000384	0.000000	0.0800	
40	0.000	0.000490	0.000000	0.0800	
45	0.000	0.000726	0.000000	0.0800	
50	0.050	0.001162	0.000000	0.0500	
55	0.060	0.001843	0.000000	0.0500	
60	0.150	0.002782	0.000000	0.0500	
65	0.350	0.004014	0.000000	0.0000	
70	0.350	0.006504	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, 2020**

**APPENDIX F – SUPPLEMENTAL TABLES FOR REPORTING PURPOSES**

**Safety - Male**

Demographic Assumption Rates - Age					
Age		Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**
			Ordinary	Service	
	25	0.000	0.000448	0.000324	0.0700
	30	0.000	0.000455	0.000329	0.0700
	35	0.000	0.000467	0.000467	0.0700
	40	0.000	0.000523	0.000523	0.0700
	45	0.070	0.000676	0.000733	0.0600
	50	0.070	0.000939	0.001297	0.0600
	55	0.100	0.001484	0.002226	0.0600
	60	0.200	0.002403	0.004092	0.0000
	65	0.400	0.004240	0.007220	0.0000
	70	1.000	0.006543	0.011140	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**

Demographic Assumption Rates - Age					
Age		Service Retirement Rate*	Mortality of Active Members Rate		Withdrawal (Termination) Rate**
			Ordinary	Service	
	25	0.000	0.000132	0.000096	0.0700
	30	0.000	0.000176	0.000127	0.0700
	35	0.000	0.000200	0.000200	0.0700
	40	0.000	0.000255	0.000255	0.0700
	45	0.070	0.000362	0.000392	0.0600
	50	0.070	0.000507	0.000700	0.0600
	55	0.100	0.000765	0.001148	0.0600
	60	0.200	0.001069	0.001821	0.0000
	65	0.400	0.001542	0.002626	0.0000
	70	1.000	0.002464	0.004195	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  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**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  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2020**

**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*