

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

### **Actuarial Valuation Report as of June 30, 2018**

**Produced by Cheiron**

**October 2018**

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October 31, 2018

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, 2018. 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.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. 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, MAAA  
Consulting Actuary

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**FOREWORD**

Cheiron has performed the actuarial valuation of the Tulare County Employees' Retirement Association as of June 30, 2018. 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 – Assets
  - Section III – Liabilities
  - Section IV – Contributions
  - Section V – 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.

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.



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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 2019-2020; 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, 2019. 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 were based on the experience studies presented by Cheiron on June 28, 2017 and September 27, 2017. There are no assumption changes for this valuation. The discount rate remains 7.25% and the mortality improvement projection scale remains MP-2016. A summary of the assumptions and methods used in the current valuation is shown in Appendix B.

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

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**SECTION I – EXECUTIVE SUMMARY**

**B. Key Findings of this Valuation**

The key results of the June 30, 2018 actuarial valuation are as follows:

- The average actuarially determined employer contribution rate increased from 12.98% of payroll to 13.51% of payroll. Information on the contribution rates and changes from last year to this year may be found in Tables I-4 and I-5. The largest factor affecting the employer contribution rate was an increase of 0.69% due to investment losses for the plan year ending June 30, 2018. On a Market Value of Assets basis, the Plan earned 7.4%, as compared to the prior year's 7.25% assumed return. However, on a smoothed (Actuarial Value of Assets) basis, the return was 5.6%. The rest of the change was due to a decrease of 0.15% in the employer contribution rate due to demographic gains, mostly due to the ongoing transition of the active population towards Tier 4 (PEPRA) members.
- 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 \$111.7 million as of June 30, 2017 to \$133.3 million as of June 30, 2018. The \$21.7 million increase in the UAL was primarily due to the impact of investment losses, which increased the UAL by \$23.7 million for the plan year ending June 30, 2018 but which was offset by \$2.0 million in other UAL changes. The remaining balance of the June 30, 2015 UAL is being amortized over 16 years and the remaining balances for each of the following 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 17 years). Finally, the UAL loss for the plan year ending June 30, 2018 is being amortized as a new 19-year layer. 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 92.9% last year to 92.0% as of June 30, 2018. On a market value basis, the funded ratio increased from 88.7% last year to 89.4% 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.
- During the 2017-2018 plan year, the actuarial liabilities of the System increased slightly more than expected. The liability losses were associated primarily with new entrants and COLA increases that were higher than expected. These losses were partially offset by salary increases that were lower than expected. In total, the liability losses increased the Actuarial Liability by \$0.3 million.
- Overall participant membership increased compared to last year, from 9,562 to 9,805. The total active population increased from 4,536 to 4,581 and total projected payroll increased from \$254,940,772 to \$262,713,817. The number of inactives increased from 1,954 to 2,032, while the number of retirees increased from 3,072 to 3,192.
- In Table III-4 of this valuation we have disclosed a liability of \$111.0 million associated with future transfers to the Supplemental Retiree Benefit Reserve (SRBR). This amount is based

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**SECTION I – EXECUTIVE SUMMARY**

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 7.25% assumption. It has not been reflected in the calculation of the employer contribution rate. Future SRBR transfers will result in asset losses that are funded through the Plan's amortization method.

We note that the present value of future transfers to the SRBR is higher than in the prior valuation, largely due to the additional pension obligation bond funds included for the plan year ending June 30, 2018. If the liability for future SRBR transfers were to be pre-funded, the employer contribution would be approximately \$9.3 million higher, or about 3.5% of pay. We have also disclosed a liability of \$98.4 million associated with the current SRBR balance, which is equal to the current balance 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 Table I-6 and the language which follows.

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**SECTION I – EXECUTIVE SUMMARY**

| Table I-1  |               |               |          |
|--|---------------|---------------|----------|
| Summary of Key Valuation Results - Funded Status<br>(in thousands) |               |               |          |
| Valuation Date   | June 30, 2017 | June 30, 2018 | % Change |
| Actuarial Liability  | \$ 1,573,406  | \$ 1,656,357  | 5.3%     |
| Market Value of Assets   | \$ 1,503,326  | \$ 1,587,476  | 5.6%     |
| Market Value of Assets (Excluding SRBR)                            | 1,395,122     | 1,480,284     | 6.1%     |
| Actuarial Value of Assets (Excluding SRBR)                         | 1,461,755     | 1,523,030     | 4.2%     |
| Unfunded Actuarial Liability (UAL)                                 |               |               |          |
| - based on Market Value of Assets                                  | \$ 178,284    | \$ 176,073    | -1.2%    |
| - based on Actuarial Value of Assets                               | 111,651       | 133,326       | 19.4%    |
| Funding Ratio - Market value basis                                 | 88.7%         | 89.4%         | 0.7%     |
| Funding Ratio - Actuarial value basis                              | 92.9%         | 92.0%         | -1.0%    |
| Expected Payroll   | \$ 254,941    | \$ 262,714    | 3.0%     |
| Asset Leverage Ratio   | 5.9           | 6.0           | 2.5%     |
| Actuarial Liability Leverage Ratio                                 | 6.2           | 6.3           | 2.2%     |
| Interest on UAL (MVA basis)  | \$ 12,926     | \$ 12,765     | -1.2%    |
| Interest Cost as Percent of Payroll                                | 5.1%          | 4.9%          | -0.2%    |

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**SECTION I – EXECUTIVE SUMMARY**

| Table I-2   |                |                |          |
|---|----------------|----------------|----------|
| Membership Total  |                |                |          |
| Item  | June 30, 2017  | June 30, 2018  | % Change |
| Actives   | 4,536          | 4,581          | 1.0%     |
| Inactives   | 1,954          | 2,032          | 4.0%     |
| Members Receiving Benefits  | 3,072          | 3,192          | 3.9%     |
| Total Members   | 9,562          | 9,805          | 2.5%     |
| Ratio of Retired Members to Active Members                        | 67.7%          | 69.7%          | 2.0%     |
| Active Member Projected Payroll<br>for FYE June 30, 2018 and 2019 | \$ 254,940,772 | \$ 262,713,817 | 3.0%     |
| Average Pay per Active  | \$ 56,204      | \$ 57,349      | 2.0%     |

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The Unfunded Actuarial Liability (UAL) for TCERA increased by \$21.7 million, from \$111.7 million to \$133.3 million. Table I-3 below presents the specific components of the change in the UAL.

Liability experience losses increased the UAL by \$0.3 million and asset losses – i.e., the smoothed investment return below last year's assumed rate of 7.25%, offset by slightly higher than anticipated contributions – increased the UAL by \$23.5 million (net of contribution experience). A detailed breakdown of the liability experience can be found in Table III-2.

| Table I-3  |                |
|--|----------------|
| Change in Unfunded Actuarial Liability           |                |
| Experience                                       | (in thousands) |
| Unfunded actuarial liability, 6/30/2017          | \$ 111,651     |
| Expected change in unfunded actuarial liability  | \$ (2,106)     |
| Increase due to investment loss                  | 23,696         |
| Decrease due to contributions more than expected | (201)          |
| Increase due to liability loss                   | 286            |
| Increase due to assumption changes               | 0              |
| Total change in unfunded actuarial liability     | \$ 21,675      |
| Unfunded actuarial liability, 6/30/2018          | \$ 133,326     |

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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 increased by 0.53% for the June 30, 2018 valuation. The net employer normal cost rate decreased by 0.16% and the UAL rate increased by 0.69%. The average employee rate decreased by 0.08%, from 8.42% to 8.34%.

Additional details on contributions may be found in Section IV, 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. However, 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<br>Summary Of Contributions                  |    |               |    |               |          |
|--|----|---------------|----|---------------|----------|
|  |    | FYE 2019      |    | FYE 2020      | Change   |
| <u>Contribution Rates</u>                              |    |               |    |               |          |
| Net Employer Contribution Rate                         |    | 12.98%        |    | 13.51%        | 0.53%    |
| Estimated Employee Contribution Rate                   |    | <u>8.42%</u>  |    | <u>8.34%</u>  | -0.08%   |
| Total Contribution Rate                                |    | 21.40%        |    | 21.85%        | 0.45%    |
| Estimated Net Employer Contributions<br>(in thousands) | \$ | 34,073        | \$ | 36,549        | \$ 2,476 |
| <u>Total Contribution Rate</u>                         |    |               |    |               |          |
| Estimated Employee Contribution Rate                   |    | 8.42%         |    | 8.34%         | -0.08%   |
| Employer Normal Cost Rate                              |    | <u>9.12%</u>  |    | <u>8.96%</u>  | -0.16%   |
| Total Normal Cost Rate                                 |    | 17.54%        |    | 17.30%        | -0.24%   |
| UAL Rate   |    |               |    |               |          |
| Interest on Market Value UAL                           |    | 5.07%         |    | 4.86%         | -0.21%   |
| Principal on Market Value UAL                          |    | <u>-1.21%</u> |    | <u>-0.31%</u> | 0.90%    |
| Total UAL Rate   |    | 3.86%         |    | 4.55%         | 0.69%    |
| Total Contribution Rate                                |    | 21.40%        |    | 21.85%        | 0.45%    |



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**SECTION I – EXECUTIVE SUMMARY**

Table I-5 summarizes the changes in the employer contribution rate. The largest change was an increase of 0.69% of pay due to lower than expected investment returns. In addition to asset losses, the only other significant change was a decrease in the employer normal cost rate due to the continuing phase-in of Tier 4 (PEPRA) members. In aggregate, the employer contribution rate increased from 12.98% for FYE 2019 to 13.51% for FYE 2020.

| Table I-5<br>Employer Contribution Reconciliation |             |              |        |
|---|-------------|--------------|--------|
| Item  | Normal Cost | Amortization | Total  |
| FYE 2019 Net Employer Contribution Rate           | 9.12%       | 3.86%        | 12.98% |
| Change due to asset loss                          | 0.00%       | 0.69%        | 0.69%  |
| Change due to contributions greater than expected | 0.00%       | -0.01%       | -0.01% |
| Change due to demographic gains and losses        | -0.16%      | 0.01%        | -0.15% |
| Change due to payroll less than expected          | 0.00%       | 0.00%        | 0.00%  |
| Change due to assumption changes                  | 0.00%       | 0.00%        | 0.00%  |
| Total Change in Employer Rate                     | -0.16%      | 0.69%        | 0.53%  |
| FYE 2020 Net Employer Contribution Rate           | 8.96%       | 4.55%        | 13.51% |



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**SECTION I – EXECUTIVE SUMMARY**

**Plan Risk**

Table I-6 below shows the ratio of assets to active member payroll for TCERA.

| Table I - 6                                |               |
|--|---------------|
| Asset to Payroll Ratio as of June 30, 2018 |               |
| Active Member Payroll                      | 262,713,817   |
| Assets (Market Value)                      | 1,587,476,000 |
| Ratio of Assets to Payroll                 | 6.04          |
| Ratio with 100% Funding                    | 6.30          |

One of the most important measures of a plan's risk is the ratio of plan assets to payroll. This ratio indicates the sensitivity of the plan to the returns earned on plan assets. We note in the table that assets are currently just over 6 times covered payroll for the Plan; as funding improves and the Plan reaches 100% funding, the ratio of assets to payroll will increase to about 6.3 times payroll, perhaps even higher depending on the Plan's future demographic makeup.

To appreciate the impact of the ratio of assets to payroll on 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 cost is nil, because the assets are so small. On the other hand, consider the situation for TCERA. Suppose TCERA's assets lose 10% of their value in a year. Since they were assumed to earn 7.25%, there is an actuarial loss of 17.25% of assets. Based on the current ratio of assets to payroll (604%), that means the loss in assets is about 104% of active payroll (604% of the 17.25% loss). There is only one source of funding to make up for this loss: contributions. Consequently, barring future offsetting investment gains, the loss must be made up with future contributions.

As the plan matures and becomes better funded, the ratio of assets to payroll will increase. When assets are 630% of pay, the 10% loss discussed above will translate to a loss of over 109% of payroll. Therefore, the Plan is likely to become more sensitive to market variation in the future than it is today.

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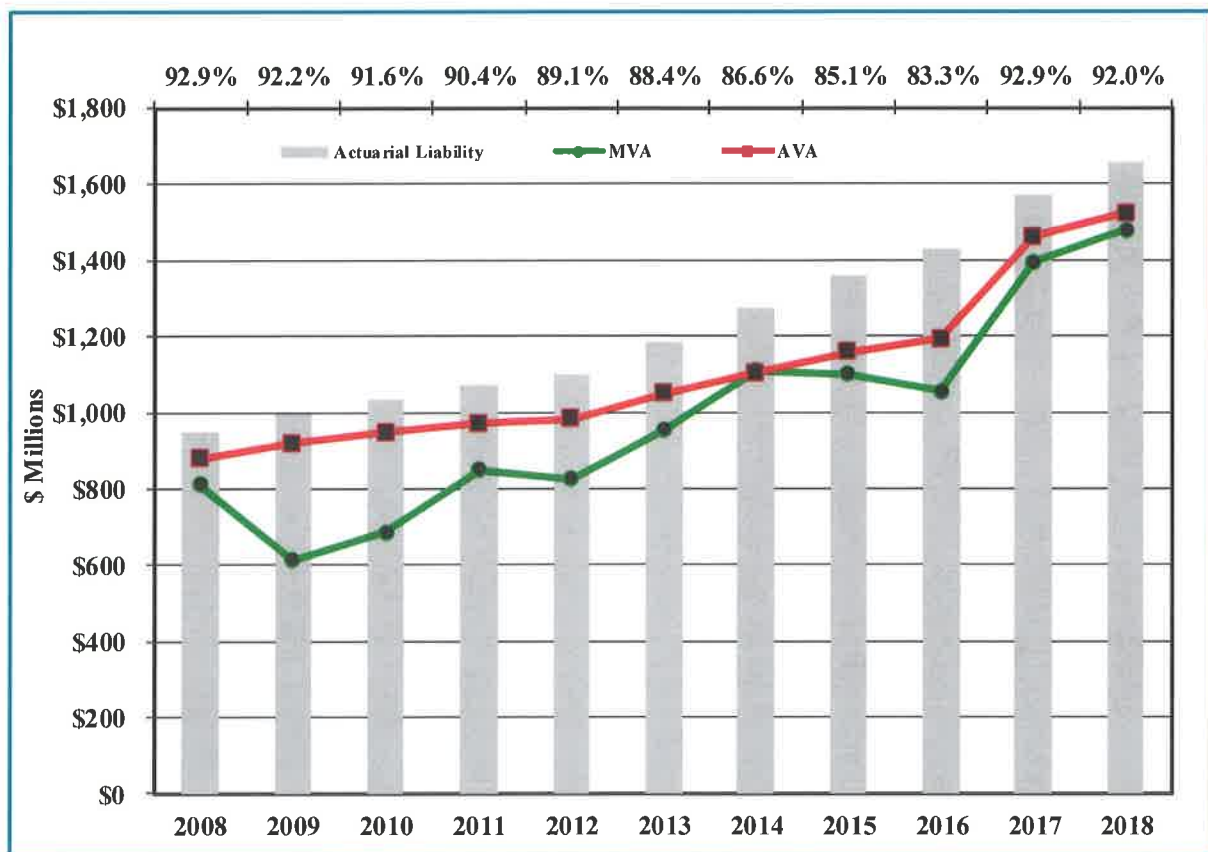
**SECTION I – EXECUTIVE SUMMARY**

**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**

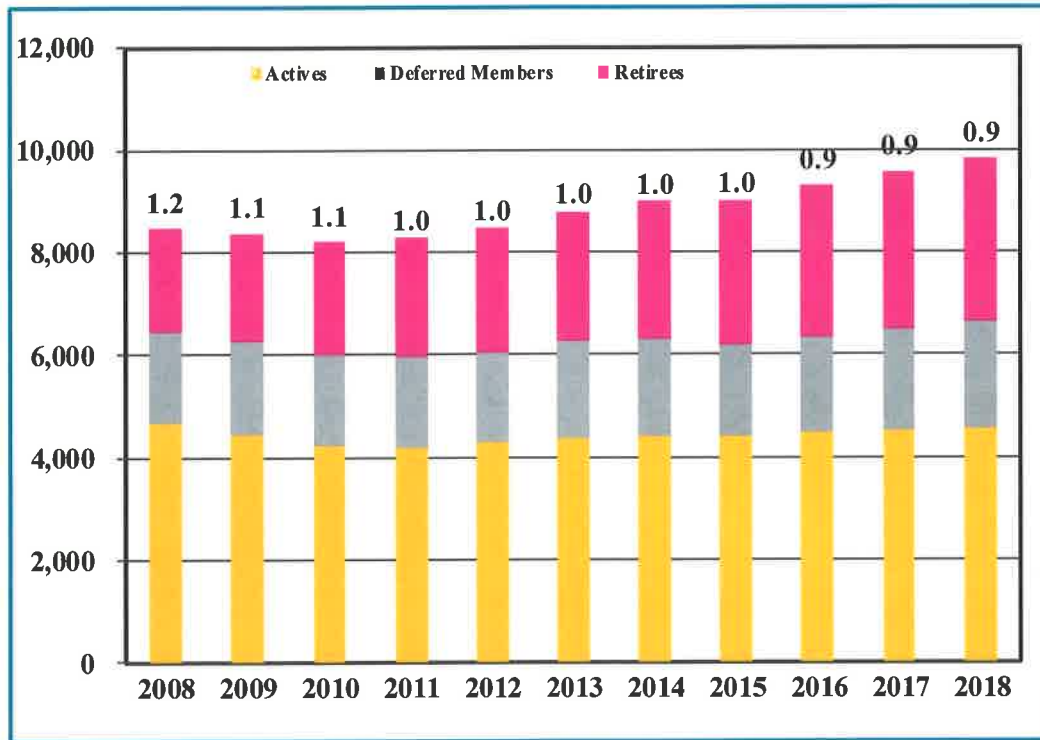
The chart below compares the Market Value of Assets (MVA) and Actuarial Value of Assets (AVA) to the actuarial liabilities. The percentage shown in the graph is the ratio of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio). The funded ratio had declined from 92.9% in 2008 to 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 2018 plan year, the funding ratio decreased to 92.0%.



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SECTION I – EXECUTIVE SUMMARY

Participant Trends



The chart above provides a measure for Plan maturity by comparing the ratio of active members to inactive members (retirees and deferred members). These ratios are given at the top of each bar. The active-to-inactive ratio has decreased from 2008 to 2018, indicating the ongoing maturation of the Plan. While this is neither good nor bad in itself, it does have implications for the risk profile of the Plan, as discussed under Table I-6 earlier in this section.

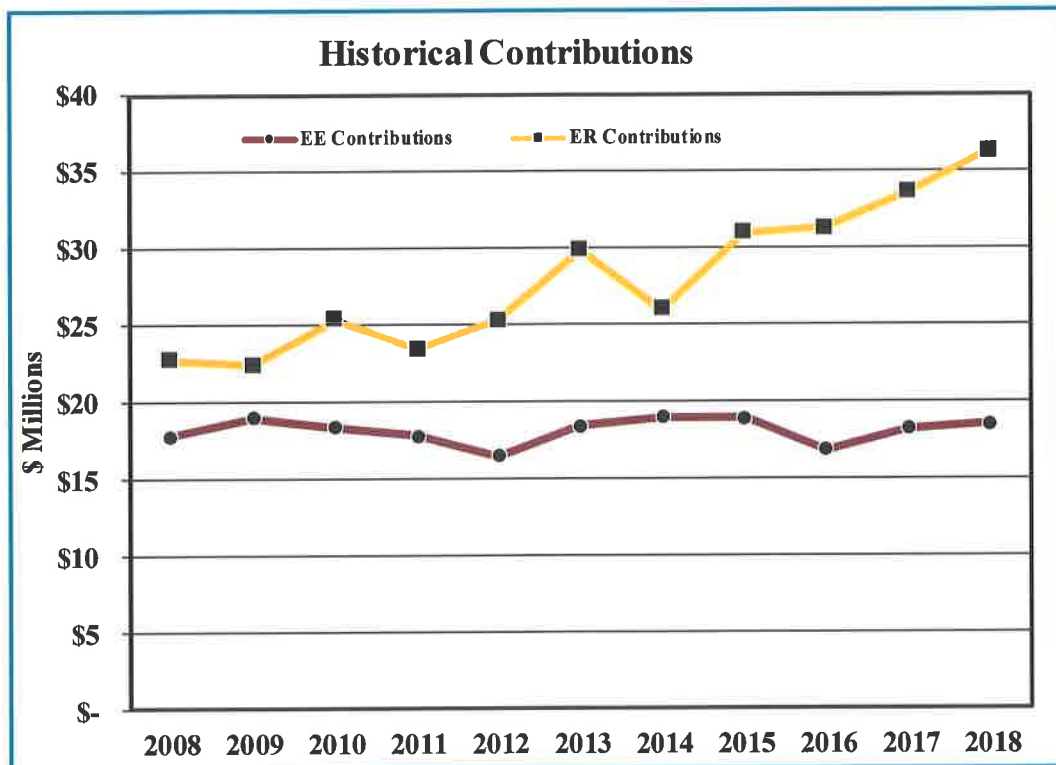
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**SECTION I – EXECUTIVE SUMMARY**

**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. Due to the 10-year asset smoothing period, those losses continue to be recognized in the employer contribution rates. 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 the recent POB proceeds that exceeded the regular actuarially determined amounts.



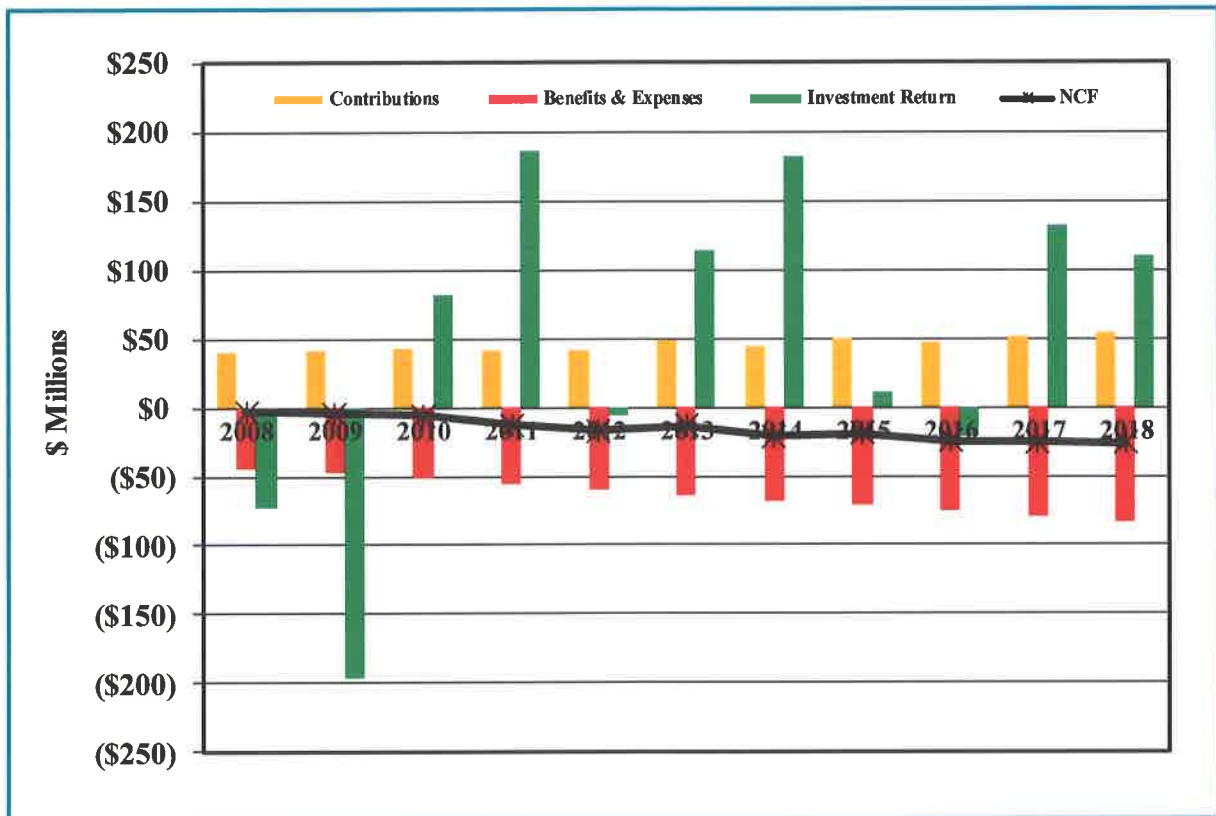
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Cash Flows

The chart below shows the Plan's cash flow (contribution less benefit payments and 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 recent 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 expenses, was close to zero for the first half of the period shown but has become more negative over the last few years. For the most recent year, the plan had negative cash flow of approximately 1.9% of assets (market value). A negative cash flow magnifies the losses during a market decline hindering the Plan in its ability to absorb market fluctuations. The implications of a plan in negative cash flow are that the impact of market fluctuations can be more severe: as assets are being depleted to pay benefits in down markets, there is less principal available to be reinvested during favorable return periods.

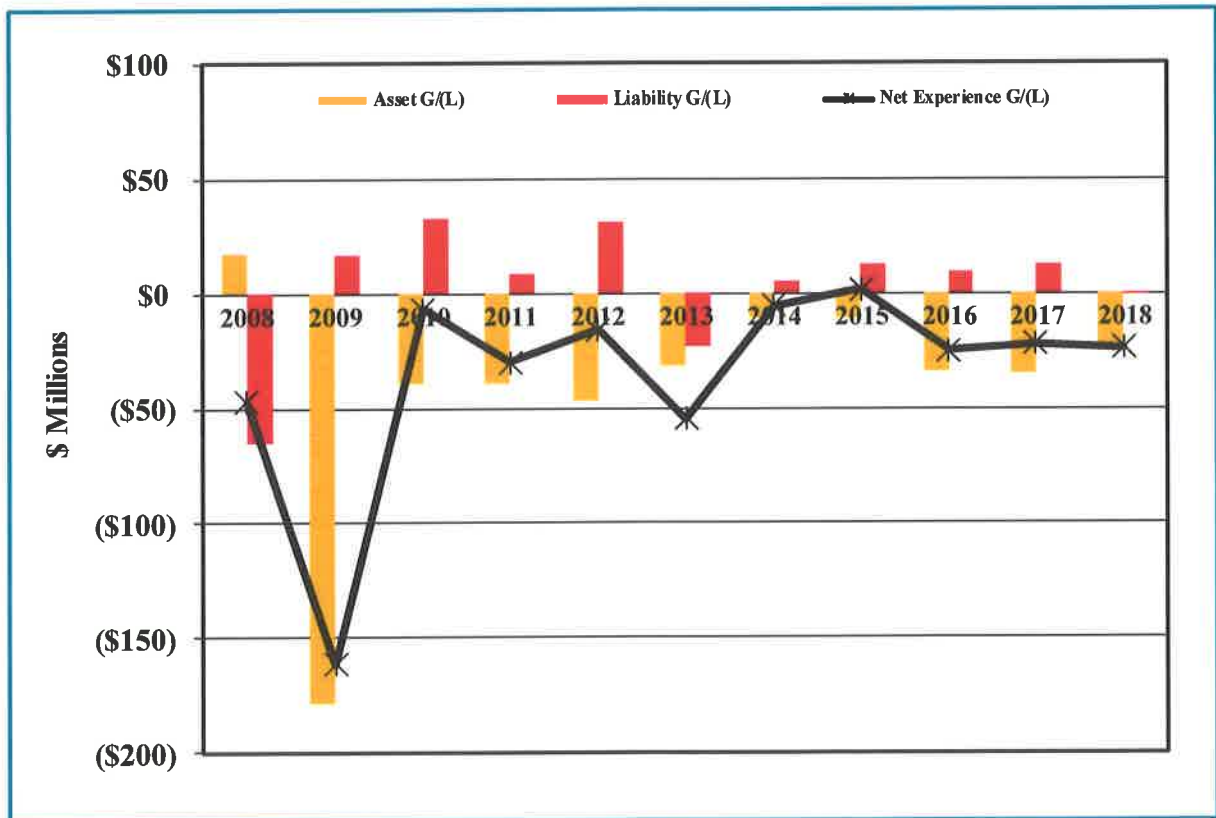
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**Gains and Losses**

The chart below presents the pattern of annual gains and losses, broken into the investment and liability components. The investment gains and losses represent the changes on a smoothed basis (i.e., based on the Actuarial Value of Assets). The chart does not include any changes in TCERA's assets and liabilities attributable to changes to actuarial methods, assumptions or plan benefit changes.

The investment loss in 2008-2009 was by far the most significant gain or loss during the last 10 years. Since the Plan uses 10-year smoothing of asset gains and losses, it continues to recognize the 2008-2009 losses in the Actuarial Value of Assets.





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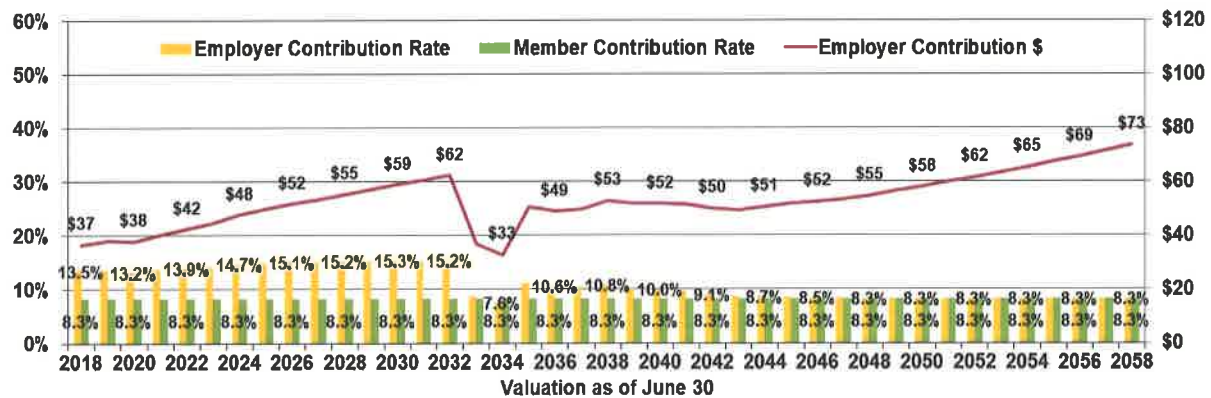
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### D. Future Expected Financial Trends

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, 2018 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 7.25%. 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), employee contribution rate (green bars), and the employer contribution in millions of dollars (red line) based on achieving the investment assumption **each year** for the next 40 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.

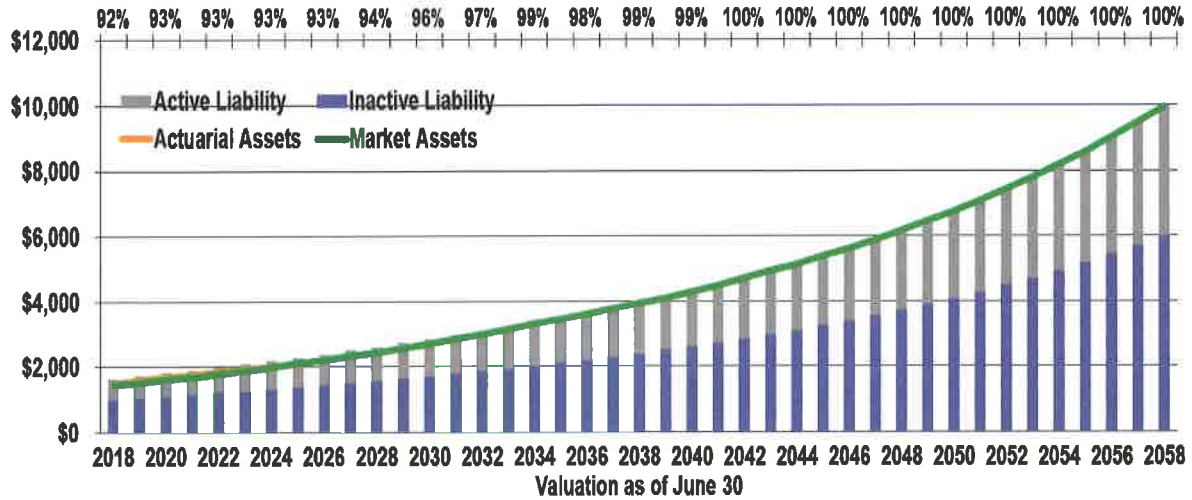
The contribution graph shows that the employer contribution rate is expected to increase slightly for several years as past investment losses are recognized, then experience some fluctuation as certain UAL layers drop off.



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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 2042 assuming the actuarial assumptions are achieved.

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 – 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, 2017 and June 30, 2018;
- 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 II-1 on the next page discloses and compares each asset value as of June 30, 2017 and June 30, 2018.

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

| Table II.1<br>Statement of Assets at Market Value                                |                         |                         |
|--|-------------------------|-------------------------|
|  | June 30, 2017           | June 30, 2018*          |
| <b>Cash and Securities Lending Collateral:</b>                                   |                         |                         |
| Cash and Short Term Investments  | \$ 59,581,311           | \$ 275,907,000          |
| Collateral on Loaned Securities  | <u>55,755,489</u>       | <u>60,537,000</u>       |
| Total Cash and Securities Lending Collateral                                     | \$ 115,336,800          | \$ 336,444,000          |
| <b>Receivables:</b>  |                         |                         |
| Sales of Investments   | \$ 24,718,343           | \$ 19,248,000           |
| Interest and Dividends   | 1,770,583               | 2,198,000               |
| Employee and Employer Contributions  | 1,122,850               | 1,242,000               |
| Other Receivables  | <u>32,937</u>           | <u>26,000</u>           |
| Total Receivables  | \$ 27,644,713           | \$ 22,714,000           |
| <b>Investments, at Fair Value:</b>   |                         |                         |
| U.S. Government Obligations  | \$ 88,415,682           | \$ 76,387,000           |
| Global Bonds   | 75,883,564              | 82,409,000              |
| Domestic Corporate Bonds   | 221,648,992             | 217,775,000             |
| Domestic Stocks  | 260,877,773             | 304,005,000             |
| International Stocks   | 308,184,443             | 319,175,000             |
| Real Estate  | 101,063,213             | 117,844,000             |
| Commodities  | 37,068,592              | 41,679,000              |
| Alternative Investments (Hedge Funds, Private Equity, Futures)                   | <u>138,687,689</u>      | <u>171,415,000</u>      |
| Total Investments, at Fair Value   | \$ 1,231,829,948        | \$ 1,330,689,000        |
| <b>Capital Assets</b>  |                         |                         |
| Land   | \$ 370,346              | \$ 370,000              |
| Building, Office Equipment and Furniture Net of Accumulated Depreciation         | 793,960                 | 761,000                 |
| Intangible Assets, Pension Administration System Net of Accumulated Depreciation | <u>1,516,752</u>        | <u>1,213,000</u>        |
| Total Capital Assets   | \$ 2,681,058            | \$ 2,344,000            |
| <b>Total Assets</b>  | <b>\$ 1,377,492,519</b> | <b>\$ 1,692,191,000</b> |
| <b>Current Liabilities:</b>  |                         |                         |
| Purchase of Investments  | \$ 47,931,143           | \$ 39,573,000           |
| Obligations under Security Lending Program                                       | 55,755,489              | 60,537,000              |
| Refunds Payable  | 1,985,806               | 2,626,000               |
| Accounts Payable   | <u>1,481,596</u>        | <u>1,847,000</u>        |
| Total Current Liabilities  | \$ 107,154,034          | \$ 104,583,000          |
| <b>Long-Term Liabilities:</b>  |                         |                         |
| Compensated Absences   | <u>\$ 112,707</u>       | <u>\$ 132,000</u>       |
| Total Long-Term Liabilities  | \$ 112,707              | \$ 132,000              |
| <b>Total Liabilities</b>   | <b>\$ 107,266,741</b>   | <b>\$ 104,715,000</b>   |
| <b>Total Market Value of Assets, without POB</b>                                 | <b>\$ 1,270,225,778</b> | <b>\$ 1,587,476,000</b> |
| Receivable for POB Contribution**  | <u>\$ 233,100,233</u>   | <u>\$ 0</u>             |
| <b>Total Market Value of Assets for Valuation</b>                                | <b>\$ 1,503,326,011</b> | <b>\$ 1,587,476,000</b> |

\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.

\*\*Based on the expected contribution of \$250 million, discounted with one year of interest at the assumed discount rate (7.25%) with an assumed contribution date of June 30, 2018.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION II – 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 II-2 below shows the components of change in the Market Value of Assets during the fiscal years ending June 30, 2017 and June 30, 2018. Other Income for the period ending June 30, 2018 includes interest on the discounted receivable POB contribution.

| Table II-2<br>Changes in Market Values                          |                       |                       |
|---|-----------------------|-----------------------|
|   | June 30, 2017         | June 30, 2018*        |
| <b>Additions:</b>   |                       |                       |
| Contributions   |                       |                       |
| Employer  | \$ 33,615,885         | \$ 36,263,000         |
| Plan Member   | 18,190,415            | 18,512,000            |
| Total Contributions   | \$ 51,806,300         | \$ 54,775,000         |
| Investment Income   |                       |                       |
| Net Appreciation/(Depreciation) in<br>Fair Value of Investments | \$ 127,697,895        | \$ 87,044,000         |
| Interest  | 5,109,375             | 6,091,000             |
| Dividends   | 3,803,026             | 3,564,000             |
| Real Estate Operating Income                                    | 2,526,209             | 3,630,000             |
| Other Investment Income   | 1,035,040             | 3,189,000             |
| Total Investment Activity Income/(Loss)                         | \$ 140,171,545        | \$ 103,518,000        |
| Less Expenses from Investing Activities                         | 7,718,257             | 8,010,000             |
| Net Investing Activity Income/(Loss)                            | \$ 132,453,288        | \$ 95,508,000         |
| From Securities Lending Activities                              |                       |                       |
| Securities Lending Income                                       | \$ 624,617            | \$ 1,014,000          |
| Less Expenses from Securities Lending Income                    |                       |                       |
| Management Fee  | \$ 12,625             | \$ 12,000             |
| Borrower Rebate   | 365,848               | 840,000               |
| Net Securities Lending Income                                   | \$ 246,144            | \$ 162,000            |
| Total Net Investment Income/(Loss)                              | \$ 132,699,432        | \$ 95,670,000         |
| Other Income  | \$ 165,600            | \$ 17,087,000         |
| <b>Total Additions</b>  | <b>\$ 184,671,332</b> | <b>\$ 167,532,000</b> |

\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.

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

| Table II-2<br>Changes in Market Values (Continued)          |                       |                      |
|---|-----------------------|----------------------|
|   | June 30, 2017         | June 30, 2018*       |
| <b>Deductions:</b>  |                       |                      |
| Benefits  | \$ 73,442,266         | \$ 77,083,000        |
| Refunds of Contributions                                    | 3,519,060             | 3,633,000            |
| Administrative Expenses                                     | 2,611,562             | 2,666,000            |
| Total Deductions  | \$ 79,572,888         | \$ 83,382,000        |
| <b>Net Increase/(Decrease)</b>                              | <b>\$ 105,098,444</b> | <b>\$ 84,150,000</b> |
| <b><u>Net Assets Held in Trust for Pension Benefits</u></b> |                       |                      |
| Beginning of Year   | \$ 1,165,127,334      | \$ 1,503,326,000     |
| End of Year, without POB Receivable                         | \$ 1,270,225,778      | \$ 1,587,476,000     |
| Expected POB Contribution**                                 | \$ 233,100,233        | \$ 0                 |
| End of Year for Valuation                                   | \$ 1,503,326,011      | \$ 1,587,476,000     |
| Approximate Return***                                       | 11.29%                | 7.39%                |

\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.

\*\*Based on the expected contribution of \$250 million, discounted with one year of interest at the assumed discount rate (7.25%) with an assumed contribution date of June 30, 2018.

\*\*\*Net of investment and administrative expenses.

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**SECTION II – 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.

| Table II-3<br>Development of Actuarial Value of Assets for June 30, 2018 |           |   |   |                                   |                            |                            |
|--|-----------|---|---|-----------------------------------|----------------------------|----------------------------|
| <b>Six month<br/>Period</b>  |           | <b>Total Actual<br/>Market<br/>Return (net)</b> | <b>Expected<br/>Market<br/>Return (net)</b> | <b>Investment<br/>Gain (Loss)</b> | <b>Deferred<br/>Factor</b> | <b>Deferred<br/>Return</b> |
| <b>From</b>  | <b>To</b> |   |   |                                   |                            |                            |
| 1/09   | 6/09      | \$ 5,932,310                                    | \$ 29,502,818                               | \$ (23,570,509)                   | 0.05                       | \$ (1,178,525)             |
| 7/09   | 12/09     | 111,719,499                                     | 29,390,608                                  | 82,328,891                        | 0.10                       | 8,232,889                  |
| 1/10   | 6/10      | (33,675,854)                                    | 33,673,605                                  | (67,349,458)                      | 0.15                       | (10,102,419)               |
| 7/10   | 12/10     | 130,581,862                                     | 32,462,428                                  | 98,119,434                        | 0.20                       | 19,623,887                 |
| 1/11   | 6/11      | 49,953,925                                      | 37,183,527                                  | 12,770,398                        | 0.25                       | 3,192,599                  |
| 7/11   | 12/11     | (58,996,703)                                    | 39,029,015                                  | (98,025,719)                      | 0.30                       | (29,407,716)               |
| 1/12   | 6/12      | 46,133,182                                      | 36,032,847                                  | 10,100,335                        | 0.35                       | 3,535,117                  |
| 7/12   | 12/12     | 61,934,352                                      | 38,223,420                                  | 23,710,932                        | 0.40                       | 9,484,373                  |
| 1/13   | 6/13      | 45,446,072                                      | 39,915,825                                  | 5,530,247                         | 0.45                       | 2,488,611                  |
| 7/13   | 12/13     | 114,083,453                                     | 41,675,731                                  | 72,407,722                        | 0.50                       | 36,203,861                 |
| 1/14   | 6/14      | 62,482,815                                      | 45,022,478                                  | 17,460,337                        | 0.55                       | 9,603,185                  |
| 7/14   | 12/14     | (17,886,044)                                    | 46,676,782                                  | (64,562,826)                      | 0.60                       | (38,737,696)               |
| 1/15   | 6/15      | 26,507,383                                      | 44,856,580                                  | (18,349,197)                      | 0.65                       | (11,926,978)               |
| 7/15   | 12/15     | (45,631,715)                                    | 45,909,756                                  | (91,541,471)                      | 0.70                       | (64,079,030)               |
| 1/16   | 6/16      | 24,729,226                                      | 43,045,278                                  | (18,316,052)                      | 0.75                       | (13,737,039)               |
| 7/16   | 12/16     | 44,835,718                                      | 44,015,787                                  | 819,931                           | 0.80                       | 655,945                    |
| 1/17   | 6/17      | 84,564,705                                      | 42,691,625                                  | 41,873,080                        | 0.85                       | 35,592,118                 |
| 7/17   | 12/17     | 79,943,304                                      | 45,809,189                                  | 34,134,115                        | 0.90                       | 30,720,704                 |
| 1/18   | 6/18      | 13,818,128                                      | 48,460,635                                  | (34,642,507)                      | 0.95                       | (32,910,382)               |
| 1. Total deferred return   |           |   |   |                                   |                            | (42,746,495)               |
| 2. Market Value of Assets (includes SRBR)                                |           |   |   |                                   |                            | 1,587,476,000              |
| 3. Actuarial Value of Assets for Funding Ratio (2. - 1.)                 |           |   |   |                                   |                            | 1,630,222,495              |
| 4. Non-valuation reserves and designations:                              |           |   |   |                                   |                            |                            |
| a. Supplemental Retiree Benefit Reserve (SRBR)                           |           |   |   |                                   |                            | 107,192,000                |
| 5. Preliminary Actuarial Value of Assets (3. - 4.)                       |           |   |   |                                   |                            | 1,523,030,495              |
| 6. Corridor Limit  |           |   |   |                                   |                            |                            |
| a. 70% of Market Value of Assets excluding SRBR                          |           |   |   |                                   |                            | 1,036,198,800              |
| b. 130% of Market Value of Assets excluding SRBR                         |           |   |   |                                   |                            | 1,924,369,200              |
| 7. Actuarial Value of Assets after Corridor                              |           |   |   |                                   |                            | 1,523,030,495              |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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SECTION II – ASSETS

**Allocation of Reserve Balances**

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

Note that the FYE 2017 reserve balances do not include the expected contribution from POB proceeds.

| Table II-4<br>Allocation of Assets by Accounting Reserve Amounts<br>for the Years Ended June 30, 2017 and June 30, 2018 |          |               |                  |
|---|----------|---------------|------------------|
|   | FYE 2017 |               | FYE 2018*        |
| 1. Member Deposit Reserve   | \$       | 278,900,255   | \$ 287,078,000   |
| 2. Employer Advance Reserve   |          | 509,155,763   | 781,335,000      |
| 3. Retiree Reserve  |          | 400,056,600   | 405,175,000      |
| 4. Supplemental Retiree Benefit Reserve   |          | 108,203,552   | 107,192,000      |
| 5. Contingency Reserve  |          | 39,662,444    | 48,895,000       |
| 6. Market Stabilization Reserve   |          | (66,632,628)  | (45,232,000)     |
| 7. TCERA Property, Inc. Retained Earnings   |          | 413,441       | 535,000          |
| 8. Other Reserves   |          | 466,351       | 2,498,000        |
| <b>Total Reserves</b>   | \$       | 1,270,225,778 | \$ 1,587,476,000 |

*\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.*

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

**Asset Returns vs. Inflation**

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

| Table II-5<br>Net Return on Assets vs. Increase in Consumer Price Index |                                |                                   |  |
|---|--------------------------------|-----------------------------------|--|
| Year Ended<br>June 30   | Net Return at<br>Market Value* | Net Return at<br>Actuarial Value* | Increase in<br>Consumer Price<br>Index** |
| 2009  | -20.8%                         | 5.1%                              | -1.4%                                    |
| 2010  | 10.3%                          | 3.6%                              | 1.1%                                     |
| 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%                                     |
| <b>Compound Average</b>   | <b>4.9%</b>                    | <b>4.8%</b>                       | <b>1.4%</b>                              |
| * Net of investment and administrative expenses.                        |                                |                                   |  |
| ** Based on All Urban Consumers - U.S. City Average, June indices.      |                                |                                   |  |



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

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

- **Disclosure** of System liabilities at June 30, 2017 and June 30, 2018;
- 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 III-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  
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**SECTION III – LIABILITIES**

| Table III-1<br>Present Value of Future Benefits and Actuarial Liability<br>(in thousands) |                     |                   |                     |                     |
|---|---------------------|-------------------|---------------------|---------------------|
| Item  | June 30, 2018       |                   | June 30, 2017       |                     |
|   | General             | Safety            | Total               | Total               |
| <b>Present Value of Future Benefits (PVFB)</b>  |                     |                   |                     |                     |
| Actives   | \$ 724,856          | \$ 293,281        | \$ 1,018,137        | \$ 990,922          |
| Terminated Vested   | 101,386             | 25,688            | 127,074             | 125,352             |
| Retirees  | 542,584             | 156,536           | 699,120             | 656,585             |
| Disabled  | 51,354              | 55,684            | 107,038             | 95,418              |
| Beneficiaries   | 42,511              | 21,060            | 63,571              | 56,796              |
| <b>Total PVFB</b>   | <b>\$ 1,462,691</b> | <b>\$ 552,249</b> | <b>\$ 2,014,940</b> | <b>\$ 1,925,073</b> |
| <b>Actuarial Liability</b>  |                     |                   |                     |                     |
| Total Present Value of Benefits   | \$ 1,462,691        | \$ 552,249        | \$ 2,014,940        | \$ 1,925,073        |
| <b>Present Value of Future Normal Costs</b>   |                     |                   |                     |                     |
| Employer Portion  | 128,959             | 61,289            | 190,248             | 187,467             |
| Employee Portion  | 117,023             | 51,313            | 168,336             | 164,199             |
| <b>Actuarial Liability</b>  | <b>\$ 1,216,709</b> | <b>\$ 439,648</b> | <b>\$ 1,656,357</b> | <b>\$ 1,573,406</b> |
| Actuarial Value of Assets   | \$ 1,117,600        | \$ 405,431        | \$ 1,523,030        | \$ 1,461,755        |
| Funded Ratio  | 91.9%               | 92.2%             | 92.0%               | 92.9%               |
| <b>Unfunded Actuarial Liability/(Surplus)</b>   | <b>\$ 99,109</b>    | <b>\$ 34,217</b>  | <b>\$ 133,326</b>   | <b>\$ 111,651</b>   |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION III – 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 III-2</b><br><b>Development of 2018 Experience Gain/(Loss)</b><br>(in thousands) |             |
|---|-------------|
| <b>Item</b>   | <b>Cost</b> |
| 1. Unfunded Actuarial Liability at June 30, 2017  | \$ 111,651  |
| 2. Middle of year actuarial liability payment   | (9,850)     |
| 3. Interest to end of year on 1 and 2   | 7,744       |
| 4. Impact of assumption changes   | -           |
| 5. Expected Unfunded Actuarial Liability at June 30, 2018                                 | \$ 109,545  |
| 6. Actual Unfunded Liability at June 30, 2018 (AVA basis)                                 | 133,326     |
| 7. Net Gain/(Loss): (5 - 6)   | \$ (23,781) |
| 8. Portion of net gain/(loss) due to:   |             |
| a. Investment experience loss   | \$ (23,696) |
| b. Contributions greater than expected  | 201         |
| c. New entrant loss   | (1,627)     |
| d. Inactive mortality loss  | (1,209)     |
| e. COLAs more than expected   | (5,531)     |
| f. Salaries less than expected  | 6,724       |
| g. Retirements  | 1,206       |
| h. Terminations   | (958)       |
| i. Other experience   | 1,109       |
| j Total gain/(loss)   | \$ (23,781) |

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

Table III-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, 2018 is positive, meaning that the current SRBR balance is expected to cover SRBR benefits at current levels.

| Table III-3<br>Supplemental Retiree Benefit Reserve as of June 30, 2018          |                    |                    |
|--|--------------------|--------------------|
|  | June 30, 2017      | June 30, 2018      |
| <b>Level One</b>   |                    |                    |
| 1. Current Retirees  | \$ 54,449,298      | \$ 56,181,622      |
| 2. Inactive Members  | 2,390,763          | 2,348,088          |
| 3. Active members  | <u>37,949,971</u>  | <u>37,225,982</u>  |
| 4. Subtotal  | \$ 94,790,032      | \$ 95,755,692      |
| <b>Level Two</b>   |                    |                    |
| 5. Supplemental COLA for those who have<br>lost at least 15% of Purchasing Power | \$ 826,292         | \$ 810,834         |
| <b>Level Three</b>   |                    |                    |
| 6. Supplemental Spousal Death Benefit  | \$ 3,214,068       | \$ 3,601,253       |
| 7. <b>Total SRBR Combined Liability: (4) + (5) + (6)</b>                         | \$ 98,830,392      | \$ 100,167,779     |
| 8. <b>Supplemental Retiree Benefit Reserve: (SRBR)</b>                           | <u>108,203,552</u> | <u>107,192,000</u> |
| 9. <b>Net Reserve: (8) - (7)</b>   | \$ 9,373,160       | \$ 7,024,221       |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**SECTION III – LIABILITIES**

The top portion of Table III-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 (\$98.4 million) as well as the accrued portion of the present value of future transfers to the SRBR (\$111.0 million). In addition, the SRBR balance of \$107.2 million as of June 30, 2018 is added to the asset values. Note that the present value of future transfers to the SRBR is higher than in the prior valuation, largely due to the additional POB funds included for the plan year ending June 30, 2018.

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.

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 III-4</b><br><b>Disclosure of SRBR Liabilities</b><br>(in thousands) |                      |
|---|----------------------|
| <b>Valuation Date</b>   | <b>June 30, 2018</b> |
| <u>Without SRBR</u>   |                      |
| Actuarial Liability (Excluding SRBR)  | \$ 1,656,357         |
| Actuarial Value of Assets (Excluding SRBR)                                    | 1,523,030            |
| Market Value of Assets (Excluding SRBR)                                       | 1,480,284            |
| Funded Ratio - Actuarial Value Basis  | 92.0%                |
| Funded Ratio - Market Value Basis   | 89.4%                |
| <u>With SRBR</u>  |                      |
| Actuarial Liability (Excluding SRBR)  | \$ 1,656,357         |
| Liability Associated with Current SRBR Balance                                | 98,407               |
| Liability from Future Transfers   | <u>110,992</u>       |
| Total Liability with SRBR   | \$ 1,865,755         |
| Actuarial Value of Assets (Including SRBR)                                    | \$ 1,630,222         |
| Market Value of Assets (Including SRBR)                                       | 1,587,476            |
| Funded Ratio - Actuarial Value Basis  | 87.4%                |
| Funded Ratio - Market Value Basis   | 85.1%                |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION IV – 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. 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, 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.

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  
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**SECTION IV – CONTRIBUTIONS**

The employer contribution rates for FYE 2020 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 IV-1(a)<br>Development of the Net Employer Contribution Rate as of June 30, 2018 for FYE 2020 |               |               |               |               |
|---|---------------|---------------|---------------|---------------|
|   | Tier 1        | Tier 2 & 3    | Tier 4        | Total         |
| <b>General (County)</b>   |               |               |               |               |
| 1. Total Normal Cost Rate   | 13.61%        | 16.31%        | 14.40%        | 15.63%        |
| 2. Member Contribution Rate   | <u>0.53%</u>  | <u>8.00%</u>  | <u>7.20%</u>  | <u>7.69%</u>  |
| 3. Employer Normal Cost Rate (1-2)  | 13.08%        | 8.31%         | 7.20%         | 7.94%         |
| 4. UAL Amortization   | <u>3.83%</u>  | <u>3.83%</u>  | <u>3.83%</u>  | <u>3.83%</u>  |
| 5. Net Employer Contribution Rate (3+4)   | 16.91%        | 12.14%        | 11.03%        | 11.77%        |
| <b>General (Non-County)</b>   |               |               |               |               |
| 1. Total Normal Cost Rate   | 13.61%        | 16.31%        | 14.40%        | 15.63%        |
| 2. Member Contribution Rate   | <u>0.53%</u>  | <u>8.00%</u>  | <u>7.20%</u>  | <u>7.69%</u>  |
| 3. Employer Normal Cost Rate (1-2)  | 13.08%        | 8.31%         | 7.20%         | 7.94%         |
| 4. UAL Amortization   | <u>11.20%</u> | <u>11.20%</u> | <u>11.20%</u> | <u>11.20%</u> |
| 5. Net Employer Contribution Rate (3+4)   | 24.28%        | 19.51%        | 18.40%        | 19.14%        |
| <b>Safety (County)</b>  |               |               |               |               |
| 1. Total Normal Cost Rate   | N/A           | 22.48%        | 24.25%        | 22.93%        |
| 2. Member Contribution Rate   | <u>N/A</u>    | <u>10.02%</u> | <u>12.12%</u> | <u>10.56%</u> |
| 3. Employer Normal Cost Rate (1-2)  | N/A           | 12.46%        | 12.12%        | 12.37%        |
| 4. UAL Amortization   | <u>N/A</u>    | <u>5.12%</u>  | <u>5.12%</u>  | <u>5.12%</u>  |
| 5. Net Employer Contribution Rate (3+4)   | N/A           | 17.58%        | 17.24%        | 17.49%        |



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

The employer contribution rates for FYE 2019 are shown in the table below, split by tier (1-4) and membership class (General or Safety).

| Table IV-1(b)<br>Development of the Net Employer Contribution Rate as of June 30, 2017 for FYE 2019 |               |               |               |               |
|---|---------------|---------------|---------------|---------------|
|   | Tier 1        | Tier 2 & 3    | Tier 4        | Total         |
| <b>General (County)</b>   |               |               |               |               |
| 1. Total Normal Cost Rate   | 13.22%        | 16.54%        | 14.40%        | 15.88%        |
| 2. Member Contribution Rate   | <u>0.46%</u>  | <u>8.13%</u>  | <u>7.20%</u>  | <u>7.80%</u>  |
| 3. Employer Normal Cost Rate (1-2)  | 12.76%        | 8.41%         | 7.20%         | 8.08%         |
| 4. UAL Amortization   | <u>3.27%</u>  | <u>3.27%</u>  | <u>3.27%</u>  | <u>3.27%</u>  |
| 5. Net Employer Contribution Rate (3+4)   | 16.03%        | 11.68%        | 10.47%        | 11.35%        |
| <b>General (Non-County)</b>   |               |               |               |               |
| 1. Total Normal Cost Rate   | 13.22%        | 16.54%        | 14.40%        | 15.88%        |
| 2. Member Contribution Rate   | <u>0.46%</u>  | <u>8.13%</u>  | <u>7.20%</u>  | <u>7.80%</u>  |
| 3. Employer Normal Cost Rate (1-2)  | 12.76%        | 8.41%         | 7.20%         | 8.08%         |
| 4. UAL Amortization   | <u>10.68%</u> | <u>10.68%</u> | <u>10.68%</u> | <u>10.68%</u> |
| 5. Net Employer Contribution Rate (3+4)   | 23.44%        | 19.09%        | 17.88%        | 18.76%        |
| <b>Safety (County)</b>  |               |               |               |               |
| 1. Total Normal Cost Rate   | 21.57%        | 22.67%        | 24.17%        | 22.96%        |
| 2. Member Contribution Rate   | <u>0.00%</u>  | <u>10.07%</u> | <u>12.09%</u> | <u>10.44%</u> |
| 3. Employer Normal Cost Rate (1-2)  | 21.57%        | 12.59%        | 12.09%        | 12.52%        |
| 4. UAL Amortization   | <u>4.01%</u>  | <u>4.01%</u>  | <u>4.01%</u>  | <u>4.01%</u>  |
| 5. Net Employer Contribution Rate (3+4)   | 25.58%        | 16.60%        | 16.10%        | 16.53%        |

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

The combined General and Safety employer contribution rates for FYE 2020 are shown in the table below, split by tier (1-4). Separate rates are shown above and below the first \$161.54 of biweekly compensation (Social Security Integration).

| Table IV-2(a)<br>Development of the Employer Contribution Rate as of June 30, 2018 for FYE 2020<br>with Social Security Integration |        |            |        |        |
|---|--------|------------|--------|--------|
|   | Tier 1 | Tier 2 & 3 | Tier 4 | Total  |
| <b>General and Safety</b>   |        |            |        |        |
| 1. Employer Normal Cost Rate:   |        |            |        |        |
| a. Rate on first \$161.54 of biweekly compensation  | 13.08% | 9.36%      | 8.08%  | 8.96%  |
| b. Rate on biweekly compensation in excess of \$161.54  | 8.94%  | 6.39%      |        |        |
|   | 13.41% | 9.59%      |        |        |
| 2. UAL Rate:  |        |            |        |        |
| a. Rate on first \$161.54 of biweekly compensation  | 4.39%  | 4.58%      | 4.52%  | 4.56%  |
| b. Rate on biweekly compensation in excess of \$161.54  | 3.00%  | 3.12%      |        |        |
|   | 4.50%  | 4.69%      |        |        |
| 3. Total Rate (1 + 2):  |        |            |        |        |
| a. Rate on first \$161.54 of biweekly compensation  | 17.47% | 13.94%     | 12.60% | 13.52% |
| b. Rate on biweekly compensation in excess of \$161.54  | 11.94% | 9.52%      |        |        |
|   | 17.91% | 14.28%     |        |        |



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

The employer contribution rates for FYE 2020 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 IV-2(b)<br/>Development of the Employer Contribution Rate as of June 30, 2018 for FYE 2020<br/>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:  | 13.08%        | 8.31%                 | 7.20%         | 7.94%        |
| a. Rate on first \$161.54 of biweekly compensation   | 8.94%         | 5.68%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 13.41%        | 8.52%                 |               |              |
| 2. UAL Rate:   | 3.83%         | 3.83%                 | 3.83%         | 3.83%        |
| a. Rate on first \$161.54 of biweekly compensation   | 2.62%         | 2.62%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 3.93%         | 3.93%                 |               |              |
| 3. Total Rate (1 + 2):   | 16.91%        | 12.14%                | 11.03%        | 11.77%       |
| a. Rate on first \$161.54 of biweekly compensation   | 11.56%        | 8.30%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 17.34%        | 12.44%                |               |              |
| <b>General (Non-County)</b>  |               |                       |               |              |
| 1. Employer Normal Cost Rate:  | 13.08%        | 8.31%                 | 7.20%         | 7.94%        |
| a. Rate on first \$161.54 of biweekly compensation   | 8.94%         | 5.68%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 13.41%        | 8.52%                 |               |              |
| 2. UAL Rate:   | 11.20%        | 11.20%                | 11.20%        | 11.20%       |
| a. Rate on first \$161.54 of biweekly compensation   | 7.66%         | 7.66%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 11.48%        | 11.48%                |               |              |
| 3. Total Rate (1 + 2):   | 24.28%        | 19.51%                | 18.40%        | 19.14%       |
| a. Rate on first \$161.54 of biweekly compensation   | 16.60%        | 13.33%                |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 24.89%        | 20.00%                |               |              |
| <b>Safety (County)</b>   |               |                       |               |              |
| 1. Employer Normal Cost Rate:  | N/A           | 12.46%                | 12.12%        | 12.37%       |
| a. Rate on first \$161.54 of biweekly compensation   | N/A           | 8.48%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | N/A           | 12.72%                |               |              |
| 2. UAL Rate:   | N/A           | 5.12%                 | 5.12%         | 5.12%        |
| a. Rate on first \$161.54 of biweekly compensation   | N/A           | 3.48%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | N/A           | 5.23%                 |               |              |
| 3. Total Rate (1 + 2):   | N/A           | 17.58%                | 17.24%        | 17.49%       |
| a. Rate on first \$161.54 of biweekly compensation   | N/A           | 11.96%                |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | N/A           | 17.95%                |               |              |

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

Table IV-3 below shows information on each layer of the June 30, 2018 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 IV-3<br>Development of Amortization Payment<br>For the June 30, 2018 Actuarial Valuation |                     |                   |                                  |   |                                    |                        |
|--|---------------------|-------------------|----------------------------------|---|------------------------------------|------------------------|
| Type of Base   | Date<br>Established | Initial<br>Amount | Initial<br>Amortization<br>Years | June 30, 2018<br>Outstanding<br>Balance | Remaining<br>Amortization<br>Years | Amortization<br>Amount |
| 1. Initial UAL   | 06/30/2015          | 201,848,216       | 19                               | 196,472,282                             | 16                                 | 16,926,332             |
| 2. (Gain)/Loss Base  | 06/30/2016          | 38,033,040        | 19                               | 37,454,763                              | 17                                 | 3,092,079              |
| 3. (Gain)/Loss Base  | 06/30/2017          | 25,611,386        | 19                               | 25,438,103                              | 18                                 | 2,019,100              |
| 4. Assumption Change Base  | 06/30/2017          | 82,259,297        | 19                               | 81,702,742                              | 18                                 | 6,484,997              |
| 5. POB Contribution Base   | 06/30/2017          | (233,100,233)     | 19                               | (231,523,109)                           | 18                                 | (18,376,698)           |
| 6. (Gain)/Loss Base  | 06/30/2018          | 23,781,349        | 19                               | 23,781,349                              | 19                                 | 1,820,220              |
| <b>Total</b>   |                     |                   |                                  | \$ 133,326,130                          | \$                                 | 11,966,030             |

If the UAL payment above of \$11,966,030 is calculated based on a single-equivalent period with the June 30, 2018 UAL of \$133,326,130, 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 IV – CONTRIBUTIONS**

Table IV-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 2018 provided for the GASB 67/68 report. Following direction from Staff, the pensionable payroll for TCAG is excluded from the County's share.

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

| Table IV-4<br>Development of UAL Amortization Rates for FYE 2020 |                 |
|--|-----------------|
| <b>General (County)</b>  |                 |
| 1. General County Projected Payroll for FYE June 30, 2019        | \$ 187,864,400  |
| 2. Total General Projected Payroll for FYE June 30, 2019         | \$ 203,104,953  |
| 3. County Share (1 divided by 2)                                 | 92.4962%        |
| 4. UAL Payment, not including POB Contribution                   | \$ 22,746,872   |
| 5. UAL Payment for POB Contribution                              | \$ (13,839,896) |
| 6. County Share of 4. (3 multiplied by 4)                        | \$ 21,039,996   |
| 7. County Share of 5. (100% of 5)                                | \$ (13,839,896) |
| 8. Total General County UAL Payment (6+7)                        | \$ 7,200,100    |
| 9. General County UAL Rate (8 divided by 1)                      | 3.83%           |
| <b>General (Non-County)</b>                                      |                 |
| 1. General Non-County Projected Payroll for FYE June 30, 2019    | \$ 15,240,553   |
| 2. Total General Projected Payroll for FYE June 30, 2019         | \$ 203,104,953  |
| 3. Non-County Share (1 divided by 2)                             | 7.5038%         |
| 4. UAL Payment, not including POB Contribution                   | \$ 22,746,872   |
| 5. UAL Payment for POB Contribution                              | \$ (13,839,896) |
| 6. Non-County Share of 4. (3 multiplied by 4)                    | \$ 1,706,876    |
| 7. Non-County Share of 5. (0% of 5)                              | \$ -            |
| 8. Total General Non-County UAL Payment (6+7)                    | \$ 1,706,876    |
| 9. General Non-County UAL Rate (8 divided by 1)                  | 11.20%          |
| <b>Safety (County)</b>   |                 |
| 1. County Safety Projected Payroll for FYE June 30, 2019         | \$ 59,694,151   |
| 2. Total Safety Projected Payroll for FYE June 30, 2019          | \$ 59,694,151   |
| 3. County Share (1 divided by 2)                                 | 100.0000%       |
| 4. UAL Payment, not including POB Contribution                   | \$ 7,595,856    |
| 5. UAL Payment for POB Contribution                              | \$ (4,536,802)  |
| 6. County Share of 4. (3 multiplied by 4)                        | \$ 7,595,856    |
| 7. County Share of 5. (100% of 5)                                | \$ (4,536,802)  |
| 8. Total County Safety UAL Payment (6+7)                         | \$ 3,059,054    |
| 9. County Safety UAL Rate (8 divided by 1)                       | 5.12%           |

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

The employer contribution rates for FYE 2020 are shown in Table IV-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 IV-6 below shows employee contribution rates for FYE 2020 at sample ages.

**Table IV-5**

**Detailed Employer Contribution Rate as of June 30, 2018 for FYE 2020**

| 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    | 10.67%      | 2.41%     | 13.08%     | 3.13%                 | 0.70%     | 3.83%      | 13.80%     | 3.11%     | 16.91%     |
| General (County)     | 2&3  | 6.91%       | 1.40%     | 8.31%      | 3.18%                 | 0.65%     | 3.83%      | 10.09%     | 2.05%     | 12.14%     |
| General (County)     | 4    | 5.93%       | 1.27%     | 7.20%      | 3.15%                 | 0.68%     | 3.83%      | 9.08%      | 1.94%     | 11.03%     |
| General (Non-County) | 1    | 10.67%      | 2.41%     | 13.08%     | 9.14%                 | 2.06%     | 11.20%     | 19.81%     | 4.47%     | 24.28%     |
| General (Non-County) | 2&3  | 6.91%       | 1.40%     | 8.31%      | 9.31%                 | 1.89%     | 11.20%     | 16.22%     | 3.29%     | 19.51%     |
| General (Non-County) | 4    | 5.93%       | 1.27%     | 7.20%      | 9.23%                 | 1.97%     | 11.20%     | 15.15%     | 3.24%     | 18.40%     |
| 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  | 10.11%      | 2.35%     | 12.46%     | 4.15%                 | 0.97%     | 5.12%      | 14.26%     | 3.32%     | 17.58%     |
| Safety (County)      | 4    | 9.78%       | 2.35%     | 12.12%     | 4.13%                 | 0.99%     | 5.12%      | 13.90%     | 3.34%     | 17.24%     |

**Table IV-6**

**Employee Contribution Rate at Sample Ages as of June 30, 2018 for FYE 2020**

| Member Type | Tier | Age 25 | Age 35 | Age 45 | Single Rate |
|-------------|------|--------|--------|--------|-------------|
| General     | 1    | 4.44%  | 5.55%  | 6.67%  | N/A         |
| General     | 2&3  | 6.99%  | 8.69%  | 10.45% | N/A         |
| General     | 4    | 5.17%  | 7.34%  | 10.01% | N/A         |
| Safety      | 1    | 6.63%  | 8.38%  | 9.90%  | N/A         |
| Safety      | 2&3  | 9.77%  | 12.35% | 14.03% | N/A         |
| Safety      | 4    | 10.71% | 14.50% | 18.49% | N/A         |

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

Table IV-7 below shows projected annual employer contributions for FYE 2020, 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 IV-7<br>Estimated Annual Employer Contributions for FYE 2020 |      |             |                  |                     |            |
|--|------|-------------|------------------|---------------------|------------|
| Member Type  | Tier | Normal Cost | UAL Amortization | Contributions Total |            |
| General (County)   | 1    | \$ 135,234  | \$ 39,599        | \$                  | 174,833    |
| General (County)   | 2&3  | 10,343,636  | 4,769,729        |                     | 15,113,364 |
| General (County)   | 4    | 4,885,006   | 2,599,330        |                     | 7,484,336  |
| General (Non-County)   | 1    | 10,971      | 9,394            |                     | 20,365     |
| General (Non-County)   | 2&3  | 839,130     | 1,131,538        |                     | 1,970,668  |
| General (Non-County)   | 4    | 396,297     | 616,647          |                     | 1,012,945  |
| Safety (County)  | 1    | -           | -                |                     | -          |
| Safety (County)  | 2&3  | 5,680,714   | 2,334,407        |                     | 8,015,122  |
| Safety (County)  | 4    | 1,924,165   | 812,602          |                     | 2,736,767  |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION V – 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, 2018.

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 V-1. As requested by TCERA, we have also included the Schedule of Funding Progress (Table V-2) and the Schedule of Employer Contributions (Table V-3).

| Table V-1<br>SCHEDULE OF FUNDED LIABILITIES BY TYPE<br>(in thousands) |   |                                   |  |                 |   |     |
|---|---|-----------------------------------|--|-----------------|---|-----|
| Valuation Date  | (A)<br>Active/Inactive Member Contributions | (B)<br>Retirees And Beneficiaries | (C)<br>Remaining Active Members' Liabilities | Reported Assets | Portion of Actuarial Liabilities Covered by Reported Assets (A) (B) | (C) |
| June 30, 2009   | \$ 208,638                                  | \$ 453,205                        | \$ 334,904                                   | \$ 919,179      | 100%  | 77% |
| 2010  | 223,373                                     | 506,035                           | 303,803                                      | 946,640         | 100%  | 72% |
| 2011  | 228,275                                     | 546,553                           | 297,316                                      | 969,636         | 100%  | 66% |
| 2012  | 231,491                                     | 570,367                           | 299,598                                      | 981,946         | 100%  | 60% |
| 2013  | 238,200                                     | 621,125                           | 326,732                                      | 1,048,160       | 100%  | 58% |
| 2014  | 252,883                                     | 660,147                           | 358,802                                      | 1,101,929       | 100%  | 53% |
| 2015  | 264,870                                     | 698,147                           | 395,418                                      | 1,156,587       | 100%  | 49% |
| 2016  | 272,740                                     | 748,703                           | 409,993                                      | 1,192,642       | 100%  | 42% |
| 2017  | 278,900                                     | 808,799                           | 485,707                                      | 1,461,755       | 100%  | 77% |
| 2018  | 287,078                                     | 869,729                           | 499,550                                      | 1,523,030       | 100%  | 73% |

*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, 2018

SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION

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

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

*June 30, 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, 2018

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

**Table V-3**  
**SCHEDULE OF EMPLOYER CONTRIBUTIONS**  
(dollars in thousands)

| <b>Year Ended<br/>June, 30</b> | <b>Actuarially<br/>Determined<br/>Contribution</b> | <b>Actual<br/>Contribution</b> | <b>Percentage<br/>Contributed</b> |
|--------------------------------|--|--------------------------------|-----------------------------------|
| 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%                              |

*June 30, 2016 and earlier numbers calculated by prior actuary*

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

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

The data for this valuation was provided by the Tulare County staff as of June 30, 2018. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

| SUMMARY OF TOTAL ACTIVE MEMBERSHIP  |                |                |        |
|-------------------------------------|----------------|----------------|--------|
|                                     | June 30, 2017  | June 30, 2018  | Change |
| <b>Total (General &amp; Safety)</b> |                |                |        |
| Count                               | 4,536          | 4,581          | 1.0%   |
| Average Age                         | 41.8           | 41.8           | -0.1%  |
| Average Service                     | 9.5            | 9.6            | 1.2%   |
| Annual Projected Payroll            | \$ 254,940,772 | \$ 262,713,817 | 3.0%   |
| Average Annual Pay                  | \$ 56,204      | \$ 57,349      | 2.0%   |

| SUMMARY OF INACTIVE MEMBERSHIP* |               |               |        |
|---------------------------------|---------------|---------------|--------|
|                                 | June 30, 2017 | June 30, 2018 | Change |
| <b>General</b>                  |               |               |        |
| Count                           | 1,686         | 1,741         | 3.3%   |
| Average Age                     | 44.6          | 44.2          | -0.8%  |
| Total Contribution Balance      | \$ 39,175,585 | \$ 40,050,143 | 2.2%   |
| Average Contribution Balance    | \$ 23,236     | \$ 23,004     | -1.0%  |
| <b>Safety</b>                   |               |               |        |
| Count                           | 268           | 291           | 8.6%   |
| Average Age                     | 39.9          | 39.7          | -0.6%  |
| Total Contribution Balance      | \$ 8,887,900  | \$ 9,707,077  | 9.2%   |
| Average Contribution Balance    | \$ 33,164     | \$ 33,358     | 0.6%   |
| <b>Total</b>                    |               |               |        |
| Count                           | 1,954         | 2,032         | 4.0%   |
| Average Age                     | 43.9          | 43.6          | -0.8%  |
| Total Contribution Balance      | \$ 48,063,485 | \$ 49,757,220 | 3.5%   |
| Average Contribution Balance    | \$ 24,597     | \$ 24,487     | -0.4%  |

\*Includes unclaimed accounts.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF RETIRED MEMBERSHIP |    |               |               |        |
|-------------------------------|----|---------------|---------------|--------|
|                               |    | June 30, 2017 | June 30, 2018 | Change |
| <b>General</b>                |    |               |               |        |
| Count                         |    | 2,579         | 2,658         | 3.1%   |
| Average Age                   |    | 70.4          | 70.7          | 0.4%   |
| Total Annual Allowance        | \$ | 51,970,685    | \$ 55,107,749 | 6.0%   |
| Average Annual Allowance      | \$ | 20,151        | \$ 20,733     | 2.9%   |
| <b>Safety</b>                 |    |               |               |        |
| Count                         |    | 493           | 534           | 8.3%   |
| Average Age                   |    | 64.3          | 64.5          | 0.2%   |
| Total Annual Allowance        | \$ | 16,699,239    | \$ 18,624,022 | 11.5%  |
| Average Annual Allowance      | \$ | 33,873        | \$ 34,876     | 3.0%   |
| <b>Total</b>                  |    |               |               |        |
| Count                         |    | 3,072         | 3,192         | 3.9%   |
| Average Age                   |    | 69.4          | 69.6          | 0.3%   |
| Total Annual Allowance        | \$ | 68,669,924    | \$ 73,731,771 | 7.4%   |
| Average Annual Allowance      | \$ | 22,353        | \$ 23,099     | 3.3%   |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF ACTIVE GENERAL MEMBERSHIP |               |             |                |        |
|--------------------------------------|---------------|-------------|----------------|--------|
|                                      | June 30, 2017 |             | June 30, 2018  | Change |
| General Tier 1                       |               |             |                |        |
| Count                                | 19            |             | 16             | -15.8% |
| Average Age                          | 62.5          |             | 63.9           | 2.4%   |
| Average Service                      | 34.2          |             | 34.2           | 0.0%   |
| Annual Projected Payroll             | \$            | 1,242,253   | \$ 1,085,586   | -12.6% |
| Average Annual Pay                   | \$            | 65,382      | \$ 67,849      | 3.8%   |
| General Tier 2 & 3                   |               |             |                |        |
| Count                                | 2,288         |             | 2,146          | -6.2%  |
| Average Age                          | 46.8          |             | 47.3           | 1.2%   |
| Average Service                      | 13.2          |             | 14.2           | 7.1%   |
| Annual Projected Payroll             | \$            | 135,243,680 | \$ 130,674,232 | -3.4%  |
| Average Annual Pay                   | \$            | 59,110      | \$ 60,892      | 3.0%   |
| General Tier 4                       |               |             |                |        |
| Count                                | 1,353         |             | 1,546          | 14.3%  |
| Average Age                          | 34.8          |             | 35.5           | 1.9%   |
| Average Service                      | 2.0           |             | 2.4            | 21.7%  |
| Annual Projected Payroll             | \$            | 59,069,274  | \$ 71,259,778  | 20.6%  |
| Average Annual Pay                   | \$            | 43,658      | \$ 46,093      | 5.6%   |
| General Total                        |               |             |                |        |
| Count                                | 3,660         |             | 3,708          | 1.3%   |
| Average Age                          | 42.4          |             | 42.5           | 0.1%   |
| Average Service                      | 9.2           |             | 9.4            | 1.8%   |
| Annual Projected Payroll             | \$            | 195,555,207 | \$ 203,019,596 | 3.8%   |
| Average Annual Pay                   | \$            | 53,430      | \$ 54,752      | 2.5%   |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF ACTIVE SAFETY MEMBERSHIP |               |            |               |         |
|-------------------------------------|---------------|------------|---------------|---------|
|                                     | June 30, 2017 |            | June 30, 2018 | Change  |
| Safety Tier 1                       |               |            |               |         |
| Count                               |               | 2          | -             | -100.0% |
| Average Age                         |               | 63.8       | -             | -100.0% |
| Average Service                     |               | 38.5       | -             | -100.0% |
| Annual Projected Payroll            | \$            | 215,881    | \$ -          | -100.0% |
| Average Annual Pay                  | \$            | 107,941    | \$ -          | -100.0% |
| Safety Tier 2 & 3                   |               |            |               |         |
| Count                               |               | 658        | 602           | -8.5%   |
| Average Age                         |               | 42.1       | 42.6          | 1.4%    |
| Average Service                     |               | 13.3       | 14.2          | 6.2%    |
| Annual Projected Payroll            | \$            | 47,346,276 | \$ 44,280,283 | -6.5%   |
| Average Annual Pay                  | \$            | 71,955     | \$ 73,555     | 2.2%    |
| Safety Tier 4                       |               |            |               |         |
| Count                               |               | 216        | 271           | 25.5%   |
| Average Age                         |               | 30.6       | 30.9          | 1.1%    |
| Average Service                     |               | 2.2        | 2.4           | 10.6%   |
| Annual Projected Payroll            | \$            | 11,823,408 | \$ 15,413,938 | 30.4%   |
| Average Annual Pay                  | \$            | 54,738     | \$ 56,878     | 3.9%    |
| Safety Total                        |               |            |               |         |
| Count                               |               | 876        | 873           | -0.3%   |
| Average Age                         |               | 39.3       | 39.0          | -0.7%   |
| Average Service                     |               | 10.7       | 10.5          | -1.1%   |
| Annual Projected Payroll            | \$            | 59,385,565 | \$ 59,694,221 | 0.5%    |
| Average Annual Pay                  | \$            | 67,792     | \$ 68,378     | 0.9%    |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF RETIRED GENERAL MEMBERSHIP |               |            |               |            |        |
|---------------------------------------|---------------|------------|---------------|------------|--------|
|                                       | June 30, 2017 |            | June 30, 2018 |            | Change |
| Service Retirement                    |               |            |               |            |        |
| Count                                 | 2,039         |            | 2,111         |            | 3.5%   |
| Average Age                           | 70.4          |            | 70.7          |            | 0.4%   |
| Total Annual Allowance                | \$            | 43,535,018 | \$            | 46,236,407 | 6.2%   |
| Average Annual Allowance              | \$            | 21,351     | \$            | 21,903     | 2.6%   |
| Disability                            |               |            |               |            |        |
| Count                                 | 205           |            | 200           |            | -2.4%  |
| Average Age                           | 63.1          |            | 63.8          |            | 1.0%   |
| Total Annual Allowance                | \$            | 4,066,875  | \$            | 4,095,378  | 0.7%   |
| Average Annual Allowance              | \$            | 19,838     | \$            | 20,477     | 3.2%   |
| Beneficiaries                         |               |            |               |            |        |
| Count                                 | 335           |            | 347           |            | 3.6%   |
| Average Age                           | 74.7          |            | 74.6          |            | -0.2%  |
| Total Annual Allowance                | \$            | 4,368,792  | \$            | 4,775,964  | 9.3%   |
| Average Annual Allowance              | \$            | 13,041     | \$            | 13,764     | 5.5%   |
| Total                                 |               |            |               |            |        |
| Count                                 | 2,579         |            | 2,658         |            | 3.1%   |
| Average Age                           | 70.4          |            | 70.7          |            | 0.4%   |
| Total Annual Allowance                | \$            | 51,970,685 | \$            | 55,107,749 | 6.0%   |
| Average Annual Allowance              | \$            | 20,151     | \$            | 20,733     | 2.9%   |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF RETIRED SAFETY MEMBERSHIP |               |            |               |        |
|--------------------------------------|---------------|------------|---------------|--------|
|                                      | June 30, 2017 |            | June 30, 2018 | Change |
| Service Retirement                   |               |            |               |        |
| Count                                |               | 284        | 311           | 9.5%   |
| Average Age                          |               | 66.1       | 66.2          | 0.1%   |
| Total Annual Allowance               | \$            | 11,359,916 | \$ 12,707,792 | 11.9%  |
| Average Annual Allowance             | \$            | 40,000     | \$ 40,861     | 2.2%   |
| Disability                           |               |            |               |        |
| Count                                |               | 120        | 130           | 8.3%   |
| Average Age                          |               | 58.5       | 58.5          | 0.0%   |
| Total Annual Allowance               | \$            | 3,538,112  | \$ 3,968,630  | 12.2%  |
| Average Annual Allowance             | \$            | 29,484     | \$ 30,528     | 3.5%   |
| Beneficiaries                        |               |            |               |        |
| Count                                |               | 89         | 93            | 4.5%   |
| Average Age                          |               | 66.5       | 67.0          | 0.7%   |
| Total Annual Allowance               | \$            | 1,801,211  | \$ 1,947,600  | 8.1%   |
| Average Annual Allowance             | \$            | 20,238     | \$ 20,942     | 3.5%   |
| Total                                |               |            |               |        |
| Count                                |               | 493        | 534           | 8.3%   |
| Average Age                          |               | 64.3       | 64.5          | 0.2%   |
| Total Annual Allowance               | \$            | 16,699,239 | \$ 18,624,022 | 11.5%  |
| Average Annual Allowance             | \$            | 33,873     | \$ 34,876     | 3.0%   |



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY<br>OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2018<br>TIER I |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |       |               |
|--|---------|---------------|--------|---------------|--------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|---------|---------------|-------|---------------|
| YEARS OF CREDITED SERVICE  |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |       |               |
| Attained Age   | Under 1 |               | 1 to 4 |               | 5 to 9 |               | 10 to 14 |               | 15 to 19 |               | 20 to 24 |               | 25 to 29 |               | 30 to 34 |               | 35 to 39 |               | 40 & up |               | Total |               |
|  | No.     | Average Comp. | No.    | Average Comp. | No.    | Average Comp. | No.      | Average Comp. | No.      | Average Comp. | No.      | Average Comp. | No.      | Average Comp. | No.      | Average Comp. | No.      | Average Comp. | No.     | Average Comp. | No.   | Average Comp. |
| Under 25   | 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             | 1        | 86,081        | 2       | 66,218        | 3     | 72,839        |
| 60 to 64   | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 1        | 40,454        | 0        | 0             | 1        | 46,410        | 5       | 65,120        | 7     | 58,923        |
| 65 to 69   | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 1        | 72,182        | 0        | 0             | 2        | 110,014       | 2       | 61,665        | 5     | 83,108        |
| 70 & up  | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 1       | 39,067        | 1     | 39,067        |
| Total  | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 2        | 56,318        | 0        | 0             | 4        | 88,130        | 10      | 62,043        | 16    | 67,849        |

| AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY<br>OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2018<br>TIER 2 & 3 |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |       |               |
|--|---------|---------------|--------|---------------|--------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|---------|---------------|-------|---------------|
| YEARS OF CREDITED SERVICE  |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |       |               |
| Attained Age   | Under 1 |               | 1 to 4 |               | 5 to 9 |               | 10 to 14 |               | 15 to 19 |               | 20 to 24 |               | 25 to 29 |               | 30 to 34 |               | 35 to 39 |               | 40 & up |               | Total |               |
|  | 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          | 2      | \$ 38,043     | 0        | \$ 0          | 0        | \$ 0          | 0        | \$ 0          | 0        | \$ 0          | 0        | \$ 0          | 0        | \$ 0          | 0       | \$ 0          | 2     | \$ 38,043     |
| 25 to 29   | 0       | 0             | 0      | 0             | 31     | 45,925        | 5        | 46,243        | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 36    | 45,969        |
| 30 to 34   | 0       | 0             | 11     | 56,357        | 132    | 56,959        | 59       | 50,373        | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 202   | 55,002        |
| 35 to 39   | 0       | 0             | 16     | 60,493        | 134    | 60,371        | 177      | 62,392        | 40       | 51,793        | 1        | 48,939        | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 368   | 60,385        |
| 40 to 44   | 1       | 32,784        | 5      | 80,299        | 99     | 60,453        | 109      | 59,625        | 108      | 61,439        | 30       | 64,735        | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 352   | 61,067        |
| 45 to 49   | 0       | 0             | 3      | 112,389       | 48     | 54,408        | 107      | 63,935        | 103      | 56,055        | 56       | 51,815        | 5        | 57,807        | 0        | 0             | 0        | 0             | 0       | 0             | 322   | 58,243        |
| 50 to 54   | 0       | 0             | 3      | 43,158        | 46     | 53,192        | 83       | 59,675        | 79       | 60,100        | 50       | 60,345        | 27       | 60,306        | 4        | 54,505        | 0        | 0             | 0       | 0             | 292   | 58,701        |
| 55 to 59   | 0       | 0             | 2      | 76,315        | 41     | 63,037        | 84       | 65,061        | 79       | 61,800        | 52       | 61,063        | 41       | 72,580        | 16       | 85,413        | 3        | 55,448        | 0       | 0             | 318   | 65,310        |
| 60 to 64   | 0       | 0             | 3      | 96,355        | 21     | 60,694        | 39       | 67,400        | 47       | 62,154        | 34       | 63,991        | 22       | 63,432        | 18       | 70,926        | 8        | 70,798        | 0       | 0             | 192   | 65,248        |
| 65 to 69   | 0       | 0             | 1      | 79,736        | 11     | 65,932        | 12       | 73,118        | 13       | 100,677       | 5        | 87,415        | 3        | 80,683        | 2        | 95,252        | 0        | 0             | 0       | 0             | 47    | 82,145        |
| 70 & up  | 0       | 0             | 0      | 0             | 3      | 140,128       | 3        | 72,685        | 5        | 38,275        | 3        | 64,016        | 0        | 0             | 1        | 40,670        | 0        | 0             | 0       | 0             | 15    | 70,836        |
| Total  | 1       | 32,784        | 44     | 67,668        | 568    | 58,373        | 678      | 61,547        | 474      | 60,195        | 231      | 60,130        | 98       | 66,639        | 41       | 75,426        | 11       | 66,611        | 0       | 0             | 2,146 | 60,892        |

## APPENDIX A – MEMBERSHIP INFORMATION



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY<br>OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2018<br>TIER 1 |         |                  |        |                  |        |                  |          |                  |          |                  |          |                  |          |                  |          |                  |          |                  |         |                  |       |                  |
|---|---------|------------------|--------|------------------|--------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|---------|------------------|-------|------------------|
| YEARS OF CREDITED SERVICE   |         |                  |        |                  |        |                  |          |                  |          |                  |          |                  |          |                  |          |                  |          |                  |         |                  |       |                  |
| Attained<br>Age   | Under 1 |                  | 1 to 4 |                  | 5 to 9 |                  | 10 to 14 |                  | 15 to 19 |                  | 20 to 24 |                  | 25 to 29 |                  | 30 to 34 |                  | 35 to 39 |                  | 40 & up |                  | Total |                  |
|   | No.     | Average<br>Comp. | No.    | Average<br>Comp. | No.    | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.     | Average<br>Comp. | No.   | Average<br>Comp. |
| Under 25  | 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<br>OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2018<br>TIER 2 & 3 |         |                  |        |                  |        |                  |          |                  |          |                  |          |                  |          |                  |          |                  |          |                  |         |                  |        |                  |
|---|---------|------------------|--------|------------------|--------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|---------|------------------|--------|------------------|
| YEARS OF CREDITED SERVICE   |         |                  |        |                  |        |                  |          |                  |          |                  |          |                  |          |                  |          |                  |          |                  |         |                  |        |                  |
| Attained<br>Age   | Under 1 |                  | 1 to 4 |                  | 5 to 9 |                  | 10 to 14 |                  | 15 to 19 |                  | 20 to 24 |                  | 25 to 29 |                  | 30 to 34 |                  | 35 to 39 |                  | 40 & up |                  | Total  |                  |
|   | No.     | Average<br>Comp. | No.    | Average<br>Comp. | No.    | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.     | Average<br>Comp. | No.    | Average<br>Comp. |
| Under 25  | 0       | \$               | 0      | \$               | 0      | \$               | 0        | \$               | 0        | \$               | 0        | \$               | 0        | \$               | 0        | \$               | 0        | \$               | 0       | \$               | 0      | \$               |
| 25 to 29  | 0       | 0                | 1      | 67,408           | 20     | 61,891           | 2        | 62,408           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 23     | 62,176           |
| 30 to 34  | 1       | 68,966           | 2      | 61,343           | 55     | 62,476           | 39       | 71,762           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 97               | 66,253 |                  |
| 35 to 39  | 0       | 0                | 5      | 68,410           | 37     | 64,405           | 86       | 71,883           | 9        | 69,308           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 137              | 69,567 |                  |
| 40 to 44  | 0       | 0                | 0      | 77,859           | 20     | 68,786           | 54       | 74,076           | 38       | 75,907           | 6        | 96,470           | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 119              | 74,933 |                  |
| 45 to 49  | 0       | 0                | 0      | 0                | 13     | 65,765           | 32       | 73,276           | 33       | 81,817           | 20       | 80,342           | 2        | 95,261           | 0        | 0                | 0        | 0                | 0       | 100              | 76,971 |                  |
| 50 to 54  | 0       | 0                | 1      | 73,063           | 7      | 69,614           | 9        | 74,109           | 17       | 69,228           | 26       | 85,829           | 10       | 83,442           | 11       | 118,737          | 0        | 0                | 0       | 81               | 83,658 |                  |
| 55 to 59  | 0       | 0                | 0      | 0                | 2      | 83,973           | 9        | 82,513           | 5        | 76,186           | 6        | 69,608           | 3        | 79,712           | 5        | 83,801           | 0        | 0                | 0       | 30               | 78,909 |                  |
| 60 to 64  | 0       | 0                | 0      | 0                | 1      | 83,381           | 2        | 85,578           | 3        | 60,081           | 1        | 85,954           | 2        | 84,719           | 1        | 81,866           | 0        | 0                | 0       | 10               | 77,204 |                  |
| 65 to 69  | 0       | 0                | 0      | 0                | 2      | 67,884           | 2        | 82,467           | 0        | 0                | 0        | 0                | 0        | 0                | 1        | 62,540           | 0        | 0                | 0       | 5                | 72,648 |                  |
| 70 & up   | 0       | 0                | 0      | 0                | 0      | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 0      |                  |
| Total   | 1       | 68,966           | 10     | 68,306           | 157    | 64,726           | 235      | 73,175           | 105      | 75,678           | 59       | 83,404           | 17       | 84,324           | 18       | 103,862          | 0        | 0                | 0       | 602              | 73,555 |                  |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY<br>OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2018<br>THER 4 |                           |                  |        |                  |          |                  |          |                  |          |                  |       |                  |     |                  |     |                  |
|---|---------------------------|------------------|--------|------------------|----------|------------------|----------|------------------|----------|------------------|-------|------------------|-----|------------------|-----|------------------|
| Attained<br>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<br>Comp. | No.    | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.   | Average<br>Comp. | No. | Average<br>Comp. | No. | Average<br>Comp. |
| Under 25  | 17                        | \$ 48,065        | 14     | \$ 55,541        | 0        | \$ 0             | 0        | \$ 0             | 0        | \$ 0             | 0     | \$ 0             | 0   | \$ 0             | 31  | \$ 51,441        |
| 25 to 29  | 38                        | 50,340           | 76     | 56,036           | 8        | 65,921           | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 122 | 54,910           |
| 30 to 34  | 13                        | 49,725           | 51     | 59,548           | 4        | 61,398           | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 68  | 57,779           |
| 35 to 39  | 7                         | 55,460           | 15     | 57,438           | 4        | 65,801           | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 26  | 58,192           |
| 40 to 44  | 2                         | 55,597           | 7      | 63,402           | 0        | 0                | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 9   | 61,667           |
| 45 to 49  | 0                         | 0                | 3      | 60,304           | 3        | 66,912           | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 6   | 63,608           |
| 50 to 54  | 1                         | 56,478           | 3      | 104,061          | 2        | 70,610           | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 6   | 84,980           |
| 55 to 59  | 0                         | 0                | 2      | 75,071           | 0        | 0                | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 2   | 75,071           |
| 60 to 64  | 0                         | 0                | 1      | 81,569           | 0        | 0                | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 1   | 81,569           |
| 65 to 69  | 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                |
| Total   | 78                        | 50,414           | 172    | 58,741           | 21       | 65,625           | 0        | 0                | 0        | 0                | 0     | 0                | 0   | 0                | 271 | 56,878           |

| Average Increases in Pay<br>(for upcoming year, based on valuation data) |  |       |
|--|--|-------|
| Longevity and Promotion Component  |  | 2.53% |
| Wage Inflation Component   |  | 3.00% |
| Total  |  | 5.53% |



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| <b>AGE DISTRIBUTION OF TOTAL INACTIVE PARTICIPANTS<br/>PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2018</b> |                        |                     |  |   |                      |  |  |                     |  |                      |
|--|------------------------|---------------------|--|---|----------------------|--|--|---------------------|--|----------------------|
| Age  | Disability Retirements |                     |  | Normal, Early Deferred Vested Retirements |                      |  | Surviving Spouses and Beneficiaries Receiving Benefits |                     |  | Total                |
|  | Number                 | Annual Benefit      |  | Number                                    | Annual Benefit       |  | Number   | Annual Benefit      |  | Annual Benefit       |
| Under 55   | 85                     | \$ 2,346,790        |  | 70  | \$ 1,105,604         |  | 34   | \$ 404,254          |  | \$ 3,856,648         |
| 55-59  | 47                     | 1,114,313           |  | 198                                       | 4,594,608            |  | 22   | 408,663             |  | 6,117,584            |
| 60-64  | 61                     | 1,380,531           |  | 399                                       | 9,897,783            |  | 46   | 641,963             |  | 11,920,277           |
| 65-69  | 56                     | 1,346,290           |  | 583                                       | 15,048,836           |  | 53   | 861,218             |  | 17,256,344           |
| 70-74  | 45                     | 1,150,976           |  | 579                                       | 15,586,515           |  | 77   | 1,388,698           |  | 18,126,189           |
| 75-79  | 26                     | 533,664             |  | 294                                       | 7,012,385            |  | 71   | 1,027,198           |  | 8,573,247            |
| 80 & Over  | 10                     | 191,444             |  | 299                                       | 5,698,468            |  | 137  | 1,991,570           |  | 7,881,482            |
| <b>Total</b>   | <b>330</b>             | <b>\$ 8,064,008</b> |  | <b>2,422</b>                              | <b>\$ 58,944,199</b> |  | <b>440</b>   | <b>\$ 6,723,564</b> |  | <b>\$ 73,731,771</b> |

| <b>AGE DISTRIBUTION OF INACTIVE GENERAL PARTICIPANTS<br/>PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2018</b> |                        |                     |  |   |                      |  |  |                     |  |                      |
|--|------------------------|---------------------|--|---|----------------------|--|--|---------------------|--|----------------------|
| Age  | Disability Retirements |                     |  | Normal, Early Deferred Vested Retirements |                      |  | Surviving Spouses and Beneficiaries Receiving Benefits |                     |  | Total                |
|  | Number                 | Annual Benefit      |  | Number                                    | Annual Benefit       |  | Number   | Annual Benefit      |  | Annual Benefit       |
| Under 55   | 33                     | \$ 678,389          |  | 45  | \$ 512,946           |  | 20   | \$ 185,848          |  | \$ 1,377,183         |
| 55-59  | 30                     | 631,653             |  | 146                                       | 2,492,794            |  | 12   | 163,290             |  | 3,287,737            |
| 60-64  | 44                     | 892,107             |  | 335                                       | 7,165,505            |  | 33   | 357,165             |  | 8,414,777            |
| 65-69  | 38                     | 740,097             |  | 517                                       | 12,083,773           |  | 39   | 479,405             |  | 13,303,275           |
| 70-74  | 33                     | 762,784             |  | 517                                       | 12,759,289           |  | 68   | 1,175,206           |  | 14,697,279           |
| 75-79  | 18                     | 319,990             |  | 266                                       | 6,087,671            |  | 58   | 780,830             |  | 7,188,491            |
| 80 & Over  | 4                      | 70,358              |  | 285                                       | 5,134,429            |  | 117  | 1,634,220           |  | 6,839,007            |
| <b>Total</b>   | <b>200</b>             | <b>\$ 4,095,378</b> |  | <b>2,111</b>                              | <b>\$ 46,236,407</b> |  | <b>347</b>   | <b>\$ 4,775,964</b> |  | <b>\$ 55,107,749</b> |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018

APPENDIX A – MEMBERSHIP INFORMATION

| AGE DISTRIBUTION OF INACTIVE SAFETY PARTICIPANTS<br>PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2018 |                        |                     |   |                      |                                     |                     |                    |                      |            |                      |
|---|------------------------|---------------------|---|----------------------|-------------------------------------|---------------------|--------------------|----------------------|------------|----------------------|
| 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       | Number     | Annual Benefit       |
| Under 55  | 52                     | \$ 1,668,401        | 25  | \$ 592,658           | 14                                  | \$ 218,406          | 91                 | \$ 2,479,465         | 91         | \$ 2,479,465         |
| 55-59   | 17                     | 482,660             | 52  | 2,101,814            | 10                                  | 245,373             | 79                 | 2,829,847            | 79         | 2,829,847            |
| 60-64   | 17                     | 488,424             | 64  | 2,732,278            | 13                                  | 284,798             | 94                 | 3,505,500            | 94         | 3,505,500            |
| 65-69   | 18                     | 606,193             | 66  | 2,965,063            | 14                                  | 381,813             | 98                 | 3,953,069            | 98         | 3,953,069            |
| 70-74   | 12                     | 388,192             | 62  | 2,827,226            | 9                                   | 213,492             | 83                 | 3,428,910            | 83         | 3,428,910            |
| 75-79   | 8                      | 213,674             | 28  | 924,714              | 13                                  | 246,368             | 49                 | 1,384,756            | 49         | 1,384,756            |
| 80 & Over   | 6                      | 121,086             | 14  | 564,039              | 20                                  | 357,350             | 40                 | 1,042,475            | 40         | 1,042,475            |
| <b>Total</b>  | <b>130</b>             | <b>\$ 3,968,630</b> | <b>311</b>                                | <b>\$ 12,707,792</b> | <b>93</b>                           | <b>\$ 1,947,600</b> | <b>534</b>         | <b>\$ 18,624,022</b> | <b>534</b> | <b>\$ 18,624,022</b> |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| Retirees and Beneficiaries Added to and Removed From Payroll |                         |                         |   |                           |  |                   |                     |                                      |                                |
|--|-------------------------|-------------------------|---|---------------------------|--|-------------------|---------------------|--------------------------------------|--------------------------------|
| Plan Year<br>Ended June<br>30                                | At Beginning<br>of Year | Added<br>During<br>Year | Annual Allowances<br>Added to the Rolls | Removed<br>During<br>Year | Annual Allowances<br>Removed from the<br>Rolls | At End<br>of Year | Annual<br>Allowance | % Increase<br>in Annual<br>Allowance | Average<br>Annual<br>Allowance |
| 2007   | 1,840                   | 130                     | \$ 2,331,351                            | 57                        | \$ 676,524                                     | 1,913             | \$ 31,014,000       | 8.00%                                | \$ 16,212                      |
| 2008   | 1,913                   | 164                     | \$ 3,444,133                            | 70                        | \$ 827,830                                     | 2,007             | \$ 34,244,000       | 10.40%                               | \$ 17,062                      |
| 2009   | 2,007                   | 157                     | \$ 3,418,929                            | 65                        | \$ 840,949                                     | 2,099             | \$ 37,485,607       | 9.47%                                | \$ 17,859                      |
| 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                            | 79                        | \$ 896,529                                     | 3,072             | \$ 68,669,924       | 6.81%                                | \$ 22,353                      |

*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, 2018

APPENDIX A – MEMBERSHIP INFORMATION

| Reconciliation of System Membership Since Prior Valuation |        |                 |                               |                     |                 |         |               |                                    |      |               |        |
|---|--------|-----------------|-------------------------------|---------------------|-----------------|---------|---------------|------------------------------------|------|---------------|--------|
| Total Members   |        |                 |                               |                     |                 |         |               |                                    |      |               |        |
|   | Active | Deferred Vested | Deferred Vested - Transferred | Ordinary Disability | Duty Disability | Retired | Beneficiaries | Non-Vested Terminations Due Refund | QDRO | Deferred QDRO | Totals |
| June 30, 2017   | 4,536  | 393             | 623                           | 126                 | 199             | 2,323   | 389           | 922                                | 35   | 16            | 9,562  |
| New Entrants  | 466    |                 |                               |                     |                 |         |               |                                    |      |               | 466    |
| Rehires   | 16     | (5)             | (2)                           |                     |                 | (1)     |               | (8)                                |      |               | -      |
| Duty Disabilities   | (9)    |                 |                               |                     | 9               |         |               |                                    |      |               | -      |
| Ordinary Disabilities                                     | (5)    |                 |                               | 5                   |                 |         |               |                                    |      |               | -      |
| Retirements   | (108)  | (17)            | (32)                          |                     |                 | 158     |               | (1)                                |      |               | -      |
| Vested Terminations                                       | (62)   | 63              | (1)                           |                     |                 |         |               |                                    |      |               | -      |
| Non-Vested Terminations and                               | (146)  | (5)             | (1)                           | (3)                 | (1)             | (31)    |               | 140                                |      |               | (47)   |
| Death without beneficiary                                 |        |                 |                               |                     |                 |         |               |                                    |      |               | -      |
| Death with beneficiary                                    |        |                 |                               | (4)                 | (2)             | (23)    | 29            | (27)                               |      |               | -      |
| Transfers   | (20)   | (21)            | 68                            |                     |                 |         |               |                                    |      |               | -      |
| Beneficiary Deaths  |        |                 |                               |                     |                 |         | (22)          |                                    |      |               | (22)   |
| Domestic Relations Orders                                 |        |                 |                               |                     |                 |         |               |                                    | 4    |               | 4      |
| Deferred Domestic Relations Orders                        |        |                 |                               |                     |                 |         |               |                                    |      | 7             | 7      |
| Withdrawals Paid  | (87)   | (13)            | (6)                           |                     |                 |         |               | (57)                               |      | (4)           | (167)  |
| Data Corrections  |        | (1)             |                               |                     | 1               | (4)     | (1)           | 1                                  | 6    |               | 2      |
| June 30, 2018   | 4,581  | 394             | 649                           | 124                 | 206             | 2,422   | 395           | 970                                | 45   | 19            | 9,805  |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018

APPENDIX A – MEMBERSHIP INFORMATION

| Reconciliation of System Membership Since Prior Valuation |                 |                 |                        |                     |                 |            |               |            |      |                      |
|---|-----------------|-----------------|------------------------|---------------------|-----------------|------------|---------------|------------|------|----------------------|
|   | General Members |                 |                        |                     |                 | Non-Vested |               |            |      |                      |
|   | Active          | Deferred Vested | Deferred - Transferred | Ordinary Disability | Duty Disability | Retired    | Beneficiaries | Due Refund | QDRO | Deferred QDRO Totals |
| June 30, 2017   | 3,660           | 345             | 522                    | 111                 | 94              | 2,039      | 314           | 811        | 21   | 8                    |
| New Entrants  | 384             |                 |                        |                     |                 |            |               |            |      |                      |
| Rehires   | 15              | (3)             | (2)                    |                     |                 | (1)        |               | (7)        |      |                      |
| Duty Disabilities   | (1)             |                 |                        |                     | 1               |            |               |            |      |                      |
| Ordinary Disabilities                                     | (3)             |                 |                        | 3                   |                 |            |               |            |      |                      |
| Retirements   | (82)            | (17)            | (28)                   |                     |                 | 127        |               |            |      |                      |
| Vested Terminations                                       | (46)            | 46              |                        |                     |                 |            |               |            |      |                      |
| Non-Vested Terminations and                               | (125)           | (4)             | (1)                    | (3)                 | (1)             | (31)       |               | 118        |      |                      |
| Death without beneficiary                                 |                 |                 |                        |                     |                 |            |               |            |      |                      |
| Death with beneficiary                                    |                 |                 |                        | (4)                 | (2)             | (20)       | 26            |            |      |                      |
| Transfers   | (18)            | (16)            | 53                     |                     |                 |            |               | (23)       |      |                      |
| Beneficiary Deaths  |                 |                 |                        |                     |                 |            | (20)          |            |      |                      |
| Domestic Relations Orders                                 |                 |                 |                        |                     |                 |            |               |            | 2    |                      |
| Deferred Domestic Relations Orders                        |                 |                 |                        |                     |                 |            |               |            |      | 4                    |
| Withdrawals Paid  | (76)            | (10)            | (3)                    |                     |                 |            |               | (50)       | 5    | (2)                  |
| Data Corrections  |                 | (1)             |                        |                     | 1               | (3)        | (1)           | 1          |      |                      |
| June 30, 2018   | 3,708           | 340             | 541                    | 107                 | 93              | 2,111      | 319           | 850        | 28   | 10                   |
|   |                 |                 |                        |                     |                 |            |               |            |      | 8,107                |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018

APPENDIX A – MEMBERSHIP INFORMATION

| Reconciliation of System Membership Since Prior Valuation |        |          |        |             |                     |                 |         |               |                                    |      |                      |
|---|--------|----------|--------|-------------|---------------------|-----------------|---------|---------------|------------------------------------|------|----------------------|
| Safety Members  |        |          |        |             |                     |                 |         |               |                                    |      |                      |
|   | Active | Deferred |        |             | Ordinary Disability | Duty Disability | Retired | Beneficiaries | Non-Vested Terminations Due Refund | QDRO | Deferred QDRO Totals |
|   |        | Active   | Vested | Transferred |                     |                 |         |               |                                    |      |                      |
| June 30, 2017   | 876    | 48       | 101    | 15          | 105                 | 284             | 75      | 111           | 14                                 | 8    | 1,637                |
| New Entrants  | 82     |          |        |             |                     |                 |         |               |                                    |      | 82                   |
| Rehires   | 1      | (2)      |        |             |                     |                 |         | (1)           |                                    |      | (2)                  |
| Duty Disabilities   | (8)    |          |        |             | 8                   |                 |         |               |                                    |      |                      |
| Ordinary Disabilities                                     | (2)    |          |        | 2           |                     |                 |         |               |                                    |      |                      |
| Retirements   | (26)   |          | (4)    |             |                     | 31              |         | (1)           |                                    |      |                      |
| Vested Terminations                                       | (16)   | 17       | (1)    |             |                     |                 |         | 22            |                                    |      |                      |
| Non-Vested Terminations and                               | (21)   | (1)      |        |             |                     |                 |         |               |                                    |      |                      |
| Death without beneficiary                                 |        |          |        |             |                     | (3)             | 3       |               |                                    |      |                      |
| Death with beneficiary                                    |        |          |        |             |                     |                 |         |               |                                    |      |                      |
| Transfers   | (2)    | (5)      | 15     |             |                     |                 | (2)     | (4)           |                                    |      | 4                    |
| Beneficiary Deaths  |        |          |        |             |                     |                 |         |               |                                    |      | (2)                  |
| Domestic Relations Orders                                 |        |          |        |             |                     |                 |         |               | 2                                  |      | 2                    |
| Deferred Domestic Relations Orders                        |        |          |        |             |                     |                 |         |               |                                    | 3    | 3                    |
| Withdrawals Paid  | (11)   | (3)      | (3)    |             |                     | (1)             |         | (7)           | 1                                  | (2)  | (26)                 |
| Data Corrections  |        |          |        |             |                     |                 |         |               |                                    |      | -                    |
| June 30, 2018   | 873    | 54       | 108    | 17          | 113                 | 311             | 76      | 120           | 17                                 | 9    | 1,698                |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

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

The methods and assumptions used in the actuarial valuation as of June 30, 2018 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 prior 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, 2018**

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

**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, 2014 through June 30, 2017.

**1. Rate of Return**

Assets are assumed to earn 7.25% net of investment and administrative expenses.

**2. Inflation**

The Consumer Price Index (CPI) is assumed to increase at the rate of 3.00% per year.

**3. Post Retirement COLA**

Benefits are assumed to increase after retirement at the rate of 2.7% 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 \$121,388 for calendar year 2018 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 7.25%.

**6. Family Composition**

Percentage married for all active members who retire, become disabled, or die during active service is shown below. Male members are assumed to be three years older than their wives, and female members are assumed to be two years younger than their husbands.

| Division | Gender | Percentage |
|----------|--------|------------|
| General  | Males  | 85%        |
| General  | Female | 65%        |
| Safety   | Male   | 90%        |
| Safety   | Female | 70%        |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

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

**7. Increases in Pay**

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

Additional longevity and promotion component:

| Longevity and Promotion<br>Increases |         |        |
|--------------------------------------|---------|--------|
| Service                              | General | Safety |
| 0                                    | 8.00%   | 8.00%  |
| 1                                    | 6.50%   | 6.00%  |
| 2                                    | 5.50%   | 5.00%  |
| 3                                    | 4.00%   | 4.50%  |
| 4                                    | 3.00%   | 4.25%  |
| 5                                    | 2.00%   | 4.00%  |
| 6                                    | 1.75%   | 3.00%  |
| 7                                    | 1.50%   | 2.50%  |
| 8                                    | 1.00%   | 2.00%  |
| 9                                    | 1.00%   | 1.75%  |
| 10                                   | 1.00%   | 1.50%  |
| 11                                   | 1.00%   | 1.00%  |
| 12                                   | 1.00%   | 0.50%  |
| 13                                   | 1.00%   | 0.50%  |
| 14                                   | 1.00%   | 0.50%  |
| 15                                   | 1.00%   | 0.50%  |
| 16                                   | 1.00%   | 0.50%  |
| 17                                   | 1.00%   | 0.50%  |
| 18                                   | 1.00%   | 0.50%  |
| 19                                   | 1.00%   | 0.50%  |
| 20                                   | 1.00%   | 0.50%  |
| 21                                   | 1.00%   | 0.50%  |
| 22                                   | 1.00%   | 0.50%  |
| 23                                   | 1.00%   | 0.50%  |
| 24                                   | 1.00%   | 0.50%  |
| 25+                                  | 0.50%   | 0.50%  |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

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

**8. Termination**

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



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

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 53

**9. 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%           | 50%             | 60%    |
| 10-20   | 85%           | 65%             | 60%    |
| 20+     | 85%           | 65%             | 100%   |

**10. Reciprocal Transfers**

65% of 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 5.00%.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS**

**11. 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%            | 0.010% | 0.050%   | 0.560% |
| 36          | 0.020%              | 0.020% | 0.080%            | 0.010% | 0.050%   | 0.580% |
| 37          | 0.020%              | 0.020% | 0.080%            | 0.010% | 0.050%   | 0.600% |
| 38          | 0.030%              | 0.030% | 0.120%            | 0.010% | 0.050%   | 0.620% |
| 39          | 0.030%              | 0.030% | 0.130%            | 0.010% | 0.050%   | 0.640% |
| 40          | 0.030%              | 0.030% | 0.140%            | 0.010% | 0.075%   | 0.660% |
| 41          | 0.040%              | 0.045% | 0.160%            | 0.010% | 0.075%   | 0.670% |
| 42          | 0.040%              | 0.045% | 0.170%            | 0.010% | 0.080%   | 0.680% |
| 43          | 0.040%              | 0.045% | 0.180%            | 0.010% | 0.085%   | 0.690% |
| 44          | 0.050%              | 0.050% | 0.190%            | 0.010% | 0.090%   | 0.700% |
| 45          | 0.050%              | 0.055% | 0.200%            | 0.010% | 0.095%   | 0.750% |
| 46          | 0.050%              | 0.060% | 0.220%            | 0.010% | 0.100%   | 0.800% |
| 47          | 0.060%              | 0.070% | 0.240%            | 0.010% | 0.150%   | 0.850% |
| 48          | 0.070%              | 0.080% | 0.260%            | 0.010% | 0.200%   | 0.900% |
| 49          | 0.080%              | 0.090% | 0.280%            | 0.010% | 0.250%   | 0.950% |
| 50          | 0.090%              | 0.100% | 0.300%            | 0.020% | 0.300%   | 1.000% |
| 51          | 0.100%              | 0.150% | 0.320%            | 0.020% | 0.350%   | 1.250% |
| 52          | 0.120%              | 0.200% | 0.340%            | 0.030% | 0.400%   | 1.500% |
| 53          | 0.140%              | 0.250% | 0.360%            | 0.030% | 0.450%   | 1.750% |
| 54          | 0.160%              | 0.300% | 0.380%            | 0.040% | 0.500%   | 2.000% |
| 55          | 0.180%              | 0.350% | 0.400%            | 0.040% | 0.550%   | 2.250% |
| 56          | 0.200%              | 0.400% | 0.420%            | 0.050% | 0.600%   | 2.300% |
| 57          | 0.220%              | 0.450% | 0.440%            | 0.050% | 0.650%   | 2.350% |
| 58          | 0.240%              | 0.500% | 0.480%            | 0.060% | 0.700%   | 2.400% |
| 59          | 0.260%              | 0.550% | 0.520%            | 0.060% | 0.750%   | 2.450% |
| 60          | 0.280%              | 0.600% | 0.540%            | 0.070% | 0.000%   | 0.000% |
| 61          | 0.300%              | 0.650% | 0.560%            | 0.070% | 0.000%   | 0.000% |
| 62          | 0.320%              | 0.700% | 0.600%            | 0.080% | 0.000%   | 0.000% |
| 63          | 0.340%              | 0.750% | 0.620%            | 0.080% | 0.000%   | 0.000% |
| 64          | 0.360%              | 0.800% | 0.640%            | 0.080% | 0.000%   | 0.000% |
| 65 and over | 0.000%              | 0.000% | 0.000%            | 0.000% | 0.000%   | 0.000% |

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**12. 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-2016, and increased by 12.1% 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-2016, and increased by 4.5% for males to reflect Plan experience.

**13. Rates of Mortality for Retired Disabled Lives**

Mortality rates for disabled retirees are based on the sex distinct Retired Pensioner (RP) 2014 Generational Disabled Annuitant Mortality Table, published by the Society of Actuaries, with Generational improvement using Projection Scale MP-2016.

**14. Duty-Related Deaths (Safety Employees Only)**

| Percentage of deaths<br>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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**15. Rates of Retirement**

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

| Age         | General<br>Years of Service |            | Safety<br>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%     | 7.00%                      | 18.00%     |
| 56          | 6.00%                       | 10.00%     | 7.00%                      | 18.00%     |
| 57          | 6.00%                       | 10.00%     | 7.00%                      | 18.00%     |
| 58          | 6.00%                       | 10.00%     | 7.00%                      | 18.00%     |
| 59          | 6.00%                       | 10.00%     | 7.00%                      | 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%     | 20.00%                     | 75.00%     |
| 66          | 35.00%                      | 35.00%     | 20.00%                     | 75.00%     |
| 67          | 35.00%                      | 35.00%     | 20.00%                     | 75.00%     |
| 68          | 35.00%                      | 35.00%     | 20.00%                     | 75.00%     |
| 69          | 35.00%                      | 35.00%     | 20.00%                     | 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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**16. Changes in Assumptions**

None.

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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, 2018. The benefit and contribution provisions of this law are summarized briefly below, *(along with corresponding references to the State Code)*. This summary does not attempt to cover all the detailed provisions of the law.

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

**A. Membership in Retirement Plans**

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

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

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

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

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

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

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

**B. Member Contributions**

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

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

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

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

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

|             | <b>Tier 1</b>                       | <b>Tier 2-3</b>                     |
|-------------|-------------------------------------|-------------------------------------|
| 2017 Actual | 49.97% (General)<br>68.45% (Safety) | 19.94% (General)<br>26.44% (Safety) |
| 2018 Actual | 49.89% (General)<br>68.45% (Safety) | 22.02% (General)<br>28.41% (Safety) |

**C. Employer Contributions:**

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

**D. Service Retirement Allowance:**

**Eligibility:**

**General Plan members:**

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

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



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***Safety Plan members:***

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

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

**Final Compensation:**

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

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

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

**Compensation**

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

**Integration with**

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

**Monthly Allowance:**

***General Plan members:***

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

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

**Tier 4 (PEPRA):** 2% x Final Compensation x PEPRA Age Factor x Years of Service

**Safety Plan members:**

**Tiers 1-3:** 2% x Final Compensation x Plan Age Factor x Years of Service (31664)

**Tier 4 (PEPRA):** 2% x Final Compensation x PEPRA Age Factor x Years of Service

| Code Section:<br>Label:<br>Base:<br>Age | Age Factors By Plan<br>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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**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. (31789.5)

**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    |

Members with less than 20 years of service are eligible for benefits in accordance to the schedule on the following page:

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| <b>Years of Service</b> | <b>Percentage of Full Benefit</b> |
|-------------------------|-----------------------------------|
| 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 a beneficiary having an insurable interest in the life of the member.

**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 2 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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**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. (31789.5)

**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 5, 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. (31789.5)

**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)  $50\% \times \text{Final Compensation}$ . (31787)

A lump sum is payable to an eligible survivor equal to  $1/12 \times \text{final 12 months' Salary} \times \text{years of service}$  (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  $60\% \times \text{the member's non-service connected disability allowance}$ . 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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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)

**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.

**APPENDIX D – GLOSSARY**

**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.

**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.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

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                            |
|-------------|-------------------------------------|-------------------------------------|
| 2017 Actual | 49.97% (General)<br>68.45% (Safety) | 19.94% (General)<br>26.44% (Safety) |
| 2018 Actual | 49.89% (General)<br>68.45% (Safety) | 22.02% (General)<br>28.41% (Safety) |

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

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**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<br>\$161.54   | Over<br>\$161.54 | First<br>\$161.54     | Over<br>\$161.54 | First<br>\$161.54 | Over<br>\$161.54 | First<br>\$161.54    | Over<br>\$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, increased by 12.1% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female<br>For Safety: Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2016, 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

The tables on the next six pages show the 2018 member contribution rates split into the Basic and COLA components, by tier.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| General Tier 1 |   |               |                |               |                |               |
|----------------|---|---------------|----------------|---------------|----------------|---------------|
| 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             | 1.65%   | 2.48%         | 0.82%          | 1.23%         | 2.47%          | 3.71%         |
| 17             | 1.69%   | 2.54%         | 0.84%          | 1.26%         | 2.53%          | 3.80%         |
| 18             | 1.73%   | 2.60%         | 0.86%          | 1.29%         | 2.59%          | 3.89%         |
| 19             | 1.77%   | 2.66%         | 0.88%          | 1.32%         | 2.65%          | 3.98%         |
| 20             | 1.81%   | 2.72%         | 0.90%          | 1.35%         | 2.71%          | 4.07%         |
| 21             | 1.85%   | 2.78%         | 0.92%          | 1.38%         | 2.77%          | 4.16%         |
| 22             | 1.89%   | 2.84%         | 0.95%          | 1.42%         | 2.84%          | 4.26%         |
| 23             | 1.94%   | 2.91%         | 0.97%          | 1.45%         | 2.91%          | 4.36%         |
| 24             | 1.98%   | 2.98%         | 0.99%          | 1.48%         | 2.97%          | 4.46%         |
| 25             | 2.03%   | 3.04%         | 1.01%          | 1.52%         | 3.04%          | 4.56%         |
| 26             | 2.07%   | 3.11%         | 1.03%          | 1.55%         | 3.11%          | 4.66%         |
| 27             | 2.12%   | 3.18%         | 1.06%          | 1.59%         | 3.18%          | 4.77%         |
| 28             | 2.17%   | 3.26%         | 1.08%          | 1.62%         | 3.25%          | 4.88%         |
| 29             | 2.22%   | 3.33%         | 1.11%          | 1.66%         | 3.33%          | 4.99%         |
| 30             | 2.27%   | 3.41%         | 1.13%          | 1.70%         | 3.41%          | 5.11%         |
| 31             | 2.32%   | 3.48%         | 1.16%          | 1.74%         | 3.48%          | 5.22%         |
| 32             | 2.38%   | 3.57%         | 1.19%          | 1.78%         | 3.57%          | 5.35%         |
| 33             | 2.43%   | 3.65%         | 1.21%          | 1.82%         | 3.65%          | 5.47%         |
| 34             | 2.49%   | 3.74%         | 1.24%          | 1.86%         | 3.73%          | 5.60%         |
| 35             | 2.54%   | 3.80%         | 1.26%          | 1.90%         | 3.80%          | 5.70%         |
| 36             | 2.58%   | 3.87%         | 1.29%          | 1.93%         | 3.87%          | 5.80%         |
| 37             | 2.63%   | 3.94%         | 1.31%          | 1.97%         | 3.94%          | 5.91%         |
| 38             | 2.68%   | 4.02%         | 1.34%          | 2.00%         | 4.01%          | 6.02%         |
| 39             | 2.73%   | 4.09%         | 1.36%          | 2.04%         | 4.09%          | 6.13%         |
| 40             | 2.78%   | 4.16%         | 1.38%          | 2.08%         | 4.16%          | 6.24%         |
| 41             | 2.83%   | 4.24%         | 1.41%          | 2.12%         | 4.24%          | 6.36%         |
| 42             | 2.88%   | 4.32%         | 1.44%          | 2.16%         | 4.32%          | 6.48%         |
| 43             | 2.94%   | 4.40%         | 1.46%          | 2.20%         | 4.40%          | 6.60%         |
| 44             | 2.99%   | 4.49%         | 1.49%          | 2.24%         | 4.49%          | 6.73%         |
| 45             | 3.05%   | 4.58%         | 1.52%          | 2.28%         | 4.57%          | 6.86%         |
| 46             | 3.11%   | 4.66%         | 1.55%          | 2.33%         | 4.66%          | 6.99%         |
| 47             | 3.17%   | 4.76%         | 1.58%          | 2.37%         | 4.75%          | 7.13%         |
| 48             | 3.23%   | 4.85%         | 1.61%          | 2.42%         | 4.85%          | 7.27%         |
| 49             | 3.30%   | 4.96%         | 1.65%          | 2.47%         | 4.95%          | 7.43%         |
| 50             | 3.38%   | 5.06%         | 1.68%          | 2.53%         | 5.06%          | 7.59%         |
| 51             | 3.45%   | 5.18%         | 1.72%          | 2.58%         | 5.17%          | 7.76%         |
| 52             | 3.52%   | 5.28%         | 1.76%          | 2.64%         | 5.28%          | 7.92%         |
| 53             | 3.59%   | 5.38%         | 1.79%          | 2.69%         | 5.38%          | 8.07%         |
| 54             | 3.66%   | 5.49%         | 1.83%          | 2.74%         | 5.49%          | 8.23%         |
| 55             | 3.71%   | 5.56%         | 1.85%          | 2.78%         | 5.56%          | 8.34%         |
| 56             | 3.74%   | 5.60%         | 1.86%          | 2.80%         | 5.60%          | 8.40%         |
| 57             | 3.73%   | 5.59%         | 1.86%          | 2.79%         | 5.59%          | 8.38%         |
| 58             | 3.70%   | 5.54%         | 1.84%          | 2.77%         | 5.54%          | 8.31%         |
| 59             | 3.63%   | 5.45%         | 1.81%          | 2.72%         | 5.45%          | 8.17%         |
| Assumptions:   |   |               |                |               |                |               |
| Interest:      | 7.25%   |               |                |               |                |               |
| Salary:        | 3.00%   |               |                |               |                |               |
| COLA:          | 2.70%   |               |                |               |                |               |
| Mortality:     | Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2016, increased by 12.1% 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| Entry Age    | General Tiers 2 and 3   |               |                |               |                |               |
|--------------|---|---------------|----------------|---------------|----------------|---------------|
|              | Basic Rate  |               | COLA Rate      |               | Total Rate     |               |
|              | First \$161.54  | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 16           | 3.19%   | 4.79%         | 0.70%          | 1.05%         | 3.89%          | 5.84%         |
| 17           | 3.27%   | 4.90%         | 0.72%          | 1.08%         | 3.99%          | 5.98%         |
| 18           | 3.34%   | 5.02%         | 0.74%          | 1.10%         | 4.08%          | 6.12%         |
| 19           | 3.42%   | 5.13%         | 0.75%          | 1.13%         | 4.17%          | 6.26%         |
| 20           | 3.50%   | 5.25%         | 0.77%          | 1.15%         | 4.27%          | 6.40%         |
| 21           | 3.58%   | 5.37%         | 0.79%          | 1.18%         | 4.37%          | 6.55%         |
| 22           | 3.66%   | 5.49%         | 0.81%          | 1.21%         | 4.47%          | 6.70%         |
| 23           | 3.75%   | 5.62%         | 0.83%          | 1.24%         | 4.57%          | 6.86%         |
| 24           | 3.83%   | 5.75%         | 0.84%          | 1.26%         | 4.67%          | 7.01%         |
| 25           | 3.92%   | 5.88%         | 0.86%          | 1.30%         | 4.79%          | 7.18%         |
| 26           | 4.01%   | 6.02%         | 0.88%          | 1.32%         | 4.89%          | 7.34%         |
| 27           | 4.10%   | 6.15%         | 0.90%          | 1.36%         | 5.01%          | 7.51%         |
| 28           | 4.20%   | 6.29%         | 0.92%          | 1.39%         | 5.12%          | 7.68%         |
| 29           | 4.29%   | 6.44%         | 0.95%          | 1.42%         | 5.24%          | 7.86%         |
| 30           | 4.39%   | 6.59%         | 0.97%          | 1.45%         | 5.36%          | 8.04%         |
| 31           | 4.49%   | 6.74%         | 0.99%          | 1.48%         | 5.48%          | 8.22%         |
| 32           | 4.59%   | 6.89%         | 1.01%          | 1.52%         | 5.61%          | 8.41%         |
| 33           | 4.69%   | 7.04%         | 1.03%          | 1.55%         | 5.73%          | 8.59%         |
| 34           | 4.79%   | 7.18%         | 1.05%          | 1.58%         | 5.84%          | 8.76%         |
| 35           | 4.88%   | 7.32%         | 1.07%          | 1.61%         | 5.95%          | 8.93%         |
| 36           | 4.97%   | 7.45%         | 1.09%          | 1.64%         | 6.06%          | 9.09%         |
| 37           | 5.06%   | 7.59%         | 1.11%          | 1.67%         | 6.17%          | 9.26%         |
| 38           | 5.15%   | 7.73%         | 1.13%          | 1.70%         | 6.29%          | 9.43%         |
| 39           | 5.25%   | 7.87%         | 1.15%          | 1.73%         | 6.40%          | 9.60%         |
| 40           | 5.34%   | 8.02%         | 1.18%          | 1.76%         | 6.52%          | 9.78%         |
| 41           | 5.44%   | 8.16%         | 1.20%          | 1.80%         | 6.64%          | 9.96%         |
| 42           | 5.55%   | 8.32%         | 1.22%          | 1.83%         | 6.77%          | 10.15%        |
| 43           | 5.65%   | 8.47%         | 1.24%          | 1.87%         | 6.89%          | 10.34%        |
| 44           | 5.76%   | 8.64%         | 1.27%          | 1.90%         | 7.03%          | 10.54%        |
| 45           | 5.87%   | 8.80%         | 1.29%          | 1.94%         | 7.16%          | 10.74%        |
| 46           | 5.98%   | 8.97%         | 1.32%          | 1.98%         | 7.30%          | 10.95%        |
| 47           | 6.10%   | 9.15%         | 1.34%          | 2.01%         | 7.44%          | 11.16%        |
| 48           | 6.22%   | 9.33%         | 1.37%          | 2.06%         | 7.59%          | 11.39%        |
| 49           | 6.35%   | 9.53%         | 1.40%          | 2.10%         | 7.75%          | 11.63%        |
| 50           | 6.49%   | 9.73%         | 1.43%          | 2.14%         | 7.91%          | 11.87%        |
| 51           | 6.61%   | 9.92%         | 1.46%          | 2.18%         | 8.07%          | 12.10%        |
| 52           | 6.73%   | 10.09%        | 1.48%          | 2.22%         | 8.21%          | 12.31%        |
| 53           | 6.82%   | 10.24%        | 1.50%          | 2.25%         | 8.33%          | 12.49%        |
| 54           | 6.90%   | 10.34%        | 1.52%          | 2.28%         | 8.41%          | 12.62%        |
| 55           | 6.91%   | 10.37%        | 1.52%          | 2.28%         | 8.43%          | 12.65%        |
| 56           | 6.88%   | 10.33%        | 1.52%          | 2.27%         | 8.40%          | 12.60%        |
| 57           | 6.80%   | 10.20%        | 1.50%          | 2.24%         | 8.29%          | 12.44%        |
| 58           | 7.03%   | 10.54%        | 1.55%          | 2.32%         | 8.57%          | 12.86%        |
| 59           | 7.27%   | 10.91%        | 1.60%          | 2.40%         | 8.87%          | 13.31%        |
| Assumptions: |   |               |                |               |                |               |
| Interest:    | 7.25%   |               |                |               |                |               |
| Salary:      | 3.00%   |               |                |               |                |               |
| COLA:        | 2.00%   |               |                |               |                |               |
| Mortality:   | Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2016, increased by 12.1% 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| General Tier 4 |   |           |            |
|----------------|---|-----------|------------|
| Entry Age      | Basic Rate  | COLA Rate | Total Rate |
| 16             | 3.44%   | 0.67%     | 4.11%      |
| 17             | 3.44%   | 0.67%     | 4.11%      |
| 18             | 3.44%   | 0.67%     | 4.11%      |
| 19             | 3.44%   | 0.67%     | 4.11%      |
| 20             | 3.44%   | 0.67%     | 4.11%      |
| 21             | 3.61%   | 0.71%     | 4.32%      |
| 22             | 3.79%   | 0.74%     | 4.53%      |
| 23             | 3.96%   | 0.78%     | 4.74%      |
| 24             | 4.14%   | 0.81%     | 4.95%      |
| 25             | 4.32%   | 0.85%     | 5.17%      |
| 26             | 4.49%   | 0.88%     | 5.37%      |
| 27             | 4.66%   | 0.92%     | 5.58%      |
| 28             | 4.84%   | 0.96%     | 5.80%      |
| 29             | 5.02%   | 0.99%     | 6.01%      |
| 30             | 5.21%   | 1.02%     | 6.23%      |
| 31             | 5.39%   | 1.05%     | 6.44%      |
| 32             | 5.57%   | 1.09%     | 6.66%      |
| 33             | 5.75%   | 1.13%     | 6.88%      |
| 34             | 5.95%   | 1.16%     | 7.11%      |
| 35             | 6.14%   | 1.20%     | 7.34%      |
| 36             | 6.35%   | 1.23%     | 7.58%      |
| 37             | 6.56%   | 1.27%     | 7.83%      |
| 38             | 6.77%   | 1.32%     | 8.09%      |
| 39             | 6.99%   | 1.36%     | 8.35%      |
| 40             | 7.21%   | 1.40%     | 8.61%      |
| 41             | 7.43%   | 1.44%     | 8.87%      |
| 42             | 7.65%   | 1.48%     | 9.13%      |
| 43             | 7.89%   | 1.53%     | 9.42%      |
| 44             | 8.14%   | 1.57%     | 9.71%      |
| 45             | 8.38%   | 1.63%     | 10.01%     |
| 46             | 8.68%   | 1.69%     | 10.37%     |
| 47             | 8.97%   | 1.76%     | 10.73%     |
| 48             | 9.24%   | 1.79%     | 11.03%     |
| 49             | 9.49%   | 1.84%     | 11.33%     |
| 50             | 9.74%   | 1.87%     | 11.61%     |
| 51             | 10.00%  | 1.90%     | 11.90%     |
| 52             | 10.25%  | 1.92%     | 12.17%     |
| 53             | 10.49%  | 1.96%     | 12.45%     |
| 54             | 10.72%  | 1.98%     | 12.70%     |
| 55             | 10.91%  | 2.00%     | 12.91%     |
| 56             | 11.13%  | 2.01%     | 13.14%     |
| 57             | 11.31%  | 2.01%     | 13.32%     |
| 58             | 11.47%  | 2.01%     | 13.48%     |
| 59             | 11.57%  | 2.00%     | 13.57%     |
| Assumptions:   |   |           |            |
| Interest:      | 7.25%   |           |            |
| Salary:        | 3.00%   |           |            |
| COLA:          | 2.00%   |           |            |
| Mortality:     | Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2016, increased by 12.1% 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| Entry Age           | Safety Tier I   |               |                |               |                |               |
|---------------------|---|---------------|----------------|---------------|----------------|---------------|
|                     | Basic Rate  |               | COLA Rate      |               | Total Rate     |               |
|                     | First \$161.54  | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 16                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 17                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 18                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 19                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 20                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 21                  | 2.47%   | 3.70%         | 1.69%          | 2.53%         | 4.15%          | 6.23%         |
| 22                  | 2.52%   | 3.78%         | 1.73%          | 2.59%         | 4.25%          | 6.37%         |
| 23                  | 2.58%   | 3.86%         | 1.76%          | 2.65%         | 4.34%          | 6.51%         |
| 24                  | 2.64%   | 3.95%         | 1.80%          | 2.71%         | 4.44%          | 6.66%         |
| 25                  | 2.70%   | 4.04%         | 1.84%          | 2.77%         | 4.54%          | 6.81%         |
| 26                  | 2.76%   | 4.14%         | 1.89%          | 2.83%         | 4.65%          | 6.97%         |
| 27                  | 2.82%   | 4.23%         | 1.93%          | 2.90%         | 4.75%          | 7.13%         |
| 28                  | 2.89%   | 4.33%         | 1.97%          | 2.96%         | 4.86%          | 7.29%         |
| 29                  | 2.95%   | 4.43%         | 2.02%          | 3.03%         | 4.97%          | 7.46%         |
| 30                  | 3.02%   | 4.53%         | 2.07%          | 3.10%         | 5.09%          | 7.63%         |
| 31                  | 3.09%   | 4.64%         | 2.12%          | 3.17%         | 5.21%          | 7.81%         |
| 32                  | 3.17%   | 4.75%         | 2.17%          | 3.25%         | 5.33%          | 8.00%         |
| 33                  | 3.24%   | 4.86%         | 2.22%          | 3.33%         | 5.46%          | 8.19%         |
| 34                  | 3.32%   | 4.99%         | 2.28%          | 3.41%         | 5.60%          | 8.40%         |
| 35                  | 3.41%   | 5.11%         | 2.33%          | 3.50%         | 5.74%          | 8.61%         |
| 36                  | 3.50%   | 5.25%         | 2.39%          | 3.59%         | 5.89%          | 8.84%         |
| 37                  | 3.59%   | 5.39%         | 2.46%          | 3.69%         | 6.05%          | 9.08%         |
| 38                  | 3.68%   | 5.52%         | 2.52%          | 3.77%         | 6.19%          | 9.29%         |
| 39                  | 3.75%   | 5.63%         | 2.57%          | 3.85%         | 6.32%          | 9.48%         |
| 40                  | 3.82%   | 5.73%         | 2.61%          | 3.92%         | 6.43%          | 9.65%         |
| 41                  | 3.89%   | 5.84%         | 2.66%          | 3.99%         | 6.55%          | 9.83%         |
| 42                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 43                  | 3.99%   | 5.99%         | 2.73%          | 4.10%         | 6.73%          | 10.09%        |
| 44                  | 4.01%   | 6.01%         | 2.74%          | 4.12%         | 6.75%          | 10.13%        |
| 45                  | 4.02%   | 6.04%         | 2.76%          | 4.13%         | 6.78%          | 10.17%        |
| 46                  | 4.03%   | 6.05%         | 2.76%          | 4.14%         | 6.79%          | 10.19%        |
| 47                  | 4.03%   | 6.05%         | 2.76%          | 4.14%         | 6.79%          | 10.19%        |
| 48                  | 4.01%   | 6.02%         | 2.75%          | 4.12%         | 6.76%          | 10.14%        |
| 49                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 50                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 51                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 52                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 53                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 54                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 55                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 56                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 57                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 58                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 59                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| <b>Assumptions:</b> |   |               |                |               |                |               |
| Interest:           | 7.25%   |               |                |               |                |               |
| Salary:             | 3.00%   |               |                |               |                |               |
| COLA:               | 2.70%   |               |                |               |                |               |
| Mortality:          | Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2016, 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, 2018**

**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                   | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 17                   | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 18                   | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 19                   | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 20                   | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 21                   | 4.77%   | 7.15%         | 1.35%          | 2.03%         | 6.12%          | 9.18%         |
| 22                   | 4.88%   | 7.31%         | 1.38%          | 2.08%         | 6.26%          | 9.39%         |
| 23                   | 4.98%   | 7.48%         | 1.42%          | 2.12%         | 6.40%          | 9.60%         |
| 24                   | 5.10%   | 7.65%         | 1.45%          | 2.17%         | 6.55%          | 9.82%         |
| 25                   | 5.21%   | 7.82%         | 1.48%          | 2.22%         | 6.69%          | 10.04%        |
| 26                   | 5.33%   | 8.00%         | 1.51%          | 2.27%         | 6.85%          | 10.27%        |
| 27                   | 5.45%   | 8.18%         | 1.55%          | 2.32%         | 7.00%          | 10.50%        |
| 28                   | 5.58%   | 8.36%         | 1.58%          | 2.38%         | 7.16%          | 10.74%        |
| 29                   | 5.71%   | 8.56%         | 1.62%          | 2.43%         | 7.33%          | 10.99%        |
| 30                   | 5.84%   | 8.76%         | 1.66%          | 2.49%         | 7.50%          | 11.25%        |
| 31                   | 5.98%   | 8.96%         | 1.70%          | 2.55%         | 7.67%          | 11.51%        |
| 32                   | 6.12%   | 9.18%         | 1.74%          | 2.61%         | 7.86%          | 11.79%        |
| 33                   | 6.27%   | 9.40%         | 1.78%          | 2.67%         | 8.05%          | 12.07%        |
| 34                   | 6.42%   | 9.63%         | 1.82%          | 2.74%         | 8.25%          | 12.37%        |
| 35                   | 6.59%   | 9.88%         | 1.87%          | 2.81%         | 8.46%          | 12.69%        |
| 36                   | 6.75%   | 10.12%        | 1.92%          | 2.88%         | 8.67%          | 13.00%        |
| 37                   | 6.90%   | 10.35%        | 1.96%          | 2.94%         | 8.86%          | 13.29%        |
| 38                   | 7.03%   | 10.55%        | 2.00%          | 3.00%         | 9.03%          | 13.55%        |
| 39                   | 7.16%   | 10.74%        | 2.03%          | 3.05%         | 9.19%          | 13.79%        |
| 40                   | 7.27%   | 10.91%        | 2.07%          | 3.10%         | 9.34%          | 14.01%        |
| 41                   | 7.37%   | 11.05%        | 2.09%          | 3.14%         | 9.46%          | 14.19%        |
| 42                   | 7.43%   | 11.15%        | 2.11%          | 3.17%         | 9.55%          | 14.32%        |
| 43                   | 7.47%   | 11.21%        | 2.12%          | 3.18%         | 9.59%          | 14.39%        |
| 44                   | 7.49%   | 11.23%        | 2.13%          | 3.19%         | 9.61%          | 14.42%        |
| 45                   | 7.49%   | 11.23%        | 2.13%          | 3.19%         | 9.61%          | 14.42%        |
| 46                   | 7.46%   | 11.19%        | 2.12%          | 3.18%         | 9.58%          | 14.37%        |
| 47                   | 7.38%   | 11.07%        | 2.10%          | 3.15%         | 9.48%          | 14.22%        |
| 48                   | 7.63%   | 11.45%        | 2.17%          | 3.25%         | 9.80%          | 14.70%        |
| 49                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 50                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 51                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 52                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 53                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 54                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 55                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 56                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 57                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 58                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 59                   | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| <b>Assumptions:</b>  |   |               |                |               |                |               |
| Interest:            | 7.25%   |               |                |               |                |               |
| 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-2016, 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| Safety Tier 4       |   |           |            |
|---------------------|---|-----------|------------|
| Entry Age           | Basic Rate  | COLA Rate | Total Rate |
| 16                  | 7.26%   | 1.66%     | 8.92%      |
| 17                  | 7.26%   | 1.66%     | 8.92%      |
| 18                  | 7.26%   | 1.66%     | 8.92%      |
| 19                  | 7.26%   | 1.66%     | 8.92%      |
| 20                  | 7.26%   | 1.66%     | 8.92%      |
| 21                  | 7.54%   | 1.73%     | 9.27%      |
| 22                  | 7.82%   | 1.80%     | 9.62%      |
| 23                  | 8.11%   | 1.86%     | 9.97%      |
| 24                  | 8.41%   | 1.93%     | 10.34%     |
| 25                  | 8.71%   | 2.00%     | 10.71%     |
| 26                  | 9.01%   | 2.06%     | 11.07%     |
| 27                  | 9.31%   | 2.12%     | 11.43%     |
| 28                  | 9.61%   | 2.19%     | 11.80%     |
| 29                  | 9.90%   | 2.25%     | 12.15%     |
| 30                  | 10.19%  | 2.32%     | 12.51%     |
| 31                  | 10.51%  | 2.39%     | 12.90%     |
| 32                  | 10.83%  | 2.46%     | 13.29%     |
| 33                  | 11.15%  | 2.53%     | 13.68%     |
| 34                  | 11.47%  | 2.61%     | 14.08%     |
| 35                  | 11.81%  | 2.69%     | 14.50%     |
| 36                  | 12.11%  | 2.74%     | 14.85%     |
| 37                  | 12.40%  | 2.80%     | 15.20%     |
| 38                  | 12.69%  | 2.86%     | 15.55%     |
| 39                  | 13.00%  | 2.93%     | 15.93%     |
| 40                  | 13.34%  | 2.99%     | 16.33%     |
| 41                  | 13.66%  | 3.05%     | 16.71%     |
| 42                  | 13.99%  | 3.12%     | 17.11%     |
| 43                  | 14.37%  | 3.19%     | 17.56%     |
| 44                  | 14.75%  | 3.27%     | 18.02%     |
| 45                  | 15.15%  | 3.34%     | 18.49%     |
| 46                  | 15.48%  | 3.38%     | 18.86%     |
| 47                  | 15.81%  | 3.41%     | 19.22%     |
| 48                  | 16.14%  | 3.44%     | 19.58%     |
| 49                  | 16.47%  | 3.48%     | 19.95%     |
| 50                  | 16.47%  | 3.48%     | 19.95%     |
| 51                  | 16.47%  | 3.48%     | 19.95%     |
| 52                  | 16.47%  | 3.48%     | 19.95%     |
| 53                  | 16.47%  | 3.48%     | 19.95%     |
| 54                  | 16.47%  | 3.48%     | 19.95%     |
| 55                  | 16.47%  | 3.48%     | 19.95%     |
| 56                  | 16.47%  | 3.48%     | 19.95%     |
| 57                  | 16.47%  | 3.48%     | 19.95%     |
| 58                  | 16.47%  | 3.48%     | 19.95%     |
| 59                  | 16.47%  | 3.48%     | 19.95%     |
| <b>Assumptions:</b> |   |           |            |
| Interest:           | 7.25%   |           |            |
| 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-2016, 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

**2017 Member Contribution Rates (for fiscal year ending 2019)**

| Entry Age           | General Tier 1  |                  | General Tiers 2 and 3 |                  | Safety Tier 1     |                  | Safety Tiers 2 and 3 |                  | Tier 4 Members |        |
|---------------------|---|------------------|-----------------------|------------------|-------------------|------------------|----------------------|------------------|----------------|--------|
|                     | First<br>\$161.54   | Over<br>\$161.54 | First<br>\$161.54     | Over<br>\$161.54 | First<br>\$161.54 | Over<br>\$161.54 | First<br>\$161.54    | Over<br>\$161.54 | General        | Safety |
| 16                  | 2.48%   | 3.72%            | 3.83%                 | 5.74%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 17                  | 2.53%   | 3.80%            | 3.92%                 | 5.88%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 18                  | 2.59%   | 3.89%            | 4.01%                 | 6.01%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 19                  | 2.65%   | 3.98%            | 4.10%                 | 6.15%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 20                  | 2.71%   | 4.07%            | 4.20%                 | 6.30%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 21                  | 2.78%   | 4.17%            | 4.29%                 | 6.44%            | 4.15%             | 6.23%            | 6.03%                | 9.04%            | 4.35%          | 9.26%  |
| 22                  | 2.84%   | 4.26%            | 4.39%                 | 6.59%            | 4.25%             | 6.37%            | 6.16%                | 9.24%            | 4.56%          | 9.61%  |
| 23                  | 2.91%   | 4.36%            | 4.49%                 | 6.74%            | 4.34%             | 6.51%            | 6.30%                | 9.45%            | 4.77%          | 9.96%  |
| 24                  | 2.97%   | 4.46%            | 4.59%                 | 6.89%            | 4.44%             | 6.66%            | 6.45%                | 9.67%            | 4.98%          | 10.33% |
| 25                  | 3.04%   | 4.56%            | 4.70%                 | 7.05%            | 4.54%             | 6.81%            | 6.59%                | 9.88%            | 5.20%          | 10.70% |
| 26                  | 3.11%   | 4.67%            | 4.81%                 | 7.21%            | 4.65%             | 6.97%            | 6.74%                | 10.11%           | 5.41%          | 11.06% |
| 27                  | 3.18%   | 4.77%            | 4.92%                 | 7.38%            | 4.75%             | 7.13%            | 6.89%                | 10.34%           | 5.62%          | 11.42% |
| 28                  | 3.25%   | 4.88%            | 5.03%                 | 7.55%            | 4.86%             | 7.29%            | 7.05%                | 10.58%           | 5.84%          | 11.79% |
| 29                  | 3.33%   | 5.00%            | 5.15%                 | 7.72%            | 4.97%             | 7.46%            | 7.21%                | 10.82%           | 6.05%          | 12.14% |
| 30                  | 3.41%   | 5.11%            | 5.27%                 | 7.90%            | 5.09%             | 7.63%            | 7.38%                | 11.07%           | 6.28%          | 12.50% |
| 31                  | 3.49%   | 5.23%            | 5.39%                 | 8.08%            | 5.21%             | 7.81%            | 7.56%                | 11.34%           | 6.49%          | 12.89% |
| 32                  | 3.57%   | 5.35%            | 5.51%                 | 8.27%            | 5.33%             | 8.00%            | 7.74%                | 11.61%           | 6.70%          | 13.28% |
| 33                  | 3.65%   | 5.47%            | 5.63%                 | 8.45%            | 5.46%             | 8.19%            | 7.93%                | 11.89%           | 6.93%          | 13.67% |
| 34                  | 3.73%   | 5.60%            | 5.74%                 | 8.61%            | 5.60%             | 8.40%            | 8.12%                | 12.18%           | 7.16%          | 14.07% |
| 35                  | 3.80%   | 5.70%            | 5.85%                 | 8.77%            | 5.74%             | 8.61%            | 8.33%                | 12.49%           | 7.39%          | 14.48% |
| 36                  | 3.87%   | 5.81%            | 5.95%                 | 8.93%            | 5.89%             | 8.84%            | 8.53%                | 12.80%           | 7.63%          | 14.84% |
| 37                  | 3.94%   | 5.91%            | 6.07%                 | 9.10%            | 6.05%             | 9.08%            | 8.73%                | 13.09%           | 7.88%          | 15.18% |
| 38                  | 4.01%   | 6.02%            | 6.18%                 | 9.27%            | 6.19%             | 9.29%            | 8.90%                | 13.35%           | 8.15%          | 15.54% |
| 39                  | 4.09%   | 6.13%            | 6.29%                 | 9.44%            | 6.32%             | 9.48%            | 9.05%                | 13.58%           | 8.41%          | 15.91% |
| 40                  | 4.17%   | 6.25%            | 6.41%                 | 9.61%            | 6.43%             | 9.65%            | 9.19%                | 13.79%           | 8.67%          | 16.31% |
| 41                  | 4.24%   | 6.36%            | 6.53%                 | 9.79%            | 6.55%             | 9.83%            | 9.32%                | 13.98%           | 8.93%          | 16.69% |
| 42                  | 4.32%   | 6.48%            | 6.65%                 | 9.97%            | 6.65%             | 9.97%            | 9.40%                | 14.10%           | 9.19%          | 17.10% |
| 43                  | 4.40%   | 6.60%            | 6.77%                 | 10.16%           | 6.73%             | 10.09%           | 9.45%                | 14.17%           | 9.49%          | 17.54% |
| 44                  | 4.49%   | 6.73%            | 6.91%                 | 10.36%           | 6.75%             | 10.13%           | 9.47%                | 14.20%           | 9.78%          | 18.00% |
| 45                  | 4.57%   | 6.86%            | 7.03%                 | 10.55%           | 6.78%             | 10.17%           | 9.47%                | 14.20%           | 10.08%         | 18.47% |
| 46                  | 4.66%   | 6.99%            | 7.17%                 | 10.76%           | 6.79%             | 10.19%           | 9.43%                | 14.15%           | 10.44%         | 18.84% |
| 47                  | 4.75%   | 7.13%            | 7.31%                 | 10.97%           | 6.79%             | 10.19%           | 9.33%                | 14.00%           | 10.81%         | 19.20% |
| 48                  | 4.85%   | 7.28%            | 7.47%                 | 11.20%           | 6.76%             | 10.14%           | 9.65%                | 14.47%           | 11.11%         | 19.56% |
| 49                  | 4.95%   | 7.43%            | 7.62%                 | 11.43%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 11.41%         | 19.93% |
| 50                  | 5.06%   | 7.59%            | 7.78%                 | 11.67%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 11.69%         | 19.93% |
| 51                  | 5.18%   | 7.77%            | 7.93%                 | 11.89%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 11.98%         | 19.93% |
| 52                  | 5.28%   | 7.92%            | 8.07%                 | 12.10%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 12.26%         | 19.93% |
| 53                  | 5.39%   | 8.08%            | 8.19%                 | 12.28%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 12.54%         | 19.93% |
| 54                  | 5.49%   | 8.23%            | 8.27%                 | 12.40%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 12.79%         | 19.93% |
| 55                  | 5.56%   | 8.34%            | 8.29%                 | 12.44%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.00%         | 19.93% |
| 56                  | 5.60%   | 8.40%            | 8.25%                 | 12.38%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.23%         | 19.93% |
| 57                  | 5.59%   | 8.38%            | 8.15%                 | 12.23%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.42%         | 19.93% |
| 58                  | 5.55%   | 8.32%            | 8.43%                 | 12.65%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.58%         | 19.93% |
| 59                  | 5.45%   | 8.18%            | 8.72%                 | 13.08%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.67%         | 19.93% |
| <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, increased by 12.1% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female<br>For Safety: Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2016, 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, 2018**

**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, 2018 actuarial valuation.

**General - Male**

| Demographic Assumption Rates - Age |                  |  |                                  |          |                      |
|------------------------------------|------------------|--|----------------------------------|----------|----------------------|
| Age                                | Service          |  | Mortality of Active Members Rate |          | Withdrawal           |
|                                    | Retirement Rate* |  | Ordinary                         | Service  | (Termination) Rate** |
| 25                                 | 0.000            |  | 0.000512                         | 0.000000 | 0.0800               |
| 30                                 | 0.000            |  | 0.000500                         | 0.000000 | 0.0800               |
| 35                                 | 0.000            |  | 0.000590                         | 0.000000 | 0.0800               |
| 40                                 | 0.000            |  | 0.000696                         | 0.000000 | 0.0800               |
| 45                                 | 0.000            |  | 0.001045                         | 0.000000 | 0.0800               |
| 50                                 | 0.050            |  | 0.001801                         | 0.000000 | 0.0500               |
| 55                                 | 0.060            |  | 0.003046                         | 0.000000 | 0.0500               |
| 60                                 | 0.150            |  | 0.005241                         | 0.000000 | 0.0500               |
| 65                                 | 0.350            |  | 0.009229                         | 0.000000 | 0.0000               |
| 70                                 | 0.350            |  | 0.015142                         | 0.000000 | 0.0000               |

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

\*\*The Withdrawal Rates above assume 3-5 years of service.

**General - Female**

| Demographic Assumption Rates - Age |                  |  |                                  |          |                      |
|------------------------------------|------------------|--|----------------------------------|----------|----------------------|
| Age                                | Service          |  | Mortality of Active Members Rate |          | Withdrawal           |
|                                    | Retirement Rate* |  | Ordinary                         | Service  | (Termination) Rate** |
| 25                                 | 0.000            |  | 0.000181                         | 0.000000 | 0.0800               |
| 30                                 | 0.000            |  | 0.000236                         | 0.000000 | 0.0800               |
| 35                                 | 0.000            |  | 0.000313                         | 0.000000 | 0.0800               |
| 40                                 | 0.000            |  | 0.000428                         | 0.000000 | 0.0800               |
| 45                                 | 0.000            |  | 0.000691                         | 0.000000 | 0.0800               |
| 50                                 | 0.050            |  | 0.001156                         | 0.000000 | 0.0500               |
| 55                                 | 0.060            |  | 0.001802                         | 0.000000 | 0.0500               |
| 60                                 | 0.150            |  | 0.002650                         | 0.000000 | 0.0500               |
| 65                                 | 0.350            |  | 0.003916                         | 0.000000 | 0.0000               |
| 70                                 | 0.350            |  | 0.006568                         | 0.000000 | 0.0000               |

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

\*\*The Withdrawal Rates above assume 3-5 years of service.



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**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                    | 0.000358                         | 0.000260 | 0.0700                          |  |
| 30                                 | 0.000                    | 0.000350                         | 0.000253 | 0.0700                          |  |
| 35                                 | 0.000                    | 0.000356                         | 0.000356 | 0.0700                          |  |
| 40                                 | 0.000                    | 0.000420                         | 0.000420 | 0.0700                          |  |
| 45                                 | 0.070                    | 0.000605                         | 0.000656 | 0.0600                          |  |
| 50                                 | 0.070                    | 0.000913                         | 0.001260 | 0.0600                          |  |
| 55                                 | 0.070                    | 0.001470                         | 0.002205 | 0.0600                          |  |
| 60                                 | 0.200                    | 0.002339                         | 0.003983 | 0.0000                          |  |
| 65                                 | 0.200                    | 0.004120                         | 0.007014 | 0.0000                          |  |
| 70                                 | 1.000                    | 0.006515                         | 0.011092 | 0.0000                          |  |

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

\*\*The Withdrawal Rates above assume 3-5 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                    | 0.000109                         | 0.000079 | 0.0700                          |  |
| 30                                 | 0.000                    | 0.000142                         | 0.000103 | 0.0700                          |  |
| 35                                 | 0.000                    | 0.000163                         | 0.000163 | 0.0700                          |  |
| 40                                 | 0.000                    | 0.000222                         | 0.000222 | 0.0700                          |  |
| 45                                 | 0.070                    | 0.000345                         | 0.000373 | 0.0600                          |  |
| 50                                 | 0.070                    | 0.000504                         | 0.000697 | 0.0600                          |  |
| 55                                 | 0.070                    | 0.000748                         | 0.001123 | 0.0600                          |  |
| 60                                 | 0.200                    | 0.001018                         | 0.001734 | 0.0000                          |  |
| 65                                 | 0.200                    | 0.001504                         | 0.002562 | 0.0000                          |  |
| 70                                 | 1.000                    | 0.002488                         | 0.004236 | 0.0000                          |  |

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

\*\*The Withdrawal Rates above assume 3-5 years of service.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**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                    | 0.050                           |
| 15  | 0.150                    | 0.050                           |
| 20  | 0.150                    | 0.050                           |
| 25  | 0.150                    | 0.050                           |
| 30  | 0.200                    | 0.050                           |
| 35  | 0.200                    | 0.050                           |
| 40  | 0.200                    | 0.050                           |
| 45  | 0.200                    | 0.050                           |
| 50  | 0.200                    | 0.050                           |

*\*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                    | 0.050                           |
| 15  | 0.150                    | 0.050                           |
| 20  | 0.150                    | 0.050                           |
| 25  | 0.150                    | 0.050                           |
| 30  | 0.200                    | 0.050                           |
| 35  | 0.200                    | 0.050                           |
| 40  | 0.200                    | 0.050                           |
| 45  | 0.200                    | 0.050                           |
| 50  | 0.200                    | 0.050                           |

*\*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, 2018**

**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*

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

### **Actuarial Valuation Report as of June 30, 2018**

**Produced by Cheiron**

**October 2018**

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October 31, 2018

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, 2018. 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.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. 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, appearing to read "Graham Schmidt".

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

A handwritten signature in blue ink, appearing to read "Steven M. Hastings".

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



TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018

**FOREWORD**

Cheiron has performed the actuarial valuation of the Tulare County Employees' Retirement Association as of June 30, 2018. 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 – Assets
  - Section III – Liabilities
  - Section IV – Contributions
  - Section V – 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.

In preparing our report, we relied on information (some oral and some written) supplied by the TCERA staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**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 2019-2020; 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, 2019. 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 were based on the experience studies presented by Cheiron on June 28, 2017 and September 27, 2017. There are no assumption changes for this valuation. The discount rate remains 7.25% and the mortality improvement projection scale remains MP-2016. A summary of the assumptions and methods used in the current valuation is shown in Appendix B.

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

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**SECTION I – EXECUTIVE SUMMARY**

**B. Key Findings of this Valuation**

The key results of the June 30, 2018 actuarial valuation are as follows:

- The average actuarially determined employer contribution rate increased from 12.98% of payroll to 13.51% of payroll. Information on the contribution rates and changes from last year to this year may be found in Tables I-4 and I-5. The largest factor affecting the employer contribution rate was an increase of 0.69% due to investment losses for the plan year ending June 30, 2018. On a Market Value of Assets basis, the Plan earned 7.4%, as compared to the prior year's 7.25% assumed return. However, on a smoothed (Actuarial Value of Assets) basis, the return was 5.6%. The rest of the change was due to a decrease of 0.15% in the employer contribution rate due to demographic gains, mostly due to the ongoing transition of the active population towards Tier 4 (PEPRA) members.
- 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 \$111.7 million as of June 30, 2017 to \$133.3 million as of June 30, 2018. The \$21.7 million increase in the UAL was primarily due to the impact of investment losses, which increased the UAL by \$23.7 million for the plan year ending June 30, 2018 but which was offset by \$2.0 million in other UAL changes. The remaining balance of the June 30, 2015 UAL is being amortized over 16 years and the remaining balances for each of the following 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 20, 2016 is being amortized over 17 years). Finally, the UAL loss for the plan year ending June 30, 2018 is being amortized as a new 19-year layer. 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 92.9% last year to 92.0% as of June 30, 2018. On a market value basis, the funded ratio increased from 88.7% last year to 89.4% 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.
- During the 2017-2018 plan year, the actuarial liabilities of the System increased slightly more than expected. The liability losses were associated primarily with new entrants and COLA increases that were higher than expected. These losses were partially offset by salary increases that were lower than expected. In total, the liability losses increased the Actuarial Liability by \$0.3 million.
- Overall participant membership increased compared to last year, from 9,562 to 9,805. The total active population increased from 4,536 to 4,581 and total projected payroll increased from \$254,940,772 to \$262,713,817. The number of inactives increased from 1,954 to 2,032, while the number of retirees increased from 3,072 to 3,192.
- In Table III-4 of this valuation we have disclosed a liability of \$111.0 million associated with future transfers to the Supplemental Retiree Benefit Reserve (SRBR). This amount is based

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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 7.25% assumption. It has not been reflected in the calculation of the employer contribution rate. Future SRBR transfers will result in asset losses that are funded through the Plan's amortization method.

We note that the present value of future transfers to the SRBR is higher than in the prior valuation, largely due to the additional pension obligation bond funds included for the plan year ending June 30, 2018. If the liability for future SRBR transfers were to be pre-funded, the employer contribution would be approximately \$9.3 million higher, or about 3.5% of pay. We have also disclosed a liability of \$98.4 million associated with the current SRBR balance, which is equal to the current balance 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 Table I-6 and the language which follows.

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| <p style="text-align: center;"><b>Table I-1</b><br/><b>Summary of Key Valuation Results - Funded Status</b><br/>(in thousands)</p> |                      |                      |                 |
|--|----------------------|----------------------|-----------------|
| <b>Valuation Date</b>  | <b>June 30, 2017</b> | <b>June 30, 2018</b> | <b>% Change</b> |
| Actuarial Liability  | \$ 1,573,406         | \$ 1,656,357         | 5.3%            |
| Market Value of Assets   | \$ 1,503,326         | \$ 1,587,476         | 5.6%            |
| Market Value of Assets (Excluding SRBR)  | 1,395,122            | 1,480,284            | 6.1%            |
| Actuarial Value of Assets (Excluding SRBR)   | 1,461,755            | 1,523,030            | 4.2%            |
| Unfunded Actuarial Liability (UAL)   |                      |                      |                 |
| - based on Market Value of Assets  | \$ 178,284           | \$ 176,073           | -1.2%           |
| - based on Actuarial Value of Assets   | 111,651              | 133,326              | 19.4%           |
| Funding Ratio - Market value basis   | 88.7%                | 89.4%                | 0.7%            |
| Funding Ratio - Actuarial value basis  | 92.9%                | 92.0%                | -1.0%           |
| Expected Payroll   | \$ 254,941           | \$ 262,714           | 3.0%            |
| Asset Leverage Ratio   | 5.9                  | 6.0                  | 2.5%            |
| Actuarial Liability Leverage Ratio   | 6.2                  | 6.3                  | 2.2%            |
| Interest on UAL (MVA basis)  | \$ 12,926            | \$ 12,765            | -1.2%           |
| Interest Cost as Percent of Payroll  | 5.1%                 | 4.9%                 | -0.2%           |

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| Table 1-2   |                |                |             |
|---|----------------|----------------|-------------|
| Membership Total  |                |                |             |
| Item  | June 30, 2017  | June 30, 2018  | % Change    |
| Actives   | 4,536          | 4,581          | 1.0%        |
| Inactives   | 1,954          | 2,032          | 4.0%        |
| Members Receiving Benefits  | <u>3,072</u>   | <u>3,192</u>   | <u>3.9%</u> |
| Total Members   | 9,562          | 9,805          | 2.5%        |
| Ratio of Retired Members to Active Members                        | 67.7%          | 69.7%          | 2.0%        |
| Active Member Projected Payroll<br>for FYE June 30, 2018 and 2019 | \$ 254,940,772 | \$ 262,713,817 | 3.0%        |
| Average Pay per Active  | \$ 56,204      | \$ 57,349      | 2.0%        |

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The Unfunded Actuarial Liability (UAL) for TCERA increased by \$21.7 million, from \$111.7 million to \$133.3 million. Table I-3 below presents the specific components of the change in the UAL.

Liability experience losses increased the UAL by \$0.3 million and asset losses – i.e., the smoothed investment return below last year's assumed rate of 7.25%, offset by slightly higher than anticipated contributions – increased the UAL by \$23.5 million (net of contribution experience). A detailed breakdown of the liability experience can be found in Table III-2.

| Table I-3  |                |
|--|----------------|
| Change in Unfunded Actuarial Liability           |                |
| Experience                                       | (in thousands) |
| Unfunded actuarial liability, 6/30/2017          | \$ 111,651     |
| Expected change in unfunded actuarial liability  | \$ (2,106)     |
| Increase due to investment loss                  | 23,696         |
| Decrease due to contributions more than expected | (201)          |
| Increase due to liability loss                   | 286            |
| Increase due to assumption changes               | 0              |
| Total change in unfunded actuarial liability     | \$ 21,675      |
| Unfunded actuarial liability, 6/30/2018          | \$ 133,326     |



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**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 increased by 0.53% for the June 30, 2018 valuation. The net employer normal cost rate decreased by 0.16% and the UAL rate increased by 0.69%. The average employee rate decreased by 0.08%, from 8.42% to 8.34%.

Additional details on contributions may be found in Section IV, 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. However, 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<br>Summary Of Contributions                  |               |        |               |        |
|--|---------------|--------|---------------|--------|
|  | FYE 2019      |        | FYE 2020      | Change |
| <u>Contribution Rates</u>                              |               |        |               |        |
| Net Employer Contribution Rate                         | 12.98%        |        | 13.51%        | 0.53%  |
| Estimated Employee Contribution Rate                   | <u>8.42%</u>  |        | <u>8.34%</u>  | -0.08% |
| Total Contribution Rate                                | 21.40%        |        | 21.85%        | 0.45%  |
| Estimated Net Employer Contributions<br>(in thousands) | \$            | 34,073 | \$            | 36,549 |
|  |               |        | \$            | 2,476  |
| <u>Total Contribution Rate</u>                         |               |        |               |        |
| Estimated Employee Contribution Rate                   | 8.42%         |        | 8.34%         | -0.08% |
| Employer Normal Cost Rate                              | <u>9.12%</u>  |        | <u>8.96%</u>  | -0.16% |
| Total Normal Cost Rate                                 | 17.54%        |        | 17.30%        | -0.24% |
| UAL Rate   |               |        |               |        |
| Interest on Market Value UAL                           | 5.07%         |        | 4.86%         | -0.21% |
| Principal on Market Value UAL                          | <u>-1.21%</u> |        | <u>-0.31%</u> | 0.90%  |
| Total UAL Rate   | 3.86%         |        | 4.55%         | 0.69%  |
| Total Contribution Rate                                | 21.40%        |        | 21.85%        | 0.45%  |

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Table I-5 summarizes the changes in the employer contribution rate. The largest change was an increase of 0.69% of pay due to lower than expected investment returns. In addition to asset losses, the only other significant change was a decrease in the employer normal cost rate due to the continuing phase-in of Tier 4 (PEPRA) members. In aggregate, the employer contribution rate increased from 12.98% for FYE 2019 to 13.51% for FYE 2020.

| Table I-5<br>Employer Contribution Reconciliation |             |              |        |
|---|-------------|--------------|--------|
| Item  | Normal Cost | Amortization | Total  |
| FYE 2019 Net Employer Contribution Rate           | 9.12%       | 3.86%        | 12.98% |
| Change due to asset loss                          | 0.00%       | 0.69%        | 0.69%  |
| Change due to contributions greater than expected | 0.00%       | -0.01%       | -0.01% |
| Change due to demographic gains and losses        | -0.16%      | 0.01%        | -0.15% |
| Change due to payroll less than expected          | 0.00%       | 0.00%        | 0.00%  |
| Change due to assumption changes                  | 0.00%       | 0.00%        | 0.00%  |
| Total Change in Employer Rate                     | -0.16%      | 0.69%        | 0.53%  |
| FYE 2020 Net Employer Contribution Rate           | 8.96%       | 4.55%        | 13.51% |

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**Plan Risk**

Table I-6 below shows the ratio of assets to active member payroll for TCERA.

| Table I - 6                                |               |
|--|---------------|
| Asset to Payroll Ratio as of June 30, 2018 |               |
| Active Member Payroll                      | 262,713,817   |
| Assets (Market Value)                      | 1,587,476,000 |
| Ratio of Assets to Payroll                 | 6.04          |
| Ratio with 100% Funding                    | 6.30          |

One of the most important measures of a plan's risk is the ratio of plan assets to payroll. This ratio indicates the sensitivity of the plan to the returns earned on plan assets. We note in the table that assets are currently just over 6 times covered payroll for the Plan; as funding improves and the Plan reaches 100% funding, the ratio of assets to payroll will increase to about 6.3 times payroll, perhaps even higher depending on the Plan's future demographic makeup.

To appreciate the impact of the ratio of assets to payroll on 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 cost is nil, because the assets are so small. On the other hand, consider the situation for TCERA. Suppose TCERA's assets lose 10% of their value in a year. Since they were assumed to earn 7.25%, there is an actuarial loss of 17.25% of assets. Based on the current ratio of assets to payroll (604%), that means the loss in assets is about 104% of active payroll (604% of the 17.25% loss). There is only one source of funding to make up for this loss: contributions. Consequently, barring future offsetting investment gains, the loss must be made up with future contributions.

As the plan matures and becomes better funded, the ratio of assets to payroll will increase. When assets are 630% of pay, the 10% loss discussed above will translate to a loss of over 109% of payroll. Therefore, the Plan is likely to become more sensitive to market variation in the future than it is today.

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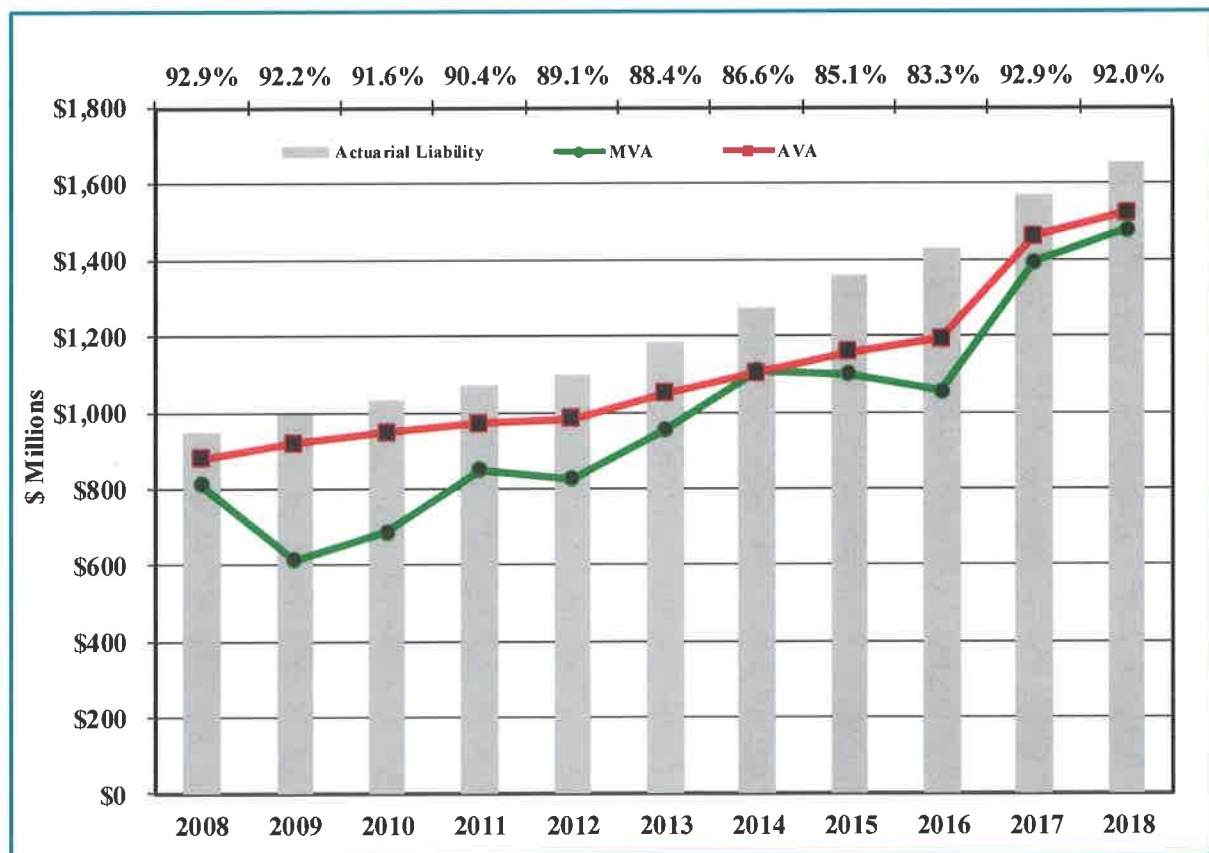
SECTION I – EXECUTIVE SUMMARY

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

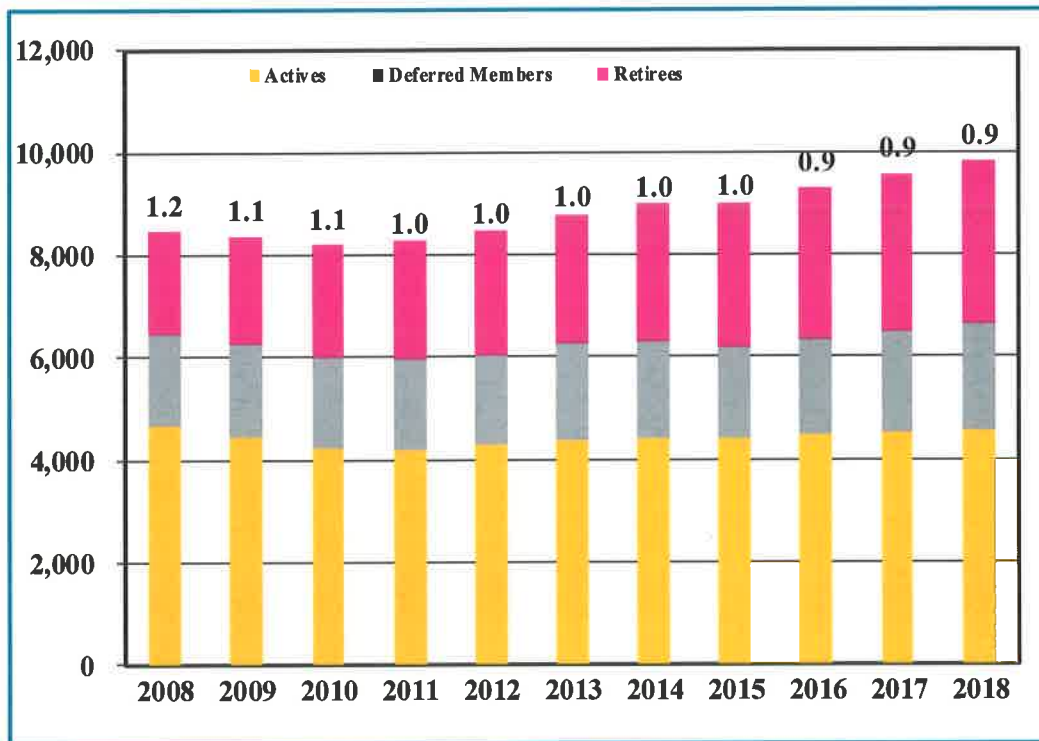
The chart below compares the Market Value of Assets (MVA) and Actuarial Value of Assets (AVA) to the actuarial liabilities. The percentage shown in the graph is the ratio of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio). The funded ratio had declined from 92.9% in 2008 to 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 2018 plan year, the funding ratio decreased to 92.0%.



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**SECTION I – EXECUTIVE SUMMARY**

**Participant Trends**



The chart above provides a measure for Plan maturity by comparing the ratio of active members to inactive members (retirees and deferred members). These ratios are given at the top of each bar. The active-to-inactive ratio has decreased from 2008 to 2018, indicating the ongoing maturation of the Plan. While this is neither good nor bad in itself, it does have implications for the risk profile of the Plan, as discussed under Table I-6 earlier in this section.

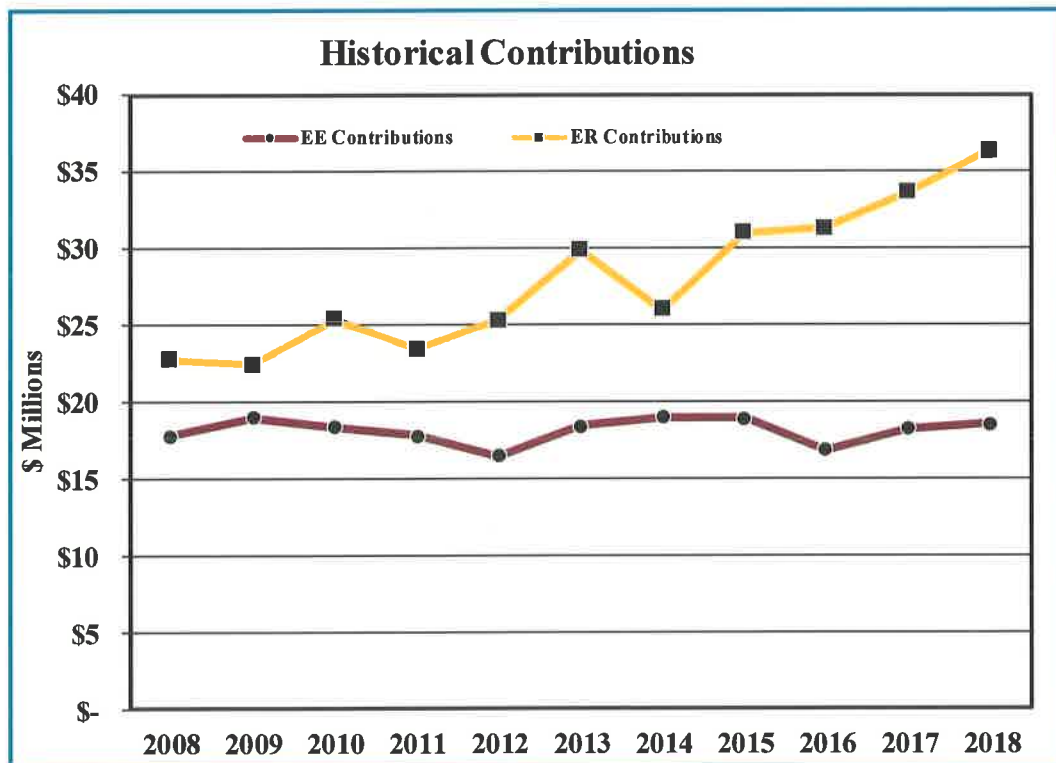
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**Contribution Trends**

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. Due to the 10-year asset smoothing period, those losses continue to be recognized in the employer contribution rates. 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 the recent POB proceeds that exceeded the regular actuarially determined amounts.



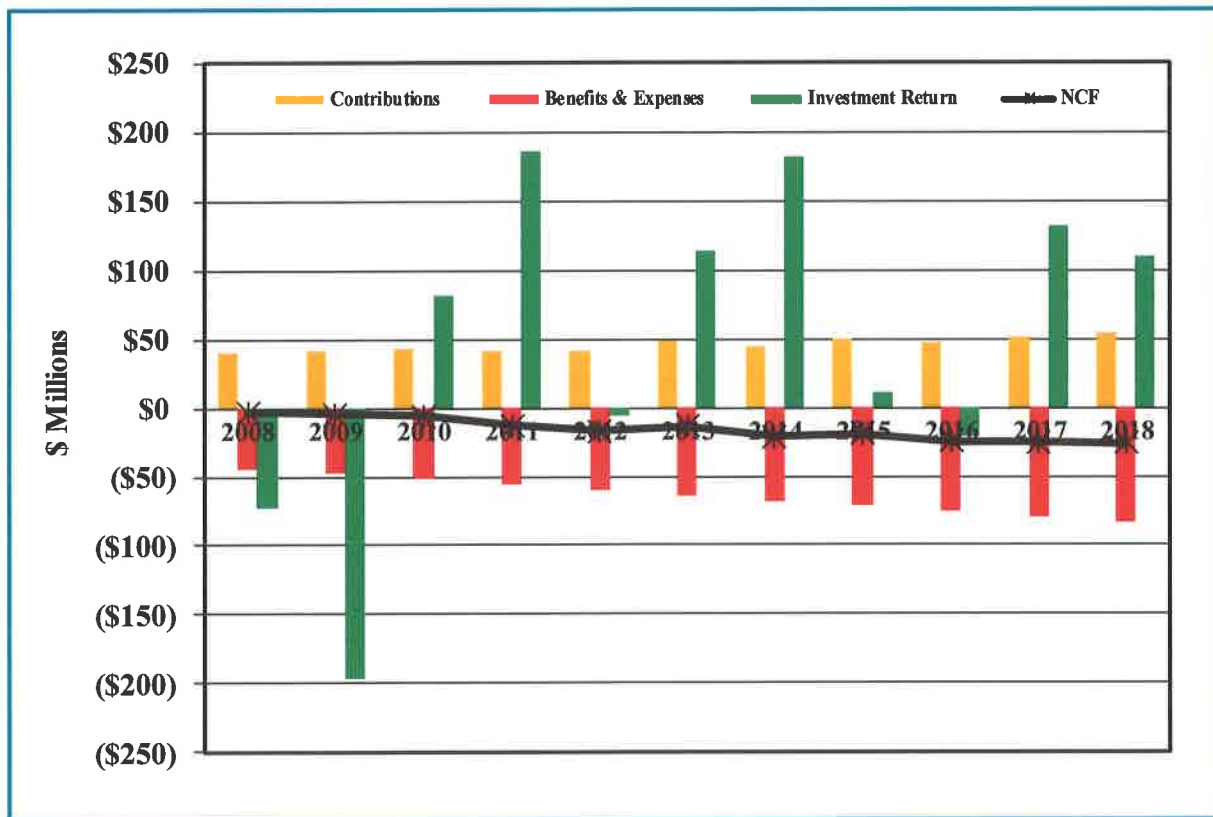
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**SECTION I – EXECUTIVE SUMMARY**

**Cash Flows**

The chart below shows the Plan's cash flow (contribution less benefit payments and 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 recent 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 expenses, was close to zero for the first half of the period shown but has become more negative over the last few years. For the most recent year, the plan had negative cash flow of approximately 1.9% of assets (market value). A negative cash flow magnifies the losses during a market decline hindering the Plan in its ability to absorb market fluctuations. The implications of a plan in negative cash flow are that the impact of market fluctuations can be more severe: as assets are being depleted to pay benefits in down markets, there is less principal available to be reinvested during favorable return periods.



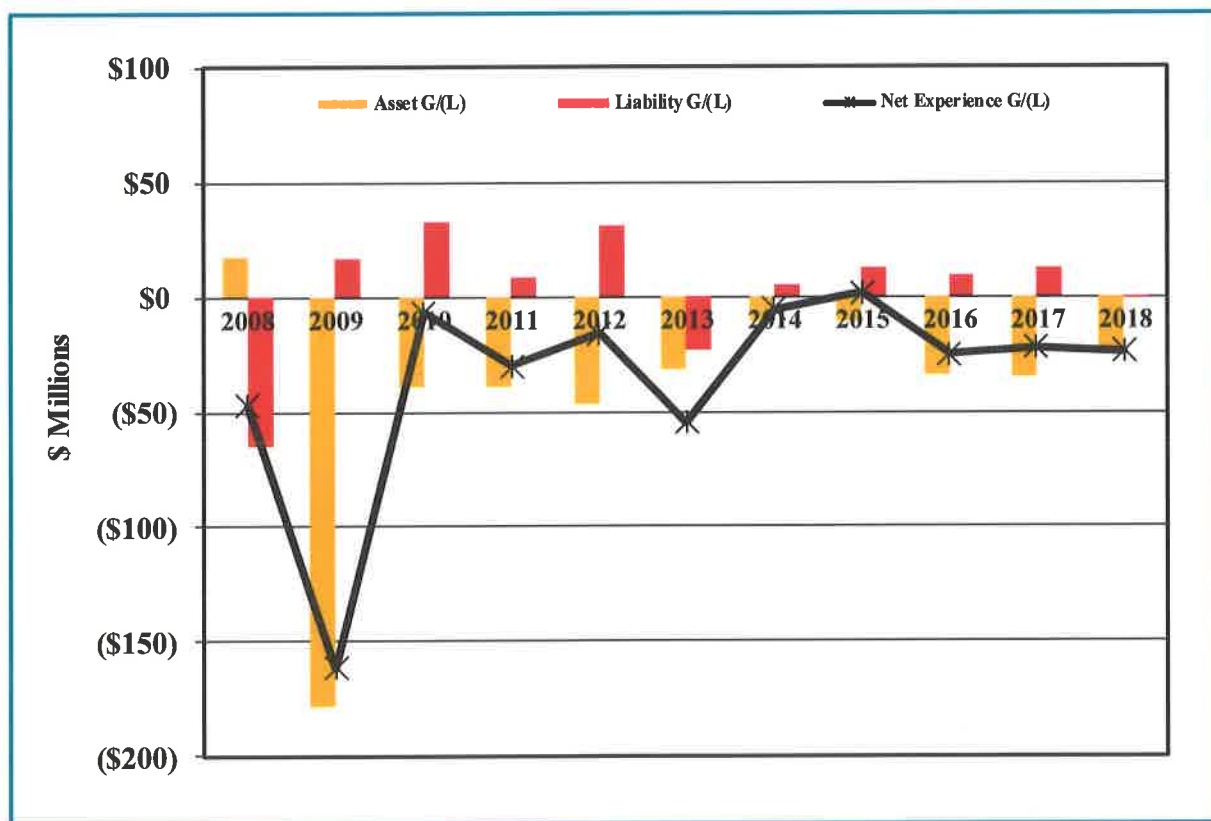
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**Gains and Losses**

The chart below presents the pattern of annual gains and losses, broken into the investment and liability components. The investment gains and losses represent the changes on a smoothed basis (i.e., based on the Actuarial Value of Assets). The chart does not include any changes in TCERA's assets and liabilities attributable to changes to actuarial methods, assumptions or plan benefit changes.

The investment loss in 2008-2009 was by far the most significant gain or loss during the last 10 years. Since the Plan uses 10-year smoothing of asset gains and losses, it continues to recognize the 2008-2009 losses in the Actuarial Value of Assets.



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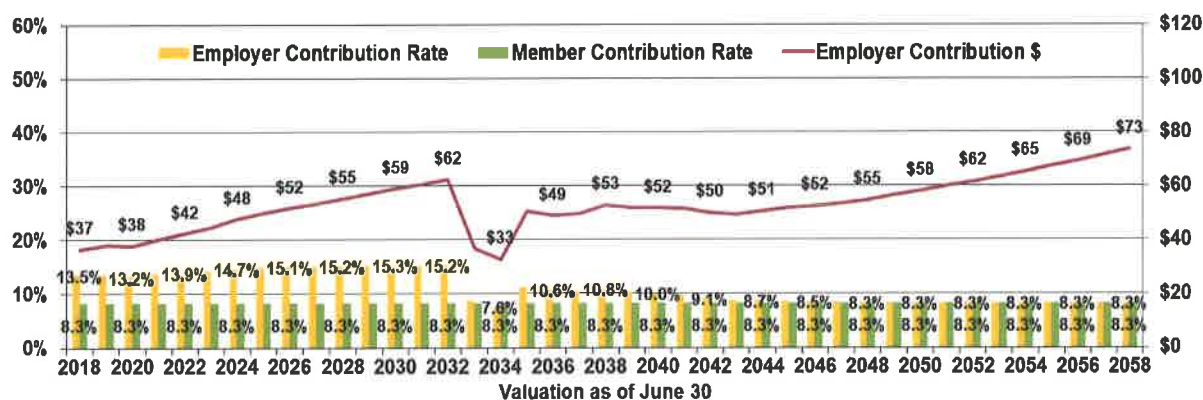
SECTION I – EXECUTIVE SUMMARY

### 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, 2018 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 7.25%. 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), employee contribution rate (green bars), and the employer contribution in millions of dollars (red line) based on achieving the investment assumption **each year** for the next 40 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.

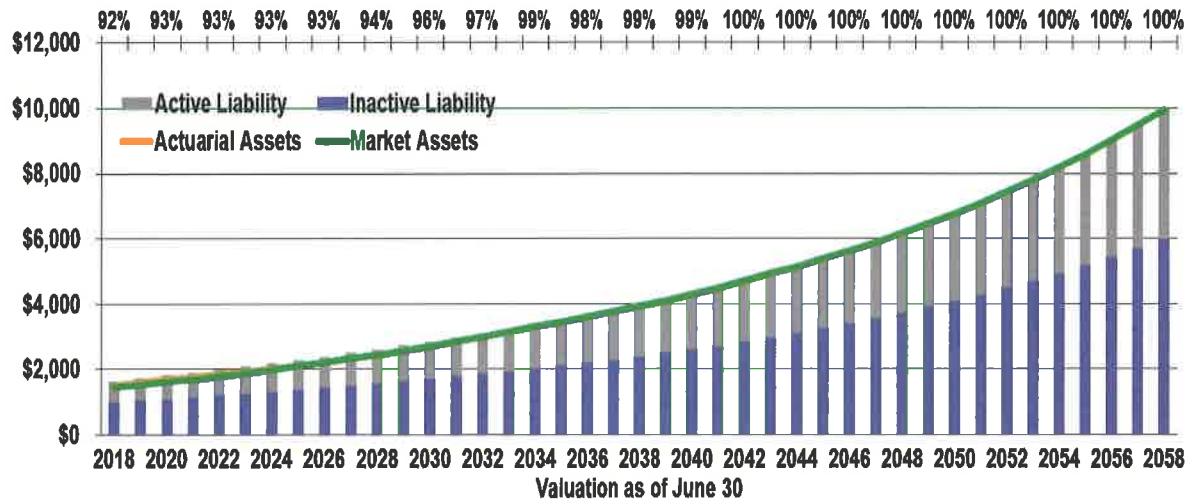
The contribution graph shows that the employer contribution rate is expected to increase slightly for several years as past investment losses are recognized, then experience some fluctuation as certain UAL layers drop off.



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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 2042 assuming the actuarial assumptions are achieved.

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 – 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, 2017 and June 30, 2018;
- 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 II-1 on the next page discloses and compares each asset value as of June 30, 2017 and June 30, 2018.

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**SECTION II – ASSETS**

| Table II-1<br>Statement of Assets at Market Value                                |                         |                         |
|--|-------------------------|-------------------------|
|  | June 30, 2017           | June 30, 2018*          |
| <b>Cash and Securities Lending Collateral:</b>                                   |                         |                         |
| Cash and Short Term Investments  | \$ 59,581,311           | \$ 275,907,000          |
| Collateral on Loaned Securities  | 55,755,489              | 60,537,000              |
| Total Cash and Securities Lending Collateral                                     | \$ 115,336,800          | \$ 336,444,000          |
| <b>Receivables:</b>  |                         |                         |
| Sales of Investments   | \$ 24,718,343           | \$ 19,248,000           |
| Interest and Dividends   | 1,770,583               | 2,198,000               |
| Employee and Employer Contributions  | 1,122,850               | 1,242,000               |
| Other Receivables  | 32,937                  | 26,000                  |
| Total Receivables  | \$ 27,644,713           | \$ 22,714,000           |
| <b>Investments, at Fair Value:</b>   |                         |                         |
| U.S. Government Obligations  | \$ 88,415,682           | \$ 76,387,000           |
| Global Bonds   | 75,883,564              | 82,409,000              |
| Domestic Corporate Bonds   | 221,648,992             | 217,775,000             |
| Domestic Stocks  | 260,877,773             | 304,005,000             |
| International Stocks   | 308,184,443             | 319,175,000             |
| Real Estate  | 101,063,213             | 117,844,000             |
| Commodities  | 37,068,592              | 41,679,000              |
| Alternative Investments (Hedge Funds, Private Equity, Futures)                   | 138,687,689             | 171,415,000             |
| Total Investments, at Fair Value   | \$ 1,231,829,948        | \$ 1,330,689,000        |
| <b>Capital Assets</b>  |                         |                         |
| Land   | \$ 370,346              | \$ 370,000              |
| Building, Office Equipment and Furniture Net of Accumulated Depreciation         | 793,960                 | 761,000                 |
| Intangible Assets, Pension Administration System Net of Accumulated Depreciation | 1,516,752               | 1,213,000               |
| Total Capital Assets   | \$ 2,681,058            | \$ 2,344,000            |
| <b>Total Assets</b>  | <b>\$ 1,377,492,519</b> | <b>\$ 1,692,191,000</b> |
| <b>Current Liabilities:</b>  |                         |                         |
| Purchase of Investments  | \$ 47,931,143           | \$ 39,573,000           |
| Obligations under Security Lending Program                                       | 55,755,489              | 60,537,000              |
| Refunds Payable  | 1,985,806               | 2,626,000               |
| Accounts Payable   | 1,481,596               | 1,847,000               |
| Total Current Liabilities  | \$ 107,154,034          | \$ 104,583,000          |
| <b>Long-Term Liabilities:</b>  |                         |                         |
| Compensated Absences   | \$ 112,707              | \$ 132,000              |
| Total Long-Term Liabilities  | \$ 112,707              | \$ 132,000              |
| <b>Total Liabilities</b>   | <b>\$ 107,266,741</b>   | <b>\$ 104,715,000</b>   |
| <b>Total Market Value of Assets, without POB</b>                                 | <b>\$ 1,270,225,778</b> | <b>\$ 1,587,476,000</b> |
| Receivable for POB Contribution**  | \$ 233,100,233          | \$ 0                    |
| <b>Total Market Value of Assets for Valuation</b>                                | <b>\$ 1,503,326,011</b> | <b>\$ 1,587,476,000</b> |

\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.

\*\*Based on the expected contribution of \$250 million, discounted with one year of interest at the assumed discount rate (7.25%) with an assumed contribution date of June 30, 2018.

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**SECTION II – 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 II-2 below shows the components of change in the Market Value of Assets during the fiscal years ending June 30, 2017 and June 30, 2018. Other Income for the period ending June 30, 2018 includes interest on the discounted receivable POB contribution.

| Table II-2<br>Changes in Market Values                          |                       |                       |
|---|-----------------------|-----------------------|
|   | June 30, 2017         | June 30, 2018*        |
| <b>Additions:</b>   |                       |                       |
| Contributions   |                       |                       |
| Employer  | \$ 33,615,885         | \$ 36,263,000         |
| Plan Member   | 18,190,415            | 18,512,000            |
| Total Contributions   | \$ 51,806,300         | \$ 54,775,000         |
| Investment Income   |                       |                       |
| Net Appreciation/(Depreciation) in<br>Fair Value of Investments | \$ 127,697,895        | \$ 87,044,000         |
| Interest  | 5,109,375             | 6,091,000             |
| Dividends   | 3,803,026             | 3,564,000             |
| Real Estate Operating Income                                    | 2,526,209             | 3,630,000             |
| Other Investment Income   | 1,035,040             | 3,189,000             |
| Total Investment Activity Income/(Loss)                         | \$ 140,171,545        | \$ 103,518,000        |
| Less Expenses from Investing Activities                         | 7,718,257             | 8,010,000             |
| Net Investing Activity Income/(Loss)                            | \$ 132,453,288        | \$ 95,508,000         |
| From Securities Lending Activities                              |                       |                       |
| Securities Lending Income                                       | \$ 624,617            | \$ 1,014,000          |
| Less Expenses from Securities Lending Income                    |                       |                       |
| Management Fee  | \$ 12,625             | \$ 12,000             |
| Borrower Rebate   | 365,848               | 840,000               |
| Net Securities Lending Income                                   | \$ 246,144            | \$ 162,000            |
| Total Net Investment Income/(Loss)                              | \$ 132,699,432        | \$ 95,670,000         |
| Other Income  | \$ 165,600            | \$ 17,087,000         |
| <b>Total Additions</b>  | <b>\$ 184,671,332</b> | <b>\$ 167,532,000</b> |

\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.

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

| Table II-2<br>Changes in Market Values (Continued)          |                       |                      |
|---|-----------------------|----------------------|
|   | June 30, 2017         | June 30, 2018*       |
| <b>Deductions:</b>  |                       |                      |
| Benefits  | \$ 73,442,266         | \$ 77,083,000        |
| Refunds of Contributions                                    | 3,519,060             | 3,633,000            |
| Administrative Expenses                                     | 2,611,562             | 2,666,000            |
| Total Deductions  | \$ 79,572,888         | \$ 83,382,000        |
| <b>Net Increase/(Decrease)</b>                              | <b>\$ 105,098,444</b> | <b>\$ 84,150,000</b> |
| <b><u>Net Assets Held in Trust for Pension Benefits</u></b> |                       |                      |
| Beginning of Year   | \$ 1,165,127,334      | \$ 1,503,326,000     |
| End of Year, without POB Receivable                         | \$ 1,270,225,778      | \$ 1,587,476,000     |
| Expected POB Contribution**                                 | \$ 233,100,233        | \$ 0                 |
| End of Year for Valuation                                   | \$ 1,503,326,011      | \$ 1,587,476,000     |
| Approximate Return***                                       | 11.29%                | 7.39%                |

\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.

\*\*Based on the expected contribution of \$250 million, discounted with one year of interest at the assumed discount rate (7.25%) with an assumed contribution date of June 30, 2018.

\*\*\*Net of investment and administrative expenses.



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION II – 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.

| Table II-3<br>Development of Actuarial Value of Assets for June 30, 2018 |           |   |   |                                   |                            |                            |
|--|-----------|---|---|-----------------------------------|----------------------------|----------------------------|
| <b>Six month<br/>Period</b>  |           | <b>Total Actual<br/>Market<br/>Return (net)</b> | <b>Expected<br/>Market<br/>Return (net)</b> | <b>Investment<br/>Gain (Loss)</b> | <b>Deferred<br/>Factor</b> | <b>Deferred<br/>Return</b> |
| <b>From</b>  | <b>To</b> |   |   |                                   |                            |                            |
| 1/09   | 6/09      | \$ 5,932,310                                    | \$ 29,502,818                               | \$ (23,570,509)                   | 0.05                       | \$ (1,178,525)             |
| 7/09   | 12/09     | 111,719,499                                     | 29,390,608                                  | 82,328,891                        | 0.10                       | 8,232,889                  |
| 1/10   | 6/10      | (33,675,854)                                    | 33,673,605                                  | (67,349,458)                      | 0.15                       | (10,102,419)               |
| 7/10   | 12/10     | 130,581,862                                     | 32,462,428                                  | 98,119,434                        | 0.20                       | 19,623,887                 |
| 1/11   | 6/11      | 49,953,925                                      | 37,183,527                                  | 12,770,398                        | 0.25                       | 3,192,599                  |
| 7/11   | 12/11     | (58,996,703)                                    | 39,029,015                                  | (98,025,719)                      | 0.30                       | (29,407,716)               |
| 1/12   | 6/12      | 46,133,182                                      | 36,032,847                                  | 10,100,335                        | 0.35                       | 3,535,117                  |
| 7/12   | 12/12     | 61,934,352                                      | 38,223,420                                  | 23,710,932                        | 0.40                       | 9,484,373                  |
| 1/13   | 6/13      | 45,446,072                                      | 39,915,825                                  | 5,530,247                         | 0.45                       | 2,488,611                  |
| 7/13   | 12/13     | 114,083,453                                     | 41,675,731                                  | 72,407,722                        | 0.50                       | 36,203,861                 |
| 1/14   | 6/14      | 62,482,815                                      | 45,022,478                                  | 17,460,337                        | 0.55                       | 9,603,185                  |
| 7/14   | 12/14     | (17,886,044)                                    | 46,676,782                                  | (64,562,826)                      | 0.60                       | (38,737,696)               |
| 1/15   | 6/15      | 26,507,383                                      | 44,856,580                                  | (18,349,197)                      | 0.65                       | (11,926,978)               |
| 7/15   | 12/15     | (45,631,715)                                    | 45,909,756                                  | (91,541,471)                      | 0.70                       | (64,079,030)               |
| 1/16   | 6/16      | 24,729,226                                      | 43,045,278                                  | (18,316,052)                      | 0.75                       | (13,737,039)               |
| 7/16   | 12/16     | 44,835,718                                      | 44,015,787                                  | 819,931                           | 0.80                       | 655,945                    |
| 1/17   | 6/17      | 84,564,705                                      | 42,691,625                                  | 41,873,080                        | 0.85                       | 35,592,118                 |
| 7/17   | 12/17     | 79,943,304                                      | 45,809,189                                  | 34,134,115                        | 0.90                       | 30,720,704                 |
| 1/18   | 6/18      | 13,818,128                                      | 48,460,635                                  | (34,642,507)                      | 0.95                       | (32,910,382)               |
| 1. Total deferred return   |           |   |   |                                   |                            | (42,746,495)               |
| 2. Market Value of Assets (includes SRBR)                                |           |   |   |                                   |                            | 1,587,476,000              |
| 3. Actuarial Value of Assets for Funding Ratio (2. - 1.)                 |           |   |   |                                   |                            | 1,630,222,495              |
| 4. Non-valuation reserves and designations:                              |           |   |   |                                   |                            |                            |
| a. Supplemental Retiree Benefit Reserve (SRBR)                           |           |   |   |                                   |                            | 107,192,000                |
| 5. Preliminary Actuarial Value of Assets (3. - 4.)                       |           |   |   |                                   |                            | 1,523,030,495              |
| 6. Corridor Limit  |           |   |   |                                   |                            |                            |
| a. 70% of Market Value of Assets excluding SRBR                          |           |   |   |                                   |                            | 1,036,198,800              |
| b. 130% of Market Value of Assets excluding SRBR                         |           |   |   |                                   |                            | 1,924,369,200              |
| 7. Actuarial Value of Assets after Corridor                              |           |   |   |                                   |                            | 1,523,030,495              |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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SECTION II – ASSETS

**Allocation of Reserve Balances**

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

Note that the FYE 2017 reserve balances do not include the expected contribution from POB proceeds.

| Table II-4<br>Allocation of Assets by Accounting Reserve Amounts<br>for the Years Ended June 30, 2017 and June 30, 2018 |                         |                         |
|---|-------------------------|-------------------------|
|   | FYE 2017                | FYE 2018*               |
| 1. Member Deposit Reserve   | \$ 278,900,255          | \$ 287,078,000          |
| 2. Employer Advance Reserve   | 509,155,763             | 781,335,000             |
| 3. Retiree Reserve  | 400,056,600             | 405,175,000             |
| 4. Supplemental Retiree Benefit Reserve   | 108,203,552             | 107,192,000             |
| 5. Contingency Reserve  | 39,662,444              | 48,895,000              |
| 6. Market Stabilization Reserve   | (66,632,628)            | (45,232,000)            |
| 7. TCERA Property, Inc. Retained Earnings   | 413,441                 | 535,000                 |
| 8. Other Reserves   | 466,351                 | 2,498,000               |
| <b>Total Reserves</b>   | <b>\$ 1,270,225,778</b> | <b>\$ 1,587,476,000</b> |

*\*\$1,000 rounding reflected beginning with the year ending June 30, 2018.*

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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SECTION II – ASSETS

**Asset Returns vs. Inflation**

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

| Table II-5<br>Net Return on Assets vs. Increase in Consumer Price Index |                                |                                   |  |
|---|--------------------------------|-----------------------------------|--|
| Year Ended<br>June 30   | Net Return at<br>Market Value* | Net Return at<br>Actuarial Value* | Increase in<br>Consumer Price<br>Index** |
| 2009  | -20.8%                         | 5.1%                              | -1.4%                                    |
| 2010  | 10.3%                          | 3.6%                              | 1.1%                                     |
| 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%                                     |
| <b>Compound Average</b>   | <b>4.9%</b>                    | <b>4.8%</b>                       | <b>1.4%</b>                              |
| * Net of investment and administrative expenses.                        |                                |                                   |  |
| ** Based on All Urban Consumers - U.S. City Average, June indices.      |                                |                                   |  |

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

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

- **Disclosure** of System liabilities at June 30, 2017 and June 30, 2018;
- 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 III-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, 2018**

**SECTION III – LIABILITIES**

| Table III-1<br>Present Value of Future Benefits and Actuarial Liability<br>(in thousands) |                     |                   |                        |                        |
|---|---------------------|-------------------|------------------------|------------------------|
| Item  | General             | Safety            | June 30, 2018<br>Total | June 30, 2017<br>Total |
| <b>Present Value of Future Benefits (PVFB)</b>  |                     |                   |                        |                        |
| Actives   | \$ 724,856          | \$ 293,281        | \$ 1,018,137           | \$ 990,922             |
| Terminated Vested   | 101,386             | 25,688            | 127,074                | 125,352                |
| Retirees  | 542,584             | 156,536           | 699,120                | 656,585                |
| Disabled  | 51,354              | 55,684            | 107,038                | 95,418                 |
| Beneficiaries   | 42,511              | 21,060            | 63,571                 | 56,796                 |
| <b>Total PVFB</b>   | <b>\$ 1,462,691</b> | <b>\$ 552,249</b> | <b>\$ 2,014,940</b>    | <b>\$ 1,925,073</b>    |
| <b>Actuarial Liability</b>  |                     |                   |                        |                        |
| Total Present Value of Benefits   | \$ 1,462,691        | \$ 552,249        | \$ 2,014,940           | \$ 1,925,073           |
| Present Value of Future Normal Costs  |                     |                   |                        |                        |
| Employer Portion  | 128,959             | 61,289            | 190,248                | 187,467                |
| Employee Portion  | 117,023             | 51,313            | 168,336                | 164,199                |
| <b>Actuarial Liability</b>  | <b>\$ 1,216,709</b> | <b>\$ 439,648</b> | <b>\$ 1,656,357</b>    | <b>\$ 1,573,406</b>    |
| Actuarial Value of Assets   | \$ 1,117,600        | \$ 405,431        | \$ 1,523,030           | \$ 1,461,755           |
| Funded Ratio  | 91.9%               | 92.2%             | 92.0%                  | 92.9%                  |
| <b>Unfunded Actuarial Liability/(Surplus)</b>   | <b>\$ 99,109</b>    | <b>\$ 34,217</b>  | <b>\$ 133,326</b>      | <b>\$ 111,651</b>      |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**SECTION III – 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 III-2</b><br><b>Development of 2018 Experience Gain/(Loss)</b><br>(in thousands) |             |
|---|-------------|
| <b>Item</b>   | <b>Cost</b> |
| 1. Unfunded Actuarial Liability at June 30, 2017  | \$ 111,651  |
| 2. Middle of year actuarial liability payment   | (9,850)     |
| 3. Interest to end of year on 1 and 2   | 7,744       |
| 4. Impact of assumption changes   | -           |
| 5. Expected Unfunded Actuarial Liability at June 30, 2018                                 | \$ 109,545  |
| 6. Actual Unfunded Liability at June 30, 2018 (AVA basis)                                 | 133,326     |
| 7. Net Gain/(Loss): (5 - 6)   | \$ (23,781) |
| 8. Portion of net gain/(loss) due to:   |             |
| a. Investment experience loss   | \$ (23,696) |
| b. Contributions greater than expected  | 201         |
| c. New entrant loss   | (1,627)     |
| d. Inactive mortality loss  | (1,209)     |
| e. COLAs more than expected   | (5,531)     |
| f. Salaries less than expected  | 6,724       |
| g. Retirements  | 1,206       |
| h. Terminations   | (958)       |
| i. Other experience   | 1,109       |
| j Total gain/(loss)   | \$ (23,781) |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**SECTION III – LIABILITIES**

Table III-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, 2018 is positive, meaning that the current SRBR balance is expected to cover SRBR benefits at current levels.

| Table III-3<br>Supplemental Retiree Benefit Reserve as of June 30, 2018          |                    |                    |
|--|--------------------|--------------------|
|  | June 30, 2017      | June 30, 2018      |
| <b>Level One</b>   |                    |                    |
| 1. Current Retirees  | \$ 54,449,298      | \$ 56,181,622      |
| 2. Inactive Members  | 2,390,763          | 2,348,088          |
| 3. Active members  | <u>37,949,971</u>  | <u>37,225,982</u>  |
| 4. Subtotal  | \$ 94,790,032      | \$ 95,755,692      |
| <b>Level Two</b>   |                    |                    |
| 5. Supplemental COLA for those who have<br>lost at least 15% of Purchasing Power | \$ 826,292         | \$ 810,834         |
| <b>Level Three</b>   |                    |                    |
| 6. Supplemental Spousal Death Benefit  | \$ 3,214,068       | \$ 3,601,253       |
| 7. <b>Total SRBR Combined Liability: (4) + (5) + (6)</b>                         | \$ 98,830,392      | \$ 100,167,779     |
| 8. <b>Supplemental Retiree Benefit Reserve: (SRBR)</b>                           | <u>108,203,552</u> | <u>107,192,000</u> |
| 9. <b>Net Reserve: (8) - (7)</b>   | \$ 9,373,160       | \$ 7,024,221       |



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

The top portion of Table III-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 (\$98.4 million) as well as the accrued portion of the present value of future transfers to the SRBR (\$111.0 million). In addition, the SRBR balance of \$107.2 million as of June 30, 2018 is added to the asset values. Note that the present value of future transfers to the SRBR is higher than in the prior valuation, largely due to the additional POB funds included for the plan year ending June 30, 2018.

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.

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 III-4</b><br><b>Disclosure of SRBR Liabilities</b><br>(in thousands) |                      |
|---|----------------------|
| <b>Valuation Date</b>   | <b>June 30, 2018</b> |
| <u>Without SRBR</u>   |                      |
| Actuarial Liability (Excluding SRBR)  | \$ 1,656,357         |
| Actuarial Value of Assets (Excluding SRBR)                                    | 1,523,030            |
| Market Value of Assets (Excluding SRBR)                                       | 1,480,284            |
| Funded Ratio - Actuarial Value Basis  | 92.0%                |
| Funded Ratio - Market Value Basis   | 89.4%                |
| <u>With SRBR</u>  |                      |
| Actuarial Liability (Excluding SRBR)  | \$ 1,656,357         |
| Liability Associated with Current SRBR Balance                                | 98,407               |
| Liability from Future Transfers   | 110,992              |
| Total Liability with SRBR   | \$ 1,865,755         |
| Actuarial Value of Assets (Including SRBR)                                    | \$ 1,630,222         |
| Market Value of Assets (Including SRBR)                                       | 1,587,476            |
| Funded Ratio - Actuarial Value Basis  | 87.4%                |
| Funded Ratio - Market Value Basis   | 85.1%                |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION IV – 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. 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, 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.

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, 2018**

**SECTION IV – CONTRIBUTIONS**

The employer contribution rates for FYE 2020 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 IV-1(a)<br>Development of the Net Employer Contribution Rate as of June 30, 2018 for FYE 2020 |               |               |               |               |
|---|---------------|---------------|---------------|---------------|
|   | Tier 1        | Tier 2 & 3    | Tier 4        | Total         |
| <b>General (County)</b>   |               |               |               |               |
| 1. Total Normal Cost Rate   | 13.61%        | 16.31%        | 14.40%        | 15.63%        |
| 2. Member Contribution Rate   | <u>0.53%</u>  | <u>8.00%</u>  | <u>7.20%</u>  | <u>7.69%</u>  |
| 3. Employer Normal Cost Rate (1-2)  | 13.08%        | 8.31%         | 7.20%         | 7.94%         |
| 4. UAL Amortization   | <u>3.83%</u>  | <u>3.83%</u>  | <u>3.83%</u>  | <u>3.83%</u>  |
| 5. Net Employer Contribution Rate (3+4)   | 16.91%        | 12.14%        | 11.03%        | 11.77%        |
| <b>General (Non-County)</b>   |               |               |               |               |
| 1. Total Normal Cost Rate   | 13.61%        | 16.31%        | 14.40%        | 15.63%        |
| 2. Member Contribution Rate   | <u>0.53%</u>  | <u>8.00%</u>  | <u>7.20%</u>  | <u>7.69%</u>  |
| 3. Employer Normal Cost Rate (1-2)  | 13.08%        | 8.31%         | 7.20%         | 7.94%         |
| 4. UAL Amortization   | <u>11.20%</u> | <u>11.20%</u> | <u>11.20%</u> | <u>11.20%</u> |
| 5. Net Employer Contribution Rate (3+4)   | 24.28%        | 19.51%        | 18.40%        | 19.14%        |
| <b>Safety (County)</b>  |               |               |               |               |
| 1. Total Normal Cost Rate   | N/A           | 22.48%        | 24.25%        | 22.93%        |
| 2. Member Contribution Rate   | <u>N/A</u>    | <u>10.02%</u> | <u>12.12%</u> | <u>10.56%</u> |
| 3. Employer Normal Cost Rate (1-2)  | N/A           | 12.46%        | 12.12%        | 12.37%        |
| 4. UAL Amortization   | <u>N/A</u>    | <u>5.12%</u>  | <u>5.12%</u>  | <u>5.12%</u>  |
| 5. Net Employer Contribution Rate (3+4)   | N/A           | 17.58%        | 17.24%        | 17.49%        |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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SECTION IV – CONTRIBUTIONS

The employer contribution rates for FYE 2019 are shown in the table below, split by tier (1-4) and membership class (General or Safety).

| Table IV-1(b)<br>Development of the Net Employer Contribution Rate as of June 30, 2017 for FYE 2019 |               |               |               |               |  |
|---|---------------|---------------|---------------|---------------|--|
|   | Tier 1        | Tier 2 & 3    | Tier 4        | Total         |  |
| <b>General (County)</b>   |               |               |               |               |  |
| 1. Total Normal Cost Rate   | 13.22%        | 16.54%        | 14.40%        | 15.88%        |  |
| 2. Member Contribution Rate   | <u>0.46%</u>  | <u>8.13%</u>  | <u>7.20%</u>  | <u>7.80%</u>  |  |
| 3. Employer Normal Cost Rate (1-2)  | 12.76%        | 8.41%         | 7.20%         | 8.08%         |  |
| 4. UAL Amortization   | <u>3.27%</u>  | <u>3.27%</u>  | <u>3.27%</u>  | <u>3.27%</u>  |  |
| 5. Net Employer Contribution Rate (3+4)   | 16.03%        | 11.68%        | 10.47%        | 11.35%        |  |
| <b>General (Non-County)</b>   |               |               |               |               |  |
| 1. Total Normal Cost Rate   | 13.22%        | 16.54%        | 14.40%        | 15.88%        |  |
| 2. Member Contribution Rate   | <u>0.46%</u>  | <u>8.13%</u>  | <u>7.20%</u>  | <u>7.80%</u>  |  |
| 3. Employer Normal Cost Rate (1-2)  | 12.76%        | 8.41%         | 7.20%         | 8.08%         |  |
| 4. UAL Amortization   | <u>10.68%</u> | <u>10.68%</u> | <u>10.68%</u> | <u>10.68%</u> |  |
| 5. Net Employer Contribution Rate (3+4)   | 23.44%        | 19.09%        | 17.88%        | 18.76%        |  |
| <b>Safety (County)</b>  |               |               |               |               |  |
| 1. Total Normal Cost Rate   | 21.57%        | 22.67%        | 24.17%        | 22.96%        |  |
| 2. Member Contribution Rate   | <u>0.00%</u>  | <u>10.07%</u> | <u>12.09%</u> | <u>10.44%</u> |  |
| 3. Employer Normal Cost Rate (1-2)  | 21.57%        | 12.59%        | 12.09%        | 12.52%        |  |
| 4. UAL Amortization   | <u>4.01%</u>  | <u>4.01%</u>  | <u>4.01%</u>  | <u>4.01%</u>  |  |
| 5. Net Employer Contribution Rate (3+4)   | 25.58%        | 16.60%        | 16.10%        | 16.53%        |  |

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

The combined General and Safety employer contribution rates for FYE 2020 are shown in the table below, split by tier (1-4). Separate rates are shown above and below the first \$161.54 of biweekly compensation (Social Security Integration).

| Table IV-2(a)<br>Development of the Employer Contribution Rate as of June 30, 2018 for FYE 2020<br>with Social Security Integration |        |            |        |        |
|---|--------|------------|--------|--------|
|   | Tier 1 | Tier 2 & 3 | Tier 4 | Total  |
| <b>General and Safety</b>   |        |            |        |        |
| 1. Employer Normal Cost Rate:   |        |            |        |        |
| a. Rate on first \$161.54 of biweekly compensation  | 13.08% | 9.36%      | 8.08%  | 8.96%  |
| b. Rate on biweekly compensation in excess of \$161.54  | 8.94%  | 6.39%      |        |        |
|   | 13.41% | 9.59%      |        |        |
| 2. UAL Rate:  |        |            |        |        |
| a. Rate on first \$161.54 of biweekly compensation  | 4.39%  | 4.58%      | 4.52%  | 4.56%  |
| b. Rate on biweekly compensation in excess of \$161.54  | 3.00%  | 3.12%      |        |        |
|   | 4.50%  | 4.69%      |        |        |
| 3. Total Rate (1 + 2):  |        |            |        |        |
| a. Rate on first \$161.54 of biweekly compensation  | 17.47% | 13.94%     | 12.60% | 13.52% |
| b. Rate on biweekly compensation in excess of \$161.54  | 11.94% | 9.52%      |        |        |
|   | 17.91% | 14.28%     |        |        |

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

The employer contribution rates for FYE 2020 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 IV-2(b)<br/>Development of the Employer Contribution Rate as of June 30, 2018 for FYE 2020<br/>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:  | 13.08%        | 8.31%                 | 7.20%         | 7.94%        |
| a. Rate on first \$161.54 of biweekly compensation   | 8.94%         | 5.68%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 13.41%        | 8.52%                 |               |              |
| 2. UAL Rate:   | 3.83%         | 3.83%                 | 3.83%         | 3.83%        |
| a. Rate on first \$161.54 of biweekly compensation   | 2.62%         | 2.62%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 3.93%         | 3.93%                 |               |              |
| 3. Total Rate (1 + 2):   | 16.91%        | 12.14%                | 11.03%        | 11.77%       |
| a. Rate on first \$161.54 of biweekly compensation   | 11.56%        | 8.30%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 17.34%        | 12.44%                |               |              |
| <b>General (Non-County)</b>  |               |                       |               |              |
| 1. Employer Normal Cost Rate:  | 13.08%        | 8.31%                 | 7.20%         | 7.94%        |
| a. Rate on first \$161.54 of biweekly compensation   | 8.94%         | 5.68%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 13.41%        | 8.52%                 |               |              |
| 2. UAL Rate:   | 11.20%        | 11.20%                | 11.20%        | 11.20%       |
| a. Rate on first \$161.54 of biweekly compensation   | 7.66%         | 7.66%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 11.48%        | 11.48%                |               |              |
| 3. Total Rate (1 + 2):   | 24.28%        | 19.51%                | 18.40%        | 19.14%       |
| a. Rate on first \$161.54 of biweekly compensation   | 16.60%        | 13.33%                |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | 24.89%        | 20.00%                |               |              |
| <b>Safety (County)</b>   |               |                       |               |              |
| 1. Employer Normal Cost Rate:  | N/A           | 12.46%                | 12.12%        | 12.37%       |
| a. Rate on first \$161.54 of biweekly compensation   | N/A           | 8.48%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | N/A           | 12.72%                |               |              |
| 2. UAL Rate:   | N/A           | 5.12%                 | 5.12%         | 5.12%        |
| a. Rate on first \$161.54 of biweekly compensation   | N/A           | 3.48%                 |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | N/A           | 5.23%                 |               |              |
| 3. Total Rate (1 + 2):   | N/A           | 17.58%                | 17.24%        | 17.49%       |
| a. Rate on first \$161.54 of biweekly compensation   | N/A           | 11.96%                |               |              |
| b. Rate on biweekly compensation in excess of \$161.54   | N/A           | 17.95%                |               |              |



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

Table IV-3 below shows information on each layer of the June 30, 2018 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 IV-3<br>Development of Amortization Payment<br>For the June 30, 2018 Actuarial Valuation |                     |                   |                                  |   |                                    |                        |
|--|---------------------|-------------------|----------------------------------|---|------------------------------------|------------------------|
| Type of Base   | Date<br>Established | Initial<br>Amount | Initial<br>Amortization<br>Years | June 30, 2018<br>Outstanding<br>Balance | Remaining<br>Amortization<br>Years | Amortization<br>Amount |
| 1. Initial UAL   | 06/30/2015          | 201,848,216       | 19                               | 196,472,282                             | 16                                 | 16,926,332             |
| 2. (Gain)/Loss Base  | 06/30/2016          | 38,033,040        | 19                               | 37,454,763                              | 17                                 | 3,092,079              |
| 3. (Gain)/Loss Base  | 06/30/2017          | 25,611,386        | 19                               | 25,438,103                              | 18                                 | 2,019,100              |
| 4. Assumption Change Base  | 06/30/2017          | 82,259,297        | 19                               | 81,702,742                              | 18                                 | 6,484,997              |
| 5. POB Contribution Base   | 06/30/2017          | (233,100,233)     | 19                               | (231,523,109)                           | 18                                 | (18,376,698)           |
| 6. (Gain)/Loss Base  | 06/30/2018          | 23,781,349        | 19                               | 23,781,349                              | 19                                 | 1,820,220              |
| <b>Total</b>   |                     |                   |                                  | \$ 133,326,130                          | \$                                 | 11,966,030             |

If the UAL payment above of \$11,966,030 is calculated based on a single-equivalent period with the June 30, 2018 UAL of \$133,326,130, 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 IV – CONTRIBUTIONS**

Table IV-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 2018 provided for the GASB 67/68 report. Following direction from Staff, the pensionable payroll for TCAG is excluded from the County's share.

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

| Table IV-4<br>Development of UAL Amortization Rates for FYE 2020 |                 |
|--|-----------------|
| <b>General (County)</b>  |                 |
| 1. General County Projected Payroll for FYE June 30, 2019        | \$ 187,864,400  |
| 2. Total General Projected Payroll for FYE June 30, 2019         | \$ 203,104,953  |
| 3. County Share (1 divided by 2)                                 | 92.4962%        |
| 4. UAL Payment, not including POB Contribution                   | \$ 22,746,872   |
| 5. UAL Payment for POB Contribution                              | \$ (13,839,896) |
| 6. County Share of 4. (3 multiplied by 4)                        | \$ 21,039,996   |
| 7. County Share of 5. (100% of 5)                                | \$ (13,839,896) |
| 8. Total General County UAL Payment (6+7)                        | \$ 7,200,100    |
| 9. General County UAL Rate (8 divided by 1)                      | 3.83%           |
| <b>General (Non-County)</b>                                      |                 |
| 1. General Non-County Projected Payroll for FYE June 30, 2019    | \$ 15,240,553   |
| 2. Total General Projected Payroll for FYE June 30, 2019         | \$ 203,104,953  |
| 3. Non-County Share (1 divided by 2)                             | 7.5038%         |
| 4. UAL Payment, not including POB Contribution                   | \$ 22,746,872   |
| 5. UAL Payment for POB Contribution                              | \$ (13,839,896) |
| 6. Non-County Share of 4. (3 multiplied by 4)                    | \$ 1,706,876    |
| 7. Non-County Share of 5. (0% of 5)                              | \$ -            |
| 8. Total General Non-County UAL Payment (6+7)                    | \$ 1,706,876    |
| 9. General Non-County UAL Rate (8 divided by 1)                  | 11.20%          |
| <b>Safety (County)</b>   |                 |
| 1. County Safety Projected Payroll for FYE June 30, 2019         | \$ 59,694,151   |
| 2. Total Safety Projected Payroll for FYE June 30, 2019          | \$ 59,694,151   |
| 3. County Share (1 divided by 2)                                 | 100.0000%       |
| 4. UAL Payment, not including POB Contribution                   | \$ 7,595,856    |
| 5. UAL Payment for POB Contribution                              | \$ (4,536,802)  |
| 6. County Share of 4. (3 multiplied by 4)                        | \$ 7,595,856    |
| 7. County Share of 5. (100% of 5)                                | \$ (4,536,802)  |
| 8. Total County Safety UAL Payment (6+7)                         | \$ 3,059,054    |
| 9. County Safety UAL Rate (8 divided by 1)                       | 5.12%           |

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

The employer contribution rates for FYE 2020 are shown in Table IV-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 IV-6 below shows employee contribution rates for FYE 2020 at sample ages.

**Table IV-5**

**Detailed Employer Contribution Rate as of June 30, 2018 for FYE 2020**

| Member Type          | Tier | Normal Cost |       | UAL Amortization Cost |       |       |        | Total Cost |        |
|----------------------|------|-------------|-------|-----------------------|-------|-------|--------|------------|--------|
|                      |      | Basic       | COLA  | Basic                 | COLA  | Basic | COLA   | Basic      | COLA   |
|                      |      | Rate        | Rate  | Rate                  | Rate  | Rate  | Rate   | Rate       | Rate   |
| General (County)     | 1    | 10.67%      | 2.41% | 13.08%                | 3.13% | 0.70% | 3.83%  | 13.80%     | 3.11%  |
| General (County)     | 2&3  | 6.91%       | 1.40% | 8.31%                 | 3.18% | 0.65% | 3.83%  | 10.09%     | 2.05%  |
| General (County)     | 4    | 5.93%       | 1.27% | 7.20%                 | 3.15% | 0.68% | 3.83%  | 9.08%      | 1.94%  |
| General (Non-County) | 1    | 10.67%      | 2.41% | 13.08%                | 9.14% | 2.06% | 11.20% | 19.81%     | 4.47%  |
| General (Non-County) | 2&3  | 6.91%       | 1.40% | 8.31%                 | 9.31% | 1.89% | 11.20% | 16.22%     | 3.29%  |
| General (Non-County) | 4    | 5.93%       | 1.27% | 7.20%                 | 9.23% | 1.97% | 11.20% | 15.15%     | 3.24%  |
| Safety (County)      | 1    | N/A         | N/A   | N/A                   | N/A   | N/A   | N/A    | N/A        | N/A    |
| Safety (County)      | 2&3  | 10.11%      | 2.35% | 12.46%                | 4.15% | 0.97% | 5.12%  | 14.26%     | 3.32%  |
| Safety (County)      | 4    | 9.78%       | 2.35% | 12.12%                | 4.13% | 0.99% | 5.12%  | 13.90%     | 3.34%  |
|                      |      |             |       |                       |       |       |        |            | 17.24% |

**Table IV-6**

**Employee Contribution Rate at Sample Ages as of June 30, 2018 for FYE 2020**

| Member Type | Tier | Age 25 | Age 35 | Age 45 | Single Rate |
|-------------|------|--------|--------|--------|-------------|
| General     | 1    | 4.44%  | 5.55%  | 6.67%  | N/A         |
| General     | 2&3  | 6.99%  | 8.69%  | 10.45% | N/A         |
| General     | 4    | 5.17%  | 7.34%  | 10.01% | N/A         |
| Safety      | 1    | 6.63%  | 8.38%  | 9.90%  | N/A         |
| Safety      | 2&3  | 9.77%  | 12.35% | 14.03% | N/A         |
| Safety      | 4    | 10.71% | 14.50% | 18.49% | N/A         |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**SECTION IV – CONTRIBUTIONS**

Table IV-7 below shows projected annual employer contributions for FYE 2020, 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 IV-7<br>Estimated Annual Employer Contributions for FYE 2020 |      |             |                  |                     |
|--|------|-------------|------------------|---------------------|
| Member Type  | Tier | Normal Cost | UAL Amortization | Contributions Total |
| General (County)   | 1    | \$ 135,234  | \$ 39,599        | \$ 174,833          |
| General (County)   | 2&3  | 10,343,636  | 4,769,729        | 15,113,364          |
| General (County)   | 4    | 4,885,006   | 2,599,330        | 7,484,336           |
| General (Non-County)   | 1    | 10,971      | 9,394            | 20,365              |
| General (Non-County)   | 2&3  | 839,130     | 1,131,538        | 1,970,668           |
| General (Non-County)   | 4    | 396,297     | 616,647          | 1,012,945           |
| Safety (County)  | 1    | -           | -                | -                   |
| Safety (County)  | 2&3  | 5,680,714   | 2,334,407        | 8,015,122           |
| Safety (County)  | 4    | 1,924,165   | 812,602          | 2,736,767           |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION V – 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, 2018.

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 V-1. As requested by TCERA, we have also included the Schedule of Funding Progress (Table V-2) and the Schedule of Employer Contributions (Table V-3).

| Table V-1<br>SCHEDULE OF FUNDED LIABILITIES BY TYPE<br>(in thousands) |   |   |   |                    |  |      |
|---|---|---|---|--------------------|--|------|
| Valuation Date<br>June 30,  | (A)<br>Active/Inactive<br>Member<br>Contributions | (B)<br>Retirees<br>And<br>Beneficiaries | (C)<br>Remaining<br>Active<br>Members'<br>Liabilities | Reported<br>Assets | Portion of Actuarial<br>Liabilities Covered<br>by Reported Assets<br>(A) (B) (C) |      |
| 2009  | \$ 208,638  | \$ 453,205                              | \$ 334,904  | \$ 919,179         | 100%   | 100% |
| 2010  | 223,373   | 506,035                                 | 303,803   | 946,640            | 100%   | 100% |
| 2011  | 228,275   | 546,553                                 | 297,316   | 969,636            | 100%   | 100% |
| 2012  | 231,491   | 570,367                                 | 299,598   | 981,946            | 100%   | 100% |
| 2013  | 238,200   | 621,125                                 | 326,732   | 1,048,160          | 100%   | 100% |
| 2014  | 252,883   | 660,147                                 | 358,802   | 1,101,929          | 100%   | 100% |
| 2015  | 264,870   | 698,147                                 | 395,418   | 1,156,587          | 100%   | 100% |
| 2016  | 272,740   | 748,703                                 | 409,993   | 1,192,642          | 100%   | 100% |
| 2017  | 278,900   | 808,799                                 | 485,707   | 1,461,755          | 100%   | 100% |
| 2018  | 287,078   | 869,729                                 | 499,550   | 1,523,030          | 100%   | 100% |

*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  
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SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION

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

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

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

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION V – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION**

**Table V-3**  
**SCHEDULE OF EMPLOYER CONTRIBUTIONS**  
(dollars in thousands)

| <b>Year Ended<br/>June, 30</b> | <b>Actuarially<br/>Determined<br/>Contribution</b> | <b>Actual<br/>Contribution</b> | <b>Percentage<br/>Contributed</b> |
|--------------------------------|--|--------------------------------|-----------------------------------|
| 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%                              |

*June 30, 2016 and earlier numbers calculated by prior actuary*

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



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

The data for this valuation was provided by the Tulare County staff as of June 30, 2018. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

| SUMMARY OF TOTAL ACTIVE MEMBERSHIP  |                |                |        |
|-------------------------------------|----------------|----------------|--------|
|                                     | June 30, 2017  | June 30, 2018  | Change |
| <b>Total (General &amp; Safety)</b> |                |                |        |
| Count                               | 4,536          | 4,581          | 1.0%   |
| Average Age                         | 41.8           | 41.8           | -0.1%  |
| Average Service                     | 9.5            | 9.6            | 1.2%   |
| Annual Projected Payroll            | \$ 254,940,772 | \$ 262,713,817 | 3.0%   |
| Average Annual Pay                  | \$ 56,204      | \$ 57,349      | 2.0%   |

| SUMMARY OF INACTIVE MEMBERSHIP* |               |               |        |
|---------------------------------|---------------|---------------|--------|
|                                 | June 30, 2017 | June 30, 2018 | Change |
| <b>General</b>                  |               |               |        |
| Count                           | 1,686         | 1,741         | 3.3%   |
| Average Age                     | 44.6          | 44.2          | -0.8%  |
| Total Contribution Balance      | \$ 39,175,585 | \$ 40,050,143 | 2.2%   |
| Average Contribution Balance    | \$ 23,236     | \$ 23,004     | -1.0%  |
| <b>Safety</b>                   |               |               |        |
| Count                           | 268           | 291           | 8.6%   |
| Average Age                     | 39.9          | 39.7          | -0.6%  |
| Total Contribution Balance      | \$ 8,887,900  | \$ 9,707,077  | 9.2%   |
| Average Contribution Balance    | \$ 33,164     | \$ 33,358     | 0.6%   |
| <b>Total</b>                    |               |               |        |
| Count                           | 1,954         | 2,032         | 4.0%   |
| Average Age                     | 43.9          | 43.6          | -0.8%  |
| Total Contribution Balance      | \$ 48,063,485 | \$ 49,757,220 | 3.5%   |
| Average Contribution Balance    | \$ 24,597     | \$ 24,487     | -0.4%  |

\*Includes unclaimed accounts.



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| <b>SUMMARY OF RETIRED MEMBERSHIP</b> |    |                      |                      |               |
|--------------------------------------|----|----------------------|----------------------|---------------|
|                                      |    | <b>June 30, 2017</b> | <b>June 30, 2018</b> | <b>Change</b> |
| <b>General</b>                       |    |                      |                      |               |
| Count                                |    | 2,579                | 2,658                | 3.1%          |
| Average Age                          |    | 70.4                 | 70.7                 | 0.4%          |
| Total Annual Allowance               | \$ | 51,970,685           | \$ 55,107,749        | 6.0%          |
| Average Annual Allowance             | \$ | 20,151               | \$ 20,733            | 2.9%          |
| <b>Safety</b>                        |    |                      |                      |               |
| Count                                |    | 493                  | 534                  | 8.3%          |
| Average Age                          |    | 64.3                 | 64.5                 | 0.2%          |
| Total Annual Allowance               | \$ | 16,699,239           | \$ 18,624,022        | 11.5%         |
| Average Annual Allowance             | \$ | 33,873               | \$ 34,876            | 3.0%          |
| <b>Total</b>                         |    |                      |                      |               |
| Count                                |    | 3,072                | 3,192                | 3.9%          |
| Average Age                          |    | 69.4                 | 69.6                 | 0.3%          |
| Total Annual Allowance               | \$ | 68,669,924           | \$ 73,731,771        | 7.4%          |
| Average Annual Allowance             | \$ | 22,353               | \$ 23,099            | 3.3%          |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF ACTIVE GENERAL MEMBERSHIP |               |             |                |        |
|--------------------------------------|---------------|-------------|----------------|--------|
|                                      | June 30, 2017 |             | June 30, 2018  | Change |
| General Tier 1                       |               |             |                |        |
| Count                                |               | 19          | 16             | -15.8% |
| Average Age                          |               | 62.5        | 63.9           | 2.4%   |
| Average Service                      |               | 34.2        | 34.2           | 0.0%   |
| Annual Projected Payroll             | \$            | 1,242,253   | \$ 1,085,586   | -12.6% |
| Average Annual Pay                   | \$            | 65,382      | \$ 67,849      | 3.8%   |
| General Tier 2 & 3                   |               |             |                |        |
| Count                                |               | 2,288       | 2,146          | -6.2%  |
| Average Age                          |               | 46.8        | 47.3           | 1.2%   |
| Average Service                      |               | 13.2        | 14.2           | 7.1%   |
| Annual Projected Payroll             | \$            | 135,243,680 | \$ 130,674,232 | -3.4%  |
| Average Annual Pay                   | \$            | 59,110      | \$ 60,892      | 3.0%   |
| General Tier 4                       |               |             |                |        |
| Count                                |               | 1,353       | 1,546          | 14.3%  |
| Average Age                          |               | 34.8        | 35.5           | 1.9%   |
| Average Service                      |               | 2.0         | 2.4            | 21.7%  |
| Annual Projected Payroll             | \$            | 59,069,274  | \$ 71,259,778  | 20.6%  |
| Average Annual Pay                   | \$            | 43,658      | \$ 46,093      | 5.6%   |
| General Total                        |               |             |                |        |
| Count                                |               | 3,660       | 3,708          | 1.3%   |
| Average Age                          |               | 42.4        | 42.5           | 0.1%   |
| Average Service                      |               | 9.2         | 9.4            | 1.8%   |
| Annual Projected Payroll             | \$            | 195,555,207 | \$ 203,019,596 | 3.8%   |
| Average Annual Pay                   | \$            | 53,430      | \$ 54,752      | 2.5%   |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| <b>SUMMARY OF ACTIVE SAFETY MEMBERSHIP</b> |                      |                      |               |  |
|--|----------------------|----------------------|---------------|--|
|  | <b>June 30, 2017</b> | <b>June 30, 2018</b> | <b>Change</b> |  |
| <b>Safety Tier 1</b>                       |                      |                      |               |  |
| Count                                      | 2                    | -                    | -100.0%       |  |
| Average Age                                | 63.8                 | -                    | -100.0%       |  |
| Average Service                            | 38.5                 | -                    | -100.0%       |  |
| Annual Projected Payroll                   | \$ 215,881           | \$ -                 | -100.0%       |  |
| Average Annual Pay                         | \$ 107,941           | \$ -                 | -100.0%       |  |
| <b>Safety Tier 2 &amp; 3</b>               |                      |                      |               |  |
| Count                                      | 658                  | 602                  | -8.5%         |  |
| Average Age                                | 42.1                 | 42.6                 | 1.4%          |  |
| Average Service                            | 13.3                 | 14.2                 | 6.2%          |  |
| Annual Projected Payroll                   | \$ 47,346,276        | \$ 44,280,283        | -6.5%         |  |
| Average Annual Pay                         | \$ 71,955            | \$ 73,555            | 2.2%          |  |
| <b>Safety Tier 4</b>                       |                      |                      |               |  |
| Count                                      | 216                  | 271                  | 25.5%         |  |
| Average Age                                | 30.6                 | 30.9                 | 1.1%          |  |
| Average Service                            | 2.2                  | 2.4                  | 10.6%         |  |
| Annual Projected Payroll                   | \$ 11,823,408        | \$ 15,413,938        | 30.4%         |  |
| Average Annual Pay                         | \$ 54,738            | \$ 56,878            | 3.9%          |  |
| <b>Safety Total</b>                        |                      |                      |               |  |
| Count                                      | 876                  | 873                  | -0.3%         |  |
| Average Age                                | 39.3                 | 39.0                 | -0.7%         |  |
| Average Service                            | 10.7                 | 10.5                 | -1.1%         |  |
| Annual Projected Payroll                   | \$ 59,385,565        | \$ 59,694,221        | 0.5%          |  |
| Average Annual Pay                         | \$ 67,792            | \$ 68,378            | 0.9%          |  |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF RETIRED GENERAL MEMBERSHIP |               |            |               |            |        |
|---------------------------------------|---------------|------------|---------------|------------|--------|
|                                       | June 30, 2017 |            | June 30, 2018 |            | Change |
| Service Retirement                    |               |            |               |            |        |
| Count                                 | 2,039         |            | 2,111         |            | 3.5%   |
| Average Age                           | 70.4          |            | 70.7          |            | 0.4%   |
| Total Annual Allowance                | \$            | 43,535,018 | \$            | 46,236,407 | 6.2%   |
| Average Annual Allowance              | \$            | 21,351     | \$            | 21,903     | 2.6%   |
| Disability                            |               |            |               |            |        |
| Count                                 | 205           |            | 200           |            | -2.4%  |
| Average Age                           | 63.1          |            | 63.8          |            | 1.0%   |
| Total Annual Allowance                | \$            | 4,066,875  | \$            | 4,095,378  | 0.7%   |
| Average Annual Allowance              | \$            | 19,838     | \$            | 20,477     | 3.2%   |
| Beneficiaries                         |               |            |               |            |        |
| Count                                 | 335           |            | 347           |            | 3.6%   |
| Average Age                           | 74.7          |            | 74.6          |            | -0.2%  |
| Total Annual Allowance                | \$            | 4,368,792  | \$            | 4,775,964  | 9.3%   |
| Average Annual Allowance              | \$            | 13,041     | \$            | 13,764     | 5.5%   |
| Total                                 |               |            |               |            |        |
| Count                                 | 2,579         |            | 2,658         |            | 3.1%   |
| Average Age                           | 70.4          |            | 70.7          |            | 0.4%   |
| Total Annual Allowance                | \$            | 51,970,685 | \$            | 55,107,749 | 6.0%   |
| Average Annual Allowance              | \$            | 20,151     | \$            | 20,733     | 2.9%   |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| SUMMARY OF RETIRED SAFETY MEMBERSHIP |               |            |               |            |        |
|--------------------------------------|---------------|------------|---------------|------------|--------|
|                                      | June 30, 2017 |            | June 30, 2018 |            | Change |
| Service Retirement                   |               |            |               |            |        |
| Count                                | 284           |            | 311           |            | 9.5%   |
| Average Age                          | 66.1          |            | 66.2          |            | 0.1%   |
| Total Annual Allowance               | \$            | 11,359,916 | \$            | 12,707,792 | 11.9%  |
| Average Annual Allowance             | \$            | 40,000     | \$            | 40,861     | 2.2%   |
| Disability                           |               |            |               |            |        |
| Count                                | 120           |            | 130           |            | 8.3%   |
| Average Age                          | 58.5          |            | 58.5          |            | 0.0%   |
| Total Annual Allowance               | \$            | 3,538,112  | \$            | 3,968,630  | 12.2%  |
| Average Annual Allowance             | \$            | 29,484     | \$            | 30,528     | 3.5%   |
| Beneficiaries                        |               |            |               |            |        |
| Count                                | 89            |            | 93            |            | 4.5%   |
| Average Age                          | 66.5          |            | 67.0          |            | 0.7%   |
| Total Annual Allowance               | \$            | 1,801,211  | \$            | 1,947,600  | 8.1%   |
| Average Annual Allowance             | \$            | 20,238     | \$            | 20,942     | 3.5%   |
| Total                                |               |            |               |            |        |
| Count                                | 493           |            | 534           |            | 8.3%   |
| Average Age                          | 64.3          |            | 64.5          |            | 0.2%   |
| Total Annual Allowance               | \$            | 16,699,239 | \$            | 18,624,022 | 11.5%  |
| Average Annual Allowance             | \$            | 33,873     | \$            | 34,876     | 3.0%   |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY<br>OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2018<br>TIER 1 |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |        |        |
|--|---------|---------------|--------|---------------|--------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|---------|---------------|--------|--------|
| YEARS OF CREDITED SERVICE  |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |        |        |
| Attained Age   | Under 1 |               | 1 to 4 |               | 5 to 9 |               | 10 to 14 |               | 15 to 19 |               | 20 to 24 |               | 25 to 29 |               | 30 to 34 |               | 35 to 39 |               | 40 & up |               | Total  |        |
|  | 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      |        |
| 25 to 29   | 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      |        |
| 35 to 39   | 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      |        |
| 45 to 49   | 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      |        |
| 55 to 59   | 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             | 1        | 40,454        | 0        | 0             | 1        | 86,081        | 2       | 66,218        | 3      | 72,839 |
| 65 to 69   | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 1        | 72,182        | 0        | 0             | 2        | 110,014       | 2       | 61,665        | 5      | 83,108 |
| 70 & up  | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 1       | 39,067        | 1      | 39,067 |
| Total  | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 2             | 56,318   | 0             | 0        | 4             | 88,130   | 10            | 62,043  | 15            | 67,849 |        |

| AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY<br>OF ACTIVE GENERAL MEMBERS AS OF JUNE 30, 2018<br>TIER 2 & 3 |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |       |           |
|--|---------|---------------|--------|---------------|--------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|---------|---------------|-------|-----------|
| YEARS OF CREDITED SERVICE  |         |               |        |               |        |               |          |               |          |               |          |               |          |               |          |               |          |               |         |               |       |           |
| Attained Age   | Under 1 |               | 1 to 4 |               | 5 to 9 |               | 10 to 14 |               | 15 to 19 |               | 20 to 24 |               | 25 to 29 |               | 30 to 34 |               | 35 to 39 |               | 40 & up |               | Total |           |
|  | 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      | \$            | 2      | \$ 38,043     | 0        | \$            | 0        | \$            | 0        | \$            | 0        | \$            | 0        | \$            | 0        | \$            | 0       | \$            | 2     | \$ 38,043 |
| 25 to 29   | 0       | 0             | 0      | 0             | 31     | 45,925        | 5        | 46,243        | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 35    | 45,969    |
| 30 to 34   | 0       | 0             | 11     | 56,357        | 132    | 56,959        | 59       | 50,373        | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 202   | 55,002    |
| 35 to 39   | 0       | 0             | 16     | 60,493        | 134    | 60,371        | 177      | 62,392        | 40       | 51,793        | 1        | 48,939        | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 368   | 60,385    |
| 40 to 44   | 1       | 32,784        | 5      | 80,299        | 99     | 60,453        | 109      | 59,625        | 108      | 61,439        | 30       | 64,735        | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 352   | 61,067    |
| 45 to 49   | 0       | 0             | 3      | 112,389       | 48     | 54,408        | 107      | 63,935        | 103      | 56,055        | 56       | 51,815        | 5        | 57,807        | 0        | 0             | 0        | 0             | 0       | 0             | 322   | 58,243    |
| 50 to 54   | 0       | 0             | 3      | 43,158        | 46     | 53,192        | 83       | 59,675        | 79       | 60,100        | 50       | 60,345        | 27       | 60,306        | 4        | 54,505        | 0        | 0             | 0       | 0             | 292   | 58,701    |
| 55 to 59   | 0       | 0             | 2      | 76,315        | 41     | 63,037        | 84       | 65,061        | 79       | 61,800        | 52       | 61,063        | 41       | 72,580        | 16       | 85,413        | 3        | 55,448        | 0       | 0             | 318   | 65,310    |
| 60 to 64   | 0       | 0             | 3      | 96,355        | 21     | 60,694        | 39       | 67,400        | 47       | 62,154        | 34       | 63,991        | 22       | 63,432        | 18       | 70,926        | 8        | 70,798        | 0       | 0             | 192   | 65,248    |
| 65 to 69   | 0       | 0             | 1      | 79,736        | 11     | 65,932        | 12       | 73,118        | 13       | 100,677       | 5        | 87,415        | 3        | 80,683        | 2        | 95,252        | 0        | 0             | 0       | 0             | 47    | 82,145    |
| 70 & up  | 0       | 0             | 0      | 0             | 3      | 140,128       | 3        | 72,685        | 5        | 38,275        | 3        | 64,016        | 0        | 0             | 1        | 40,670        | 0        | 0             | 0       | 0             | 15    | 70,836    |
| Total  | 1       | 32,784        | 44     | 67,668        | 568    | 58,373        | 678      | 61,547        | 474      | 60,195        | 231      | 60,130        | 98       | 66,639        | 41       | 75,426        | 11       | 66,611        | 0       | 0             | 2,145 | 60,892    |

## APPENDIX A – MEMBERSHIP INFORMATION





**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

**AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY  
OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2018**

**TIER 1**

**YEARS OF CREDITED SERVICE**

| Attained Age | Under 1 |               | 1 to 4 |               | 5 to 9 |               | 10 to 14 |               | 15 to 19 |               | 20 to 24 |               | 25 to 29 |               | 30 to 34 |               | 35 to 39 |               | 40 & up |               | Total |               |
|--------------|---------|---------------|--------|---------------|--------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|---------|---------------|-------|---------------|
|              | 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     | \$            |
| 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, 2018**

**TIER 2 & 3**

**YEARS OF CREDITED SERVICE**

| Attained Age | Under 1 |               | 1 to 4 |               | 5 to 9 |               | 10 to 14 |               | 15 to 19 |               | 20 to 24 |               | 25 to 29 |               | 30 to 34 |               | 35 to 39 |               | 40 & up |               | Total  |               |
|--------------|---------|---------------|--------|---------------|--------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|----------|---------------|---------|---------------|--------|---------------|
|              | 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      | \$            |
| 25 to 29     | 0       | 0             | 1      | 67,408        | 20     | 61,891        | 2        | 62,408        | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 23            | 62,176 |               |
| 30 to 34     | 1       | 68,966        | 2      | 61,343        | 55     | 62,476        | 39       | 71,762        | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 97            | 66,253 |               |
| 35 to 39     | 0       | 0             | 5      | 68,410        | 37     | 64,405        | 86       | 71,883        | 9        | 69,308        | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 157           | 69,567 |               |
| 40 to 44     | 0       | 0             | 1      | 77,859        | 20     | 68,786        | 54       | 74,076        | 38       | 75,907        | 6        | 96,470        | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 119           | 74,933 |               |
| 45 to 49     | 0       | 0             | 0      | 0             | 13     | 65,765        | 32       | 73,276        | 33       | 81,817        | 20       | 80,342        | 2        | 95,261        | 0        | 0             | 0        | 0             | 0       | 100           | 76,971 |               |
| 50 to 54     | 0       | 0             | 1      | 73,063        | 7      | 69,614        | 9        | 74,109        | 17       | 69,228        | 26       | 85,829        | 10       | 83,442        | 11       | 118,737       | 0        | 0             | 0       | 81            | 83,658 |               |
| 55 to 59     | 0       | 0             | 0      | 0             | 2      | 83,973        | 9        | 82,513        | 5        | 76,186        | 6        | 69,608        | 3        | 79,712        | 5        | 83,801        | 0        | 0             | 0       | 30            | 78,909 |               |
| 60 to 64     | 0       | 0             | 0      | 0             | 1      | 83,381        | 2        | 85,578        | 3        | 60,081        | 1        | 85,954        | 2        | 84,719        | 1        | 81,866        | 0        | 0             | 0       | 10            | 77,204 |               |
| 65 to 69     | 0       | 0             | 0      | 0             | 2      | 67,884        | 2        | 82,467        | 0        | 0             | 0        | 0             | 0        | 0             | 1        | 62,540        | 0        | 0             | 0       | 5             | 72,648 |               |
| 70 & up      | 0       | 0             | 0      | 0             | 0      | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0        | 0             | 0       | 0             | 0      |               |
| Total        | 1       | 68,966        | 10     | 68,306        | 157    | 64,726        | 235      | 73,175        | 105      | 75,678        | 59       | 83,404        | 17       | 84,324        | 18       | 103,862       | 0        | 0             | 0       | 602           | 73,555 |               |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| AGE AND SERVICE DISTRIBUTION WITH ANNUAL AVERAGE SALARY<br>OF ACTIVE SAFETY MEMBERS AS OF JUNE 30, 2018<br>TIER 4 |         |                  |        |                  |        |                  |          |                  |          |                  |          |                  |          |                  |          |                  |          |                  |         |                  |       |                  |
|---|---------|------------------|--------|------------------|--------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|----------|------------------|---------|------------------|-------|------------------|
| YEARS OF CREDITED SERVICE   |         |                  |        |                  |        |                  |          |                  |          |                  |          |                  |          |                  |          |                  |          |                  |         |                  |       |                  |
| Attained<br>Age   | Under 1 |                  | 1 to 4 |                  | 5 to 9 |                  | 10 to 14 |                  | 15 to 19 |                  | 20 to 24 |                  | 25 to 29 |                  | 30 to 34 |                  | 35 to 39 |                  | 40 & up |                  | Total |                  |
|   | No.     | Average<br>Comp. | No.    | Average<br>Comp. | No.    | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.      | Average<br>Comp. | No.     | Average<br>Comp. | No.   | Average<br>Comp. |
| Under 25  | 17      | \$ 48,065        | 14     | \$ 55,541        | 0      | \$ 0             | 0        | \$ 0             | 0        | \$ 0             | 0        | \$ 0             | 0        | \$ 0             | 0        | \$ 0             | 0        | \$ 0             | 0       | \$ 0             | 31    | \$ 51,441        |
| 25 to 29  | 38      | 50,340           | 76     | 56,036           | 8      | 65,921           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 122   | 54,910           |
| 30 to 34  | 13      | 49,725           | 51     | 59,548           | 4      | 61,398           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 68    | 57,779           |
| 35 to 39  | 7       | 55,460           | 15     | 57,438           | 4      | 65,801           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 26    | 58,192           |
| 40 to 44  | 2       | 55,597           | 7      | 63,402           | 0      | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 9     | 61,667           |
| 45 to 49  | 0       | 0                | 3      | 60,304           | 3      | 66,912           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 6     | 63,608           |
| 50 to 54  | 1       | 56,478           | 3      | 104,061          | 2      | 70,610           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 6     | 84,980           |
| 55 to 59  | 0       | 0                | 2      | 75,071           | 0      | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 2     | 75,071           |
| 60 to 64  | 0       | 0                | 1      | 81,569           | 0      | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 1     | 81,569           |
| 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   | 78      | 50,414           | 172    | 58,741           | 21     | 65,625           | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0        | 0                | 0       | 0                | 271   | 56,878           |

| Average Increases in Pay<br>(for upcoming year, based on valuation data) |  |       |
|--|--|-------|
| Longevity and Promotion Component  |  | 2.53% |
| Wage Inflation Component   |  | 3.00% |
| Total  |  | 5.53% |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| <b>AGE DISTRIBUTION OF TOTAL INACTIVE PARTICIPANTS<br/>PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2018</b> |                        |                     |  |   |                      |  |  |                     |                            |
|--|------------------------|---------------------|--|---|----------------------|--|--|---------------------|----------------------------|
| Age  | Disability Retirements |                     |  | Normal, Early Deferred Vested Retirements |                      |  | Surviving Spouses and Beneficiaries Receiving Benefits |                     |                            |
|  | Number                 | Annual Benefit      |  | Number                                    | Annual Benefit       |  | Number   | Annual Benefit      | Total Annual Benefit       |
| Under 55   | 85                     | \$ 2,346,790        |  | 70  | \$ 1,105,604         |  | 34   | \$ 404,254          | 189 \$ 3,856,648           |
| 55-59  | 47                     | 1,114,313           |  | 198                                       | 4,594,608            |  | 22   | 408,663             | 267 6,117,584              |
| 60-64  | 61                     | 1,380,531           |  | 399                                       | 9,897,783            |  | 46   | 641,963             | 506 11,920,277             |
| 65-69  | 56                     | 1,346,290           |  | 583                                       | 15,048,836           |  | 53   | 861,218             | 692 17,256,344             |
| 70-74  | 45                     | 1,150,976           |  | 579                                       | 15,586,515           |  | 77   | 1,388,698           | 701 18,126,189             |
| 75-79  | 26                     | 533,664             |  | 294                                       | 7,012,385            |  | 71   | 1,027,198           | 391 8,573,247              |
| 80 & Over  | 10                     | 191,444             |  | 299                                       | 5,698,468            |  | 137  | 1,991,570           | 446 7,881,482              |
| <b>Total</b>   | <b>330</b>             | <b>\$ 8,064,008</b> |  | <b>2,422</b>                              | <b>\$ 58,944,199</b> |  | <b>440</b>   | <b>\$ 6,723,564</b> | <b>3,192 \$ 73,731,771</b> |

| <b>AGE DISTRIBUTION OF INACTIVE GENERAL PARTICIPANTS<br/>PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2018</b> |                        |                     |  |   |                      |  |  |                     |                            |
|--|------------------------|---------------------|--|---|----------------------|--|--|---------------------|----------------------------|
| Age  | Disability Retirements |                     |  | Normal, Early Deferred Vested Retirements |                      |  | Surviving Spouses and Beneficiaries Receiving Benefits |                     |                            |
|  | Number                 | Annual Benefit      |  | Number                                    | Annual Benefit       |  | Number   | Annual Benefit      | Total Annual Benefit       |
| Under 55   | 33                     | \$ 678,389          |  | 45  | \$ 512,946           |  | 20   | \$ 185,848          | 98 \$ 1,377,183            |
| 55-59  | 30                     | 631,653             |  | 146                                       | 2,492,794            |  | 12   | 163,290             | 188 3,287,737              |
| 60-64  | 44                     | 892,107             |  | 335                                       | 7,165,505            |  | 33   | 357,165             | 412 8,414,777              |
| 65-69  | 38                     | 740,097             |  | 517                                       | 12,083,773           |  | 39   | 479,405             | 594 13,303,275             |
| 70-74  | 33                     | 762,784             |  | 517                                       | 12,759,289           |  | 68   | 1,175,206           | 618 14,697,279             |
| 75-79  | 18                     | 319,990             |  | 266                                       | 6,087,671            |  | 58   | 780,830             | 342 7,188,491              |
| 80 & Over  | 4                      | 70,358              |  | 285                                       | 5,134,429            |  | 117  | 1,634,220           | 406 6,839,007              |
| <b>Total</b>   | <b>200</b>             | <b>\$ 4,095,378</b> |  | <b>2,111</b>                              | <b>\$ 46,236,407</b> |  | <b>347</b>   | <b>\$ 4,775,964</b> | <b>2,658 \$ 55,107,749</b> |

TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018

APPENDIX A – MEMBERSHIP INFORMATION

| AGE DISTRIBUTION OF INACTIVE SAFETY PARTICIPANTS<br>PENSIONERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2018 |                           |                |  |   |                |  |  |                |  |                   |
|---|---------------------------|----------------|--|---|----------------|--|--|----------------|--|-------------------|
| Age   | Disability<br>Retirements |                |  | Normal, Early<br>Deferred Vested<br>Retirements |                |  | Surviving Spouses<br>and Beneficiaries<br>Receiving Benefits |                |  | Total             |
|   | Number                    | Annual Benefit |  | Number  | Annual Benefit |  | Number   | Annual Benefit |  |                   |
| Under 55  | 52                        | \$ 1,668,401   |  | 25  | \$ 592,658     |  | 14   | \$ 218,406     |  | 91 \$ 2,479,465   |
| 55-59   | 17                        | 482,660        |  | 52  | 2,101,814      |  | 10   | 245,373        |  | 79 2,829,847      |
| 60-64   | 17                        | 488,424        |  | 64  | 2,732,278      |  | 13   | 284,798        |  | 94 3,505,500      |
| 65-69   | 18                        | 606,193        |  | 66  | 2,965,063      |  | 14   | 381,813        |  | 98 3,953,069      |
| 70-74   | 12                        | 388,192        |  | 62  | 2,827,226      |  | 9  | 213,492        |  | 83 3,428,910      |
| 75-79   | 8                         | 213,674        |  | 28  | 924,714        |  | 13   | 246,368        |  | 49 1,384,756      |
| 80 & Over   | 6                         | 121,086        |  | 14  | 564,039        |  | 20   | 357,350        |  | 40 1,042,475      |
| <b>Total</b>  | 130                       | \$ 3,968,630   |  | 311   | \$ 12,707,792  |  | 93   | \$ 1,947,600   |  | 534 \$ 18,624,022 |

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| Retirees and Beneficiaries Added to and Removed From Payroll |                         |                         |   |                           |  |                   |                     |                                      |                                |
|--|-------------------------|-------------------------|---|---------------------------|--|-------------------|---------------------|--------------------------------------|--------------------------------|
| Plan Year<br>Ended June<br>30                                | At Beginning<br>of Year | Added<br>During<br>Year | Annual Allowances<br>Added to the Rolls | Removed<br>During<br>Year | Annual Allowances<br>Removed from the<br>Rolls | At End<br>of Year | Annual<br>Allowance | % Increase<br>in Annual<br>Allowance | Average<br>Annual<br>Allowance |
| 2007   | 1,840                   | 130                     | \$ 2,331,351                            | 57                        | \$ 676,524                                     | 1,913             | \$ 31,014,000       | 8.00%                                | \$ 16,212                      |
| 2008   | 1,913                   | 164                     | \$ 3,444,133                            | 70                        | \$ 827,830                                     | 2,007             | \$ 34,244,000       | 10.40%                               | \$ 17,062                      |
| 2009   | 2,007                   | 157                     | \$ 3,418,929                            | 65                        | \$ 840,949                                     | 2,099             | \$ 37,485,607       | 9.47%                                | \$ 17,859                      |
| 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                            | 79                        | \$ 896,529                                     | 3,072             | \$ 68,669,924       | 6.81%                                | \$ 22,353                      |

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, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| Reconciliation of System Membership Since Prior Valuation |        |                    |                           |                        |                    |         |               |  |                  |        |
|---|--------|--------------------|---------------------------|------------------------|--------------------|---------|---------------|--|------------------|--------|
| Total Members   |        |                    |                           |                        |                    |         |               |  |                  |        |
|   | Active | Deferred<br>Vested | Deferred -<br>Transferred | Ordinary<br>Disability | Duty<br>Disability | Retired | Beneficiaries | Non-Vested<br>Terminations<br>Due Refund | Deferred<br>QDRO | Totals |
| June 30, 2017   | 4,536  | 393                | 623                       | 126                    | 199                | 2,323   | 389           | 922                                      | 35               | 9,562  |
| New Entrants  | 466    |                    |                           |                        |                    |         |               |  |                  | 466    |
| Rehires   | 16     | (5)                | (2)                       |                        |                    | (1)     |               | (8)                                      |                  | -      |
| Duty Disabilities   | (9)    |                    |                           |                        | 9                  |         |               |  |                  | -      |
| Ordinary Disabilities                                     | (5)    |                    |                           | 5                      |                    |         |               |  |                  | -      |
| Retirements   | (108)  | (17)               | (32)                      |                        |                    | 158     |               | (1)                                      |                  | -      |
| Vested Terminations                                       | (62)   | 63                 | (1)                       |                        |                    |         |               |  |                  | -      |
| Non-Vested Terminations and<br>Death without beneficiary  | (146)  | (5)                | (1)                       | (3)                    | (1)                | (31)    |               | 140                                      |                  | (47)   |
| Death with beneficiary                                    |        |                    |                           |                        |                    |         |               |  |                  | -      |
| Transfers   | (20)   | (21)               | 68                        | (4)                    | (2)                | (23)    | 29            | (27)                                     |                  | -      |
| Beneficiary Deaths  |        |                    |                           |                        |                    |         |               |  |                  | -      |
| Domestic Relations Orders                                 |        |                    |                           |                        |                    |         | (22)          |  | 4                | (22)   |
| Deferred Domestic Relations Orders                        |        |                    |                           |                        |                    |         |               |  |                  | 4      |
| Withdrawals Paid  | (87)   | (13)               | (6)                       |                        |                    |         |               | (57)                                     | 7                | (167)  |
| Data Corrections  |        | (1)                |                           |                        | 1                  | (4)     | (1)           | 1  | (4)              | 2      |
| June 30, 2018   | 4,581  | 394                | 649                       | 124                    | 206                | 2,422   | 395           | 970                                      | 45               | 9,805  |



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX A – MEMBERSHIP INFORMATION**

| Reconciliation of System Membership Since Prior Valuation |                 |                 |                               |                     |                 |                       |                         |            |               |              |
|---|-----------------|-----------------|-------------------------------|---------------------|-----------------|-----------------------|-------------------------|------------|---------------|--------------|
|   | General Members |                 |                               |                     |                 | Non-Vested            |                         |            |               |              |
|   | Active          | Deferred Vested | Deferred Vested - Transferred | Ordinary Disability | Duty Disability | Retired Beneficiaries | Terminations Due Refund | QDRO       | Deferred QDRO | Totals       |
| <b>June 30, 2017</b>                                      | <b>3,660</b>    | <b>345</b>      | <b>522</b>                    | <b>111</b>          | <b>94</b>       | <b>2,039</b>          | <b>314</b>              | <b>811</b> | <b>21</b>     | <b>8</b>     |
| New Entrants  | 384             |                 |                               |                     |                 |                       |                         |            |               | 384          |
| Rehires   | 15              | (3)             | (2)                           |                     |                 | (1)                   |                         | (7)        |               | 2            |
| Duty Disabilities   | (1)             |                 |                               |                     | 1               |                       |                         |            |               | -            |
| Ordinary Disabilities                                     | (3)             |                 |                               | 3                   |                 |                       |                         |            |               | -            |
| Retirements   | (82)            | (17)            | (28)                          |                     |                 | 127                   |                         |            |               | -            |
| Vested Terminations                                       | (46)            | 46              |                               |                     |                 |                       |                         |            |               | -            |
| Non-Vested Terminations and Death without beneficiary     | (125)           | (4)             | (1)                           | (3)                 | (1)             | (31)                  | 118                     |            |               | (47)         |
| Death with beneficiary                                    |                 |                 |                               |                     |                 | (20)                  | 26                      |            |               | -            |
| Transfers   | (18)            | (16)            | 53                            | (4)                 | (2)             |                       | (23)                    |            |               | (4)          |
| Beneficiary Deaths  |                 |                 |                               |                     |                 |                       | (20)                    |            | 2             | (20)         |
| Domestic Relations Orders                                 |                 |                 |                               |                     |                 |                       |                         |            |               | 2            |
| Deferred Domestic Relations Orders                        |                 |                 |                               |                     |                 |                       |                         |            | 4             | 4            |
| Withdrawals Paid  | (76)            | (10)            | (3)                           |                     |                 |                       | (50)                    |            | (2)           | (141)        |
| Data Corrections  |                 | (1)             |                               |                     | 1               | (3)                   | (1)                     | 1          | 5             | 2            |
| <b>June 30, 2018</b>                                      | <b>3,708</b>    | <b>340</b>      | <b>541</b>                    | <b>107</b>          | <b>93</b>       | <b>2,111</b>          | <b>319</b>              | <b>850</b> | <b>28</b>     | <b>10</b>    |
|   |                 |                 |                               |                     |                 |                       |                         |            |               | <b>8,107</b> |



TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018

APPENDIX A – MEMBERSHIP INFORMATION

| Reconciliation of System Membership Since Prior Valuation |          |                 |                               |                     |                 |         |               |            |          |      |        |
|---|----------|-----------------|-------------------------------|---------------------|-----------------|---------|---------------|------------|----------|------|--------|
| Safety Members  |          |                 |                               |                     |                 |         |               |            |          |      |        |
|   | Deferred |                 |                               |                     | Non-Vested      |         |               |            | Deferred |      |        |
|   | Active   | Deferred Vested | Deferred Vested - Transferred | Ordinary Disability | Duty Disability | Retired | Beneficiaries | Due Refund | QDRO     | QDRO | Totals |
| June 30, 2017   | 876      | 48              | 101                           | 15                  | 105             | 284     | 75            | 111        | 14       | 8    | 1,637  |
| New Entrants  | 82       |                 |                               |                     |                 |         |               |            |          |      | 82     |
| Rehires   | 1        | (2)             |                               |                     |                 |         |               | (1)        |          |      | (2)    |
| Duty Disabilities   | (8)      |                 |                               |                     | 8               |         |               |            |          |      |        |
| Ordinary Disabilities                                     | (2)      |                 |                               | 2                   |                 |         |               |            |          |      |        |
| Retirements   | (26)     |                 | (4)                           |                     |                 | 31      |               | (1)        |          |      |        |
| Vested Terminations                                       | (16)     | 17              | (1)                           |                     |                 |         |               |            |          |      |        |
| Non-Vested Terminations and                               | (21)     | (1)             |                               |                     |                 |         |               | 22         |          |      |        |
| Death without beneficiary                                 |          |                 |                               |                     |                 | (3)     | 3             |            |          |      |        |
| Transfers   | (2)      | (5)             | 15                            |                     |                 |         |               | (4)        |          |      | 4      |
| Beneficiary Deaths  |          |                 |                               |                     |                 |         | (2)           |            |          |      | (2)    |
| Domestic Relations Orders                                 |          |                 |                               |                     |                 |         |               |            | 2        |      | 2      |
| Deferred Domestic Relations Orders                        |          |                 |                               |                     |                 |         |               |            |          | 3    | 3      |
| Withdrawals Paid  | (11)     | (3)             | (3)                           |                     |                 | (1)     |               | (7)        |          | (2)  | (26)   |
| Data Corrections  |          |                 |                               |                     |                 |         |               |            | 1        |      |        |
| June 30, 2018   | 873      | 54              | 108                           | 17                  | 113             | 311     | 76            | 120        | 17       | 9    | 1,698  |

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

The methods and assumptions used in the actuarial valuation as of June 30, 2018 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 prior valuation as a receivable in both the Market and Actuarial Values of Assets as of June 30, 2017. Accordingly, it was not recorded as a contribution during the FY 2017-2018

**3. Changes in Actuarial Methods**

None.

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**B. Actuarial Assumptions**

The TCERA Board has the authority to select economic and demographic assumptions for the Plan. The assumptions used in this report reflect the results of an Experience Study performed by Cheiron covering the period July 1, 2014 through June 30, 2017.

**1. Rate of Return**

Assets are assumed to earn 7.25% net of investment and administrative expenses.

**2. Inflation**

The Consumer Price Index (CPI) is assumed to increase at the rate of 3.00% per year.

**3. Post Retirement COLA**

Benefits are assumed to increase after retirement at the rate of 2.7% 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 \$121,388 for calendar year 2018 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 7.25%.

**6. Family Composition**

Percentage married for all active members who retire, become disabled, or die during active service is shown below. Male members are assumed to be three years older than their wives, and female members are assumed to be two years younger than their husbands.

| Division | Gender | Percentage |
|----------|--------|------------|
| General  | Males  | 85%        |
| General  | Female | 65%        |
| Safety   | Male   | 90%        |
| Safety   | Female | 70%        |

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**7. Increases in Pay**

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

Additional longevity and promotion component:

| Longevity and Promotion<br>Increases |         |        |
|--------------------------------------|---------|--------|
| Service                              | General | Safety |
| 0                                    | 8.00%   | 8.00%  |
| 1                                    | 6.50%   | 6.00%  |
| 2                                    | 5.50%   | 5.00%  |
| 3                                    | 4.00%   | 4.50%  |
| 4                                    | 3.00%   | 4.25%  |
| 5                                    | 2.00%   | 4.00%  |
| 6                                    | 1.75%   | 3.00%  |
| 7                                    | 1.50%   | 2.50%  |
| 8                                    | 1.00%   | 2.00%  |
| 9                                    | 1.00%   | 1.75%  |
| 10                                   | 1.00%   | 1.50%  |
| 11                                   | 1.00%   | 1.00%  |
| 12                                   | 1.00%   | 0.50%  |
| 13                                   | 1.00%   | 0.50%  |
| 14                                   | 1.00%   | 0.50%  |
| 15                                   | 1.00%   | 0.50%  |
| 16                                   | 1.00%   | 0.50%  |
| 17                                   | 1.00%   | 0.50%  |
| 18                                   | 1.00%   | 0.50%  |
| 19                                   | 1.00%   | 0.50%  |
| 20                                   | 1.00%   | 0.50%  |
| 21                                   | 1.00%   | 0.50%  |
| 22                                   | 1.00%   | 0.50%  |
| 23                                   | 1.00%   | 0.50%  |
| 24                                   | 1.00%   | 0.50%  |
| 25+                                  | 0.50%   | 0.50%  |

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**8. Termination**

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

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

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

General Members: Age 60

Safety Members: Age 53

**9. 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%           | 50%             | 60%    |
| 10-20   | 85%           | 65%             | 60%    |
| 20+     | 85%           | 65%             | 100%   |

**10. Reciprocal Transfers**

65% of 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 5.00%.

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**11. 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%            | 0.010% | 0.050%   | 0.560% |
| 36          | 0.020%              | 0.020% | 0.080%            | 0.010% | 0.050%   | 0.580% |
| 37          | 0.020%              | 0.020% | 0.080%            | 0.010% | 0.050%   | 0.600% |
| 38          | 0.030%              | 0.030% | 0.120%            | 0.010% | 0.050%   | 0.620% |
| 39          | 0.030%              | 0.030% | 0.130%            | 0.010% | 0.050%   | 0.640% |
| 40          | 0.030%              | 0.030% | 0.140%            | 0.010% | 0.075%   | 0.660% |
| 41          | 0.040%              | 0.045% | 0.160%            | 0.010% | 0.075%   | 0.670% |
| 42          | 0.040%              | 0.045% | 0.170%            | 0.010% | 0.080%   | 0.680% |
| 43          | 0.040%              | 0.045% | 0.180%            | 0.010% | 0.085%   | 0.690% |
| 44          | 0.050%              | 0.050% | 0.190%            | 0.010% | 0.090%   | 0.700% |
| 45          | 0.050%              | 0.055% | 0.200%            | 0.010% | 0.095%   | 0.750% |
| 46          | 0.050%              | 0.060% | 0.220%            | 0.010% | 0.100%   | 0.800% |
| 47          | 0.060%              | 0.070% | 0.240%            | 0.010% | 0.150%   | 0.850% |
| 48          | 0.070%              | 0.080% | 0.260%            | 0.010% | 0.200%   | 0.900% |
| 49          | 0.080%              | 0.090% | 0.280%            | 0.010% | 0.250%   | 0.950% |
| 50          | 0.090%              | 0.100% | 0.300%            | 0.020% | 0.300%   | 1.000% |
| 51          | 0.100%              | 0.150% | 0.320%            | 0.020% | 0.350%   | 1.250% |
| 52          | 0.120%              | 0.200% | 0.340%            | 0.030% | 0.400%   | 1.500% |
| 53          | 0.140%              | 0.250% | 0.360%            | 0.030% | 0.450%   | 1.750% |
| 54          | 0.160%              | 0.300% | 0.380%            | 0.040% | 0.500%   | 2.000% |
| 55          | 0.180%              | 0.350% | 0.400%            | 0.040% | 0.550%   | 2.250% |
| 56          | 0.200%              | 0.400% | 0.420%            | 0.050% | 0.600%   | 2.300% |
| 57          | 0.220%              | 0.450% | 0.440%            | 0.050% | 0.650%   | 2.350% |
| 58          | 0.240%              | 0.500% | 0.480%            | 0.060% | 0.700%   | 2.400% |
| 59          | 0.260%              | 0.550% | 0.520%            | 0.060% | 0.750%   | 2.450% |
| 60          | 0.280%              | 0.600% | 0.540%            | 0.070% | 0.000%   | 0.000% |
| 61          | 0.300%              | 0.650% | 0.560%            | 0.070% | 0.000%   | 0.000% |
| 62          | 0.320%              | 0.700% | 0.600%            | 0.080% | 0.000%   | 0.000% |
| 63          | 0.340%              | 0.750% | 0.620%            | 0.080% | 0.000%   | 0.000% |
| 64          | 0.360%              | 0.800% | 0.640%            | 0.080% | 0.000%   | 0.000% |
| 65 and over | 0.000%              | 0.000% | 0.000%            | 0.000% | 0.000%   | 0.000% |



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**12. 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-2016, and increased by 12.1% 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-2016, and increased by 4.5% for males to reflect Plan experience.

**13. Rates of Mortality for Retired Disabled Lives**

Mortality rates for disabled retirees are based on the sex distinct Retired Pensioner (RP) 2014 Generational Disabled Annuitant Mortality Table, published by the Society of Actuaries, with Generational improvement using Projection Scale MP-2016.

**14. Duty-Related Deaths (Safety Employees Only)**

| Percentage of deaths<br>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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**15. Rates of Retirement**

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

| Age         | General<br>Years of Service |            | Safety<br>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%     | 7.00%                      | 18.00%     |
| 56          | 6.00%                       | 10.00%     | 7.00%                      | 18.00%     |
| 57          | 6.00%                       | 10.00%     | 7.00%                      | 18.00%     |
| 58          | 6.00%                       | 10.00%     | 7.00%                      | 18.00%     |
| 59          | 6.00%                       | 10.00%     | 7.00%                      | 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%     | 20.00%                     | 75.00%     |
| 66          | 35.00%                      | 35.00%     | 20.00%                     | 75.00%     |
| 67          | 35.00%                      | 35.00%     | 20.00%                     | 75.00%     |
| 68          | 35.00%                      | 35.00%     | 20.00%                     | 75.00%     |
| 69          | 35.00%                      | 35.00%     | 20.00%                     | 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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**APPENDIX B – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS**

**16. Changes in Assumptions**

None.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

All actuarial calculations are based on our understanding of the statutes governing the TCERA as contained in the County Employees Retirement Law (CERL) of 1937, with provisions adopted by the County Board of Supervisors, a district Board of Directors, or the TCERA Board, effective through June 30, 2018. The benefit and contribution provisions of this law are summarized briefly below, *(along with corresponding references to the State Code)*. This summary does not attempt to cover all the detailed provisions of the law.

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

**A. Membership in Retirement Plans**

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

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

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

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

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

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

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

**B. Member Contributions**

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

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

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

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

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

|             | Tier 1                              | Tier 2-3                            |
|-------------|-------------------------------------|-------------------------------------|
| 2017 Actual | 49.97% (General)<br>68.45% (Safety) | 19.94% (General)<br>26.44% (Safety) |
| 2018 Actual | 49.89% (General)<br>68.45% (Safety) | 22.02% (General)<br>28.41% (Safety) |

**C. Employer Contributions:**

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

**D. Service Retirement Allowance:**

**Eligibility:**

**General Plan members:**

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

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

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***Safety Plan members:***

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

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

**Final Compensation:**

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

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

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

**Compensation**

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

**Integration with**

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

**Monthly Allowance:**

***General Plan members:***

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

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**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:<br>Label:<br>Base:<br>Age | Age Factors By Plan<br>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 |
| 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. (31789.5)

**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    |

Members with less than 20 years of service are eligible for benefits in accordance to the schedule on the following page:

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| <b>Years of Service</b> | <b>Percentage of Full Benefit</b> |
|-------------------------|-----------------------------------|
| 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 a beneficiary having an insurable interest in the life of the member.

**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 2 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. (31789.5)

**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 5, 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. (31789.5)

**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% x Final Compensation. (31787)

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

**H. Non Service-Connected Death Benefits**

**Eligibility:**

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

**Monthly Allowance:**

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

**I. Deferred Vested Benefits**

**Eligibility:**

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

**Monthly Allowance:**

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

**J. Cost-of-Living Increases**

Cost-of-living increases (or decreases) are applied to all retirement allowances (service and disability), optional death allowances, and annual death allowances effective April 1, based

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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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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**Assumptions Used for Optional Forms:**

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

**General**

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

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

Discount Rate: 7.25% per annum

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

**Safety**

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

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

Discount Rate: 7.25% per annum

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

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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.



**APPENDIX D – GLOSSARY**

**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.

**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**

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                            |
|-------------|-------------------------------------|-------------------------------------|
| 2017 Actual | 49.97% (General)<br>68.45% (Safety) | 19.94% (General)<br>26.44% (Safety) |
| 2018 Actual | 49.89% (General)<br>68.45% (Safety) | 22.02% (General)<br>28.41% (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**

**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<br>\$161.54   | Over<br>\$161.54 | First<br>\$161.54     | Over<br>\$161.54 | First<br>\$161.54 | Over<br>\$161.54 | First<br>\$161.54    | Over<br>\$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, increased by 12.1% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female<br>For Safety: Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2016, 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

The tables on the next six pages show the 2018 member contribution rates split into the Basic and COLA components, by tier.

**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| Entry Age           | General Tier I  |               |                |               |                |               |
|---------------------|---|---------------|----------------|---------------|----------------|---------------|
|                     | Basic Rate  |               | COLA Rate      |               | Total Rate     |               |
|                     | First \$161.54  | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 16                  | 1.65%   | 2.48%         | 0.82%          | 1.23%         | 2.47%          | 3.71%         |
| 17                  | 1.69%   | 2.54%         | 0.84%          | 1.26%         | 2.53%          | 3.80%         |
| 18                  | 1.73%   | 2.60%         | 0.86%          | 1.29%         | 2.59%          | 3.89%         |
| 19                  | 1.77%   | 2.66%         | 0.88%          | 1.32%         | 2.65%          | 3.98%         |
| 20                  | 1.81%   | 2.72%         | 0.90%          | 1.35%         | 2.71%          | 4.07%         |
| 21                  | 1.85%   | 2.78%         | 0.92%          | 1.38%         | 2.77%          | 4.16%         |
| 22                  | 1.89%   | 2.84%         | 0.95%          | 1.42%         | 2.84%          | 4.26%         |
| 23                  | 1.94%   | 2.91%         | 0.97%          | 1.45%         | 2.91%          | 4.36%         |
| 24                  | 1.98%   | 2.98%         | 0.99%          | 1.48%         | 2.97%          | 4.46%         |
| 25                  | 2.03%   | 3.04%         | 1.01%          | 1.52%         | 3.04%          | 4.56%         |
| 26                  | 2.07%   | 3.11%         | 1.03%          | 1.55%         | 3.11%          | 4.66%         |
| 27                  | 2.12%   | 3.18%         | 1.06%          | 1.59%         | 3.18%          | 4.77%         |
| 28                  | 2.17%   | 3.26%         | 1.08%          | 1.62%         | 3.25%          | 4.88%         |
| 29                  | 2.22%   | 3.33%         | 1.11%          | 1.66%         | 3.33%          | 4.99%         |
| 30                  | 2.27%   | 3.41%         | 1.13%          | 1.70%         | 3.41%          | 5.11%         |
| 31                  | 2.32%   | 3.48%         | 1.16%          | 1.74%         | 3.48%          | 5.22%         |
| 32                  | 2.38%   | 3.57%         | 1.19%          | 1.78%         | 3.57%          | 5.35%         |
| 33                  | 2.43%   | 3.65%         | 1.21%          | 1.82%         | 3.65%          | 5.47%         |
| 34                  | 2.49%   | 3.74%         | 1.24%          | 1.86%         | 3.73%          | 5.60%         |
| 35                  | 2.54%   | 3.80%         | 1.26%          | 1.90%         | 3.80%          | 5.70%         |
| 36                  | 2.58%   | 3.87%         | 1.29%          | 1.93%         | 3.87%          | 5.80%         |
| 37                  | 2.63%   | 3.94%         | 1.31%          | 1.97%         | 3.94%          | 5.91%         |
| 38                  | 2.68%   | 4.02%         | 1.34%          | 2.00%         | 4.01%          | 6.02%         |
| 39                  | 2.73%   | 4.09%         | 1.36%          | 2.04%         | 4.09%          | 6.13%         |
| 40                  | 2.78%   | 4.16%         | 1.38%          | 2.08%         | 4.16%          | 6.24%         |
| 41                  | 2.83%   | 4.24%         | 1.41%          | 2.12%         | 4.24%          | 6.36%         |
| 42                  | 2.88%   | 4.32%         | 1.44%          | 2.16%         | 4.32%          | 6.48%         |
| 43                  | 2.94%   | 4.40%         | 1.46%          | 2.20%         | 4.40%          | 6.60%         |
| 44                  | 2.99%   | 4.49%         | 1.49%          | 2.24%         | 4.49%          | 6.73%         |
| 45                  | 3.05%   | 4.58%         | 1.52%          | 2.28%         | 4.57%          | 6.86%         |
| 46                  | 3.11%   | 4.66%         | 1.55%          | 2.33%         | 4.66%          | 6.99%         |
| 47                  | 3.17%   | 4.76%         | 1.58%          | 2.37%         | 4.75%          | 7.13%         |
| 48                  | 3.23%   | 4.85%         | 1.61%          | 2.42%         | 4.85%          | 7.27%         |
| 49                  | 3.30%   | 4.96%         | 1.65%          | 2.47%         | 4.95%          | 7.43%         |
| 50                  | 3.38%   | 5.06%         | 1.68%          | 2.53%         | 5.06%          | 7.59%         |
| 51                  | 3.45%   | 5.18%         | 1.72%          | 2.58%         | 5.17%          | 7.76%         |
| 52                  | 3.52%   | 5.28%         | 1.76%          | 2.64%         | 5.28%          | 7.92%         |
| 53                  | 3.59%   | 5.38%         | 1.79%          | 2.69%         | 5.38%          | 8.07%         |
| 54                  | 3.66%   | 5.49%         | 1.83%          | 2.74%         | 5.49%          | 8.23%         |
| 55                  | 3.71%   | 5.56%         | 1.85%          | 2.78%         | 5.56%          | 8.34%         |
| 56                  | 3.74%   | 5.60%         | 1.86%          | 2.80%         | 5.60%          | 8.40%         |
| 57                  | 3.73%   | 5.59%         | 1.86%          | 2.79%         | 5.59%          | 8.38%         |
| 58                  | 3.70%   | 5.54%         | 1.84%          | 2.77%         | 5.54%          | 8.31%         |
| 59                  | 3.63%   | 5.45%         | 1.81%          | 2.72%         | 5.45%          | 8.17%         |
| <b>Assumptions:</b> |   |               |                |               |                |               |
| Interest:           | 7.25%   |               |                |               |                |               |
| Salary:             | 3.00%   |               |                |               |                |               |
| COLA:               | 2.70%   |               |                |               |                |               |
| Mortality:          | Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2016, increased by 12.1% 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| Entry Age           | General Tiers 2 and 3   |               |                |               |                |               |
|---------------------|---|---------------|----------------|---------------|----------------|---------------|
|                     | Basic Rate  |               | COLA Rate      |               | Total Rate     |               |
|                     | First \$161.54  | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 16                  | 3.19%   | 4.79%         | 0.70%          | 1.05%         | 3.89%          | 5.84%         |
| 17                  | 3.27%   | 4.90%         | 0.72%          | 1.08%         | 3.99%          | 5.98%         |
| 18                  | 3.34%   | 5.02%         | 0.74%          | 1.10%         | 4.08%          | 6.12%         |
| 19                  | 3.42%   | 5.13%         | 0.75%          | 1.13%         | 4.17%          | 6.26%         |
| 20                  | 3.50%   | 5.25%         | 0.77%          | 1.15%         | 4.27%          | 6.40%         |
| 21                  | 3.58%   | 5.37%         | 0.79%          | 1.18%         | 4.37%          | 6.55%         |
| 22                  | 3.66%   | 5.49%         | 0.81%          | 1.21%         | 4.47%          | 6.70%         |
| 23                  | 3.75%   | 5.62%         | 0.83%          | 1.24%         | 4.57%          | 6.86%         |
| 24                  | 3.83%   | 5.75%         | 0.84%          | 1.26%         | 4.67%          | 7.01%         |
| 25                  | 3.92%   | 5.88%         | 0.86%          | 1.30%         | 4.79%          | 7.18%         |
| 26                  | 4.01%   | 6.02%         | 0.88%          | 1.32%         | 4.89%          | 7.34%         |
| 27                  | 4.10%   | 6.15%         | 0.90%          | 1.36%         | 5.01%          | 7.51%         |
| 28                  | 4.20%   | 6.29%         | 0.92%          | 1.39%         | 5.12%          | 7.68%         |
| 29                  | 4.29%   | 6.44%         | 0.95%          | 1.42%         | 5.24%          | 7.86%         |
| 30                  | 4.39%   | 6.59%         | 0.97%          | 1.45%         | 5.36%          | 8.04%         |
| 31                  | 4.49%   | 6.74%         | 0.99%          | 1.48%         | 5.48%          | 8.22%         |
| 32                  | 4.59%   | 6.89%         | 1.01%          | 1.52%         | 5.61%          | 8.41%         |
| 33                  | 4.69%   | 7.04%         | 1.03%          | 1.55%         | 5.73%          | 8.59%         |
| 34                  | 4.79%   | 7.18%         | 1.05%          | 1.58%         | 5.84%          | 8.76%         |
| 35                  | 4.88%   | 7.32%         | 1.07%          | 1.61%         | 5.95%          | 8.93%         |
| 36                  | 4.97%   | 7.45%         | 1.09%          | 1.64%         | 6.06%          | 9.09%         |
| 37                  | 5.06%   | 7.59%         | 1.11%          | 1.67%         | 6.17%          | 9.26%         |
| 38                  | 5.15%   | 7.73%         | 1.13%          | 1.70%         | 6.29%          | 9.43%         |
| 39                  | 5.25%   | 7.87%         | 1.15%          | 1.73%         | 6.40%          | 9.60%         |
| 40                  | 5.34%   | 8.02%         | 1.18%          | 1.76%         | 6.52%          | 9.78%         |
| 41                  | 5.44%   | 8.16%         | 1.20%          | 1.80%         | 6.64%          | 9.96%         |
| 42                  | 5.55%   | 8.32%         | 1.22%          | 1.83%         | 6.77%          | 10.15%        |
| 43                  | 5.65%   | 8.47%         | 1.24%          | 1.87%         | 6.89%          | 10.34%        |
| 44                  | 5.76%   | 8.64%         | 1.27%          | 1.90%         | 7.03%          | 10.54%        |
| 45                  | 5.87%   | 8.80%         | 1.29%          | 1.94%         | 7.16%          | 10.74%        |
| 46                  | 5.98%   | 8.97%         | 1.32%          | 1.98%         | 7.30%          | 10.95%        |
| 47                  | 6.10%   | 9.15%         | 1.34%          | 2.01%         | 7.44%          | 11.16%        |
| 48                  | 6.22%   | 9.33%         | 1.37%          | 2.06%         | 7.59%          | 11.39%        |
| 49                  | 6.35%   | 9.53%         | 1.40%          | 2.10%         | 7.75%          | 11.63%        |
| 50                  | 6.49%   | 9.73%         | 1.43%          | 2.14%         | 7.91%          | 11.87%        |
| 51                  | 6.61%   | 9.92%         | 1.46%          | 2.18%         | 8.07%          | 12.10%        |
| 52                  | 6.73%   | 10.09%        | 1.48%          | 2.22%         | 8.21%          | 12.31%        |
| 53                  | 6.82%   | 10.24%        | 1.50%          | 2.25%         | 8.33%          | 12.49%        |
| 54                  | 6.90%   | 10.34%        | 1.52%          | 2.28%         | 8.41%          | 12.62%        |
| 55                  | 6.91%   | 10.37%        | 1.52%          | 2.28%         | 8.43%          | 12.65%        |
| 56                  | 6.88%   | 10.33%        | 1.52%          | 2.27%         | 8.40%          | 12.60%        |
| 57                  | 6.80%   | 10.20%        | 1.50%          | 2.24%         | 8.29%          | 12.44%        |
| 58                  | 7.03%   | 10.54%        | 1.55%          | 2.32%         | 8.57%          | 12.86%        |
| 59                  | 7.27%   | 10.91%        | 1.60%          | 2.40%         | 8.87%          | 13.31%        |
| <b>Assumptions:</b> |   |               |                |               |                |               |
| Interest:           | 7.25%   |               |                |               |                |               |
| Salary:             | 3.00%   |               |                |               |                |               |
| COLA:               | 2.00%   |               |                |               |                |               |
| Mortality:          | Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2016, increased by 12.1% 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| General Tier 4      |   |           |            |
|---------------------|---|-----------|------------|
| Entry Age           | Basic Rate  | COLA Rate | Total Rate |
| 16                  | 3.44%   | 0.67%     | 4.11%      |
| 17                  | 3.44%   | 0.67%     | 4.11%      |
| 18                  | 3.44%   | 0.67%     | 4.11%      |
| 19                  | 3.44%   | 0.67%     | 4.11%      |
| 20                  | 3.44%   | 0.67%     | 4.11%      |
| 21                  | 3.61%   | 0.71%     | 4.32%      |
| 22                  | 3.79%   | 0.74%     | 4.53%      |
| 23                  | 3.96%   | 0.78%     | 4.74%      |
| 24                  | 4.14%   | 0.81%     | 4.95%      |
| 25                  | 4.32%   | 0.85%     | 5.17%      |
| 26                  | 4.49%   | 0.88%     | 5.37%      |
| 27                  | 4.66%   | 0.92%     | 5.58%      |
| 28                  | 4.84%   | 0.96%     | 5.80%      |
| 29                  | 5.02%   | 0.99%     | 6.01%      |
| 30                  | 5.21%   | 1.02%     | 6.23%      |
| 31                  | 5.39%   | 1.05%     | 6.44%      |
| 32                  | 5.57%   | 1.09%     | 6.66%      |
| 33                  | 5.75%   | 1.13%     | 6.88%      |
| 34                  | 5.95%   | 1.16%     | 7.11%      |
| 35                  | 6.14%   | 1.20%     | 7.34%      |
| 36                  | 6.35%   | 1.23%     | 7.58%      |
| 37                  | 6.56%   | 1.27%     | 7.83%      |
| 38                  | 6.77%   | 1.32%     | 8.09%      |
| 39                  | 6.99%   | 1.36%     | 8.35%      |
| 40                  | 7.21%   | 1.40%     | 8.61%      |
| 41                  | 7.43%   | 1.44%     | 8.87%      |
| 42                  | 7.65%   | 1.48%     | 9.13%      |
| 43                  | 7.89%   | 1.53%     | 9.42%      |
| 44                  | 8.14%   | 1.57%     | 9.71%      |
| 45                  | 8.38%   | 1.63%     | 10.01%     |
| 46                  | 8.68%   | 1.69%     | 10.37%     |
| 47                  | 8.97%   | 1.76%     | 10.73%     |
| 48                  | 9.24%   | 1.79%     | 11.03%     |
| 49                  | 9.49%   | 1.84%     | 11.33%     |
| 50                  | 9.74%   | 1.87%     | 11.61%     |
| 51                  | 10.00%  | 1.90%     | 11.90%     |
| 52                  | 10.25%  | 1.92%     | 12.17%     |
| 53                  | 10.49%  | 1.96%     | 12.45%     |
| 54                  | 10.72%  | 1.98%     | 12.70%     |
| 55                  | 10.91%  | 2.00%     | 12.91%     |
| 56                  | 11.13%  | 2.01%     | 13.14%     |
| 57                  | 11.31%  | 2.01%     | 13.32%     |
| 58                  | 11.47%  | 2.01%     | 13.48%     |
| 59                  | 11.57%  | 2.00%     | 13.57%     |
| <b>Assumptions:</b> |   |           |            |
| Interest:           | 7.25%   |           |            |
| Salary:             | 3.00%   |           |            |
| COLA:               | 2.00%   |           |            |
| Mortality:          | Retired Pensioner (RP) 2014 Combined Healthy Table, with 20-year Generational improvement using Projection Scale MP-2016, increased by 12.1% 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, 2018**

**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                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 17                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 18                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 19                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 20                  | 2.41%   | 3.62%         | 1.65%          | 2.47%         | 4.06%          | 6.09%         |
| 21                  | 2.47%   | 3.70%         | 1.69%          | 2.53%         | 4.15%          | 6.23%         |
| 22                  | 2.52%   | 3.78%         | 1.73%          | 2.59%         | 4.25%          | 6.37%         |
| 23                  | 2.58%   | 3.86%         | 1.76%          | 2.65%         | 4.34%          | 6.51%         |
| 24                  | 2.64%   | 3.95%         | 1.80%          | 2.71%         | 4.44%          | 6.66%         |
| 25                  | 2.70%   | 4.04%         | 1.84%          | 2.77%         | 4.54%          | 6.81%         |
| 26                  | 2.76%   | 4.14%         | 1.89%          | 2.83%         | 4.65%          | 6.97%         |
| 27                  | 2.82%   | 4.23%         | 1.93%          | 2.90%         | 4.75%          | 7.13%         |
| 28                  | 2.89%   | 4.33%         | 1.97%          | 2.96%         | 4.86%          | 7.29%         |
| 29                  | 2.95%   | 4.43%         | 2.02%          | 3.03%         | 4.97%          | 7.46%         |
| 30                  | 3.02%   | 4.53%         | 2.07%          | 3.10%         | 5.09%          | 7.63%         |
| 31                  | 3.09%   | 4.64%         | 2.12%          | 3.17%         | 5.21%          | 7.81%         |
| 32                  | 3.17%   | 4.75%         | 2.17%          | 3.25%         | 5.33%          | 8.00%         |
| 33                  | 3.24%   | 4.86%         | 2.22%          | 3.33%         | 5.46%          | 8.19%         |
| 34                  | 3.32%   | 4.99%         | 2.28%          | 3.41%         | 5.60%          | 8.40%         |
| 35                  | 3.41%   | 5.11%         | 2.33%          | 3.50%         | 5.74%          | 8.61%         |
| 36                  | 3.50%   | 5.25%         | 2.39%          | 3.59%         | 5.89%          | 8.84%         |
| 37                  | 3.59%   | 5.39%         | 2.46%          | 3.69%         | 6.05%          | 9.08%         |
| 38                  | 3.68%   | 5.52%         | 2.52%          | 3.77%         | 6.19%          | 9.29%         |
| 39                  | 3.75%   | 5.63%         | 2.57%          | 3.85%         | 6.32%          | 9.48%         |
| 40                  | 3.82%   | 5.73%         | 2.61%          | 3.92%         | 6.43%          | 9.65%         |
| 41                  | 3.89%   | 5.84%         | 2.66%          | 3.99%         | 6.55%          | 9.83%         |
| 42                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 43                  | 3.99%   | 5.99%         | 2.73%          | 4.10%         | 6.73%          | 10.09%        |
| 44                  | 4.01%   | 6.01%         | 2.74%          | 4.12%         | 6.75%          | 10.13%        |
| 45                  | 4.02%   | 6.04%         | 2.76%          | 4.13%         | 6.78%          | 10.17%        |
| 46                  | 4.03%   | 6.05%         | 2.76%          | 4.14%         | 6.79%          | 10.19%        |
| 47                  | 4.03%   | 6.05%         | 2.76%          | 4.14%         | 6.79%          | 10.19%        |
| 48                  | 4.01%   | 6.02%         | 2.75%          | 4.12%         | 6.76%          | 10.14%        |
| 49                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 50                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 51                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 52                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 53                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 54                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 55                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 56                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 57                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 58                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| 59                  | 3.95%   | 5.92%         | 2.70%          | 4.05%         | 6.65%          | 9.97%         |
| <b>Assumptions:</b> |   |               |                |               |                |               |
| Interest:           | 7.25%   |               |                |               |                |               |
| Salary:             | 3.00%   |               |                |               |                |               |
| COLA:               | 2.70%   |               |                |               |                |               |
| Mortality:          | Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2016, 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| Entry Age           | Safety Tiers 2 and 3  |               |                |               |                |               |
|---------------------|---|---------------|----------------|---------------|----------------|---------------|
|                     | Basic Rate  |               | COLA Rate      |               | Total Rate     |               |
|                     | First \$161.54  | Over \$161.54 | First \$161.54 | Over \$161.54 | First \$161.54 | Over \$161.54 |
| 16                  | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 17                  | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 18                  | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 19                  | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 20                  | 4.66%   | 6.99%         | 1.32%          | 1.99%         | 5.99%          | 8.98%         |
| 21                  | 4.77%   | 7.15%         | 1.35%          | 2.03%         | 6.12%          | 9.18%         |
| 22                  | 4.88%   | 7.31%         | 1.38%          | 2.08%         | 6.26%          | 9.39%         |
| 23                  | 4.98%   | 7.48%         | 1.42%          | 2.12%         | 6.40%          | 9.60%         |
| 24                  | 5.10%   | 7.65%         | 1.45%          | 2.17%         | 6.55%          | 9.82%         |
| 25                  | 5.21%   | 7.82%         | 1.48%          | 2.22%         | 6.69%          | 10.04%        |
| 26                  | 5.33%   | 8.00%         | 1.51%          | 2.27%         | 6.85%          | 10.27%        |
| 27                  | 5.45%   | 8.18%         | 1.55%          | 2.32%         | 7.00%          | 10.50%        |
| 28                  | 5.58%   | 8.36%         | 1.58%          | 2.38%         | 7.16%          | 10.74%        |
| 29                  | 5.71%   | 8.56%         | 1.62%          | 2.43%         | 7.33%          | 10.99%        |
| 30                  | 5.84%   | 8.76%         | 1.66%          | 2.49%         | 7.50%          | 11.25%        |
| 31                  | 5.98%   | 8.96%         | 1.70%          | 2.55%         | 7.67%          | 11.51%        |
| 32                  | 6.12%   | 9.18%         | 1.74%          | 2.61%         | 7.86%          | 11.79%        |
| 33                  | 6.27%   | 9.40%         | 1.78%          | 2.67%         | 8.05%          | 12.07%        |
| 34                  | 6.42%   | 9.63%         | 1.82%          | 2.74%         | 8.25%          | 12.37%        |
| 35                  | 6.59%   | 9.88%         | 1.87%          | 2.81%         | 8.46%          | 12.69%        |
| 36                  | 6.75%   | 10.12%        | 1.92%          | 2.88%         | 8.67%          | 13.00%        |
| 37                  | 6.90%   | 10.35%        | 1.96%          | 2.94%         | 8.86%          | 13.29%        |
| 38                  | 7.03%   | 10.55%        | 2.00%          | 3.00%         | 9.03%          | 13.55%        |
| 39                  | 7.16%   | 10.74%        | 2.03%          | 3.05%         | 9.19%          | 13.79%        |
| 40                  | 7.27%   | 10.91%        | 2.07%          | 3.10%         | 9.34%          | 14.01%        |
| 41                  | 7.37%   | 11.05%        | 2.09%          | 3.14%         | 9.46%          | 14.19%        |
| 42                  | 7.43%   | 11.15%        | 2.11%          | 3.17%         | 9.55%          | 14.32%        |
| 43                  | 7.47%   | 11.21%        | 2.12%          | 3.18%         | 9.59%          | 14.39%        |
| 44                  | 7.49%   | 11.23%        | 2.13%          | 3.19%         | 9.61%          | 14.42%        |
| 45                  | 7.49%   | 11.23%        | 2.13%          | 3.19%         | 9.61%          | 14.42%        |
| 46                  | 7.46%   | 11.19%        | 2.12%          | 3.18%         | 9.58%          | 14.37%        |
| 47                  | 7.38%   | 11.07%        | 2.10%          | 3.15%         | 9.48%          | 14.22%        |
| 48                  | 7.63%   | 11.45%        | 2.17%          | 3.25%         | 9.80%          | 14.70%        |
| 49                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 50                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 51                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 52                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 53                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 54                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 55                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 56                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 57                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 58                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| 59                  | 7.89%   | 11.84%        | 2.24%          | 3.36%         | 10.13%         | 15.20%        |
| <b>Assumptions:</b> |   |               |                |               |                |               |
| Interest:           | 7.25%   |               |                |               |                |               |
| 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-2016, 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

| Safety Tier-4       |   |           |            |
|---------------------|---|-----------|------------|
| Entry Age           | Basic Rate  | COLA Rate | Total Rate |
| 16                  | 7.26%   | 1.66%     | 8.92%      |
| 17                  | 7.26%   | 1.66%     | 8.92%      |
| 18                  | 7.26%   | 1.66%     | 8.92%      |
| 19                  | 7.26%   | 1.66%     | 8.92%      |
| 20                  | 7.26%   | 1.66%     | 8.92%      |
| 21                  | 7.54%   | 1.73%     | 9.27%      |
| 22                  | 7.82%   | 1.80%     | 9.62%      |
| 23                  | 8.11%   | 1.86%     | 9.97%      |
| 24                  | 8.41%   | 1.93%     | 10.34%     |
| 25                  | 8.71%   | 2.00%     | 10.71%     |
| 26                  | 9.01%   | 2.06%     | 11.07%     |
| 27                  | 9.31%   | 2.12%     | 11.43%     |
| 28                  | 9.61%   | 2.19%     | 11.80%     |
| 29                  | 9.90%   | 2.25%     | 12.15%     |
| 30                  | 10.19%  | 2.32%     | 12.51%     |
| 31                  | 10.51%  | 2.39%     | 12.90%     |
| 32                  | 10.83%  | 2.46%     | 13.29%     |
| 33                  | 11.15%  | 2.53%     | 13.68%     |
| 34                  | 11.47%  | 2.61%     | 14.08%     |
| 35                  | 11.81%  | 2.69%     | 14.50%     |
| 36                  | 12.11%  | 2.74%     | 14.85%     |
| 37                  | 12.40%  | 2.80%     | 15.20%     |
| 38                  | 12.69%  | 2.86%     | 15.55%     |
| 39                  | 13.00%  | 2.93%     | 15.93%     |
| 40                  | 13.34%  | 2.99%     | 16.33%     |
| 41                  | 13.66%  | 3.05%     | 16.71%     |
| 42                  | 13.99%  | 3.12%     | 17.11%     |
| 43                  | 14.37%  | 3.19%     | 17.56%     |
| 44                  | 14.75%  | 3.27%     | 18.02%     |
| 45                  | 15.15%  | 3.34%     | 18.49%     |
| 46                  | 15.48%  | 3.38%     | 18.86%     |
| 47                  | 15.81%  | 3.41%     | 19.22%     |
| 48                  | 16.14%  | 3.44%     | 19.58%     |
| 49                  | 16.47%  | 3.48%     | 19.95%     |
| 50                  | 16.47%  | 3.48%     | 19.95%     |
| 51                  | 16.47%  | 3.48%     | 19.95%     |
| 52                  | 16.47%  | 3.48%     | 19.95%     |
| 53                  | 16.47%  | 3.48%     | 19.95%     |
| 54                  | 16.47%  | 3.48%     | 19.95%     |
| 55                  | 16.47%  | 3.48%     | 19.95%     |
| 56                  | 16.47%  | 3.48%     | 19.95%     |
| 57                  | 16.47%  | 3.48%     | 19.95%     |
| 58                  | 16.47%  | 3.48%     | 19.95%     |
| 59                  | 16.47%  | 3.48%     | 19.95%     |
| <b>Assumptions:</b> |   |           |            |
| Interest:           | 7.25%   |           |            |
| 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-2016, 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, 2018**

**APPENDIX E – MEMBER CONTRIBUTION RATES**

**2017 Member Contribution Rates (for fiscal year ending 2019)**

| Entry Age           | General Tier 1  |                  | General Tiers 2 and 3 |                  | Safety Tier 1     |                  | Safety Tiers 2 and 3 |                  | Tier 4 Members |        |
|---------------------|---|------------------|-----------------------|------------------|-------------------|------------------|----------------------|------------------|----------------|--------|
|                     | First<br>\$161.54   | Over<br>\$161.54 | First<br>\$161.54     | Over<br>\$161.54 | First<br>\$161.54 | Over<br>\$161.54 | First<br>\$161.54    | Over<br>\$161.54 | General        | Safety |
| 16                  | 2.48%   | 3.72%            | 3.83%                 | 5.74%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 17                  | 2.53%   | 3.80%            | 3.92%                 | 5.88%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 18                  | 2.59%   | 3.89%            | 4.01%                 | 6.01%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 19                  | 2.65%   | 3.98%            | 4.10%                 | 6.15%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 20                  | 2.71%   | 4.07%            | 4.20%                 | 6.30%            | 4.06%             | 6.09%            | 5.89%                | 8.84%            | 4.14%          | 8.91%  |
| 21                  | 2.78%   | 4.17%            | 4.29%                 | 6.44%            | 4.15%             | 6.23%            | 6.03%                | 9.04%            | 4.35%          | 9.26%  |
| 22                  | 2.84%   | 4.26%            | 4.39%                 | 6.59%            | 4.25%             | 6.37%            | 6.16%                | 9.24%            | 4.56%          | 9.61%  |
| 23                  | 2.91%   | 4.36%            | 4.49%                 | 6.74%            | 4.34%             | 6.51%            | 6.30%                | 9.45%            | 4.77%          | 9.96%  |
| 24                  | 2.97%   | 4.46%            | 4.59%                 | 6.89%            | 4.44%             | 6.66%            | 6.45%                | 9.67%            | 4.98%          | 10.33% |
| 25                  | 3.04%   | 4.56%            | 4.70%                 | 7.05%            | 4.54%             | 6.81%            | 6.59%                | 9.88%            | 5.20%          | 10.70% |
| 26                  | 3.11%   | 4.67%            | 4.81%                 | 7.21%            | 4.65%             | 6.97%            | 6.74%                | 10.11%           | 5.41%          | 11.06% |
| 27                  | 3.18%   | 4.77%            | 4.92%                 | 7.38%            | 4.75%             | 7.13%            | 6.89%                | 10.34%           | 5.62%          | 11.42% |
| 28                  | 3.25%   | 4.88%            | 5.03%                 | 7.55%            | 4.86%             | 7.29%            | 7.05%                | 10.58%           | 5.84%          | 11.79% |
| 29                  | 3.33%   | 5.00%            | 5.15%                 | 7.72%            | 4.97%             | 7.46%            | 7.21%                | 10.82%           | 6.05%          | 12.14% |
| 30                  | 3.41%   | 5.11%            | 5.27%                 | 7.90%            | 5.09%             | 7.63%            | 7.38%                | 11.07%           | 6.28%          | 12.50% |
| 31                  | 3.49%   | 5.23%            | 5.39%                 | 8.08%            | 5.21%             | 7.81%            | 7.56%                | 11.34%           | 6.49%          | 12.89% |
| 32                  | 3.57%   | 5.35%            | 5.51%                 | 8.27%            | 5.33%             | 8.00%            | 7.74%                | 11.61%           | 6.70%          | 13.28% |
| 33                  | 3.65%   | 5.47%            | 5.63%                 | 8.45%            | 5.46%             | 8.19%            | 7.93%                | 11.89%           | 6.93%          | 13.67% |
| 34                  | 3.73%   | 5.60%            | 5.74%                 | 8.61%            | 5.60%             | 8.40%            | 8.12%                | 12.18%           | 7.16%          | 14.07% |
| 35                  | 3.80%   | 5.70%            | 5.85%                 | 8.77%            | 5.74%             | 8.61%            | 8.33%                | 12.49%           | 7.39%          | 14.48% |
| 36                  | 3.87%   | 5.81%            | 5.95%                 | 8.93%            | 5.89%             | 8.84%            | 8.53%                | 12.80%           | 7.63%          | 14.84% |
| 37                  | 3.94%   | 5.91%            | 6.07%                 | 9.10%            | 6.05%             | 9.08%            | 8.73%                | 13.09%           | 7.88%          | 15.18% |
| 38                  | 4.01%   | 6.02%            | 6.18%                 | 9.27%            | 6.19%             | 9.29%            | 8.90%                | 13.35%           | 8.15%          | 15.54% |
| 39                  | 4.09%   | 6.13%            | 6.29%                 | 9.44%            | 6.32%             | 9.48%            | 9.05%                | 13.58%           | 8.41%          | 15.91% |
| 40                  | 4.17%   | 6.25%            | 6.41%                 | 9.61%            | 6.43%             | 9.65%            | 9.19%                | 13.79%           | 8.67%          | 16.31% |
| 41                  | 4.24%   | 6.36%            | 6.53%                 | 9.79%            | 6.55%             | 9.83%            | 9.32%                | 13.98%           | 8.93%          | 16.69% |
| 42                  | 4.32%   | 6.48%            | 6.65%                 | 9.97%            | 6.65%             | 9.97%            | 9.40%                | 14.10%           | 9.19%          | 17.10% |
| 43                  | 4.40%   | 6.60%            | 6.77%                 | 10.16%           | 6.73%             | 10.09%           | 9.45%                | 14.17%           | 9.49%          | 17.54% |
| 44                  | 4.49%   | 6.73%            | 6.91%                 | 10.36%           | 6.75%             | 10.13%           | 9.47%                | 14.20%           | 9.78%          | 18.00% |
| 45                  | 4.57%   | 6.86%            | 7.03%                 | 10.55%           | 6.78%             | 10.17%           | 9.47%                | 14.20%           | 10.08%         | 18.47% |
| 46                  | 4.66%   | 6.99%            | 7.17%                 | 10.76%           | 6.79%             | 10.19%           | 9.43%                | 14.15%           | 10.44%         | 18.84% |
| 47                  | 4.75%   | 7.13%            | 7.31%                 | 10.97%           | 6.79%             | 10.19%           | 9.33%                | 14.00%           | 10.81%         | 19.20% |
| 48                  | 4.85%   | 7.28%            | 7.47%                 | 11.20%           | 6.76%             | 10.14%           | 9.65%                | 14.47%           | 11.11%         | 19.56% |
| 49                  | 4.95%   | 7.43%            | 7.62%                 | 11.43%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 11.41%         | 19.93% |
| 50                  | 5.06%   | 7.59%            | 7.78%                 | 11.67%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 11.69%         | 19.93% |
| 51                  | 5.18%   | 7.77%            | 7.93%                 | 11.89%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 11.98%         | 19.93% |
| 52                  | 5.28%   | 7.92%            | 8.07%                 | 12.10%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 12.26%         | 19.93% |
| 53                  | 5.39%   | 8.08%            | 8.19%                 | 12.28%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 12.54%         | 19.93% |
| 54                  | 5.49%   | 8.23%            | 8.27%                 | 12.40%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 12.79%         | 19.93% |
| 55                  | 5.56%   | 8.34%            | 8.29%                 | 12.44%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.00%         | 19.93% |
| 56                  | 5.60%   | 8.40%            | 8.25%                 | 12.38%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.23%         | 19.93% |
| 57                  | 5.59%   | 8.38%            | 8.15%                 | 12.23%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.42%         | 19.93% |
| 58                  | 5.55%   | 8.32%            | 8.43%                 | 12.65%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.58%         | 19.93% |
| 59                  | 5.45%   | 8.18%            | 8.72%                 | 13.08%           | 6.65%             | 9.97%            | 9.98%                | 14.97%           | 13.67%         | 19.93% |
| <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, increased by 12.1% for males and 8.0% for females to reflect Plan experience, and blended 30% male and 70% female<br>For Safety: Retired Pensioner (RP) 2014 Combined Healthy Table with blue-collar adjustment, with 20-year Generational improvement using Projection Scale MP-2016, 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, 2018**

**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, 2018 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                    | 0.000512                         | 0.000000 | 0.0800                          |  |
| 30                                 | 0.000                    | 0.000500                         | 0.000000 | 0.0800                          |  |
| 35                                 | 0.000                    | 0.000590                         | 0.000000 | 0.0800                          |  |
| 40                                 | 0.000                    | 0.000696                         | 0.000000 | 0.0800                          |  |
| 45                                 | 0.000                    | 0.001045                         | 0.000000 | 0.0800                          |  |
| 50                                 | 0.050                    | 0.001801                         | 0.000000 | 0.0500                          |  |
| 55                                 | 0.060                    | 0.003046                         | 0.000000 | 0.0500                          |  |
| 60                                 | 0.150                    | 0.005241                         | 0.000000 | 0.0500                          |  |
| 65                                 | 0.350                    | 0.009229                         | 0.000000 | 0.0000                          |  |
| 70                                 | 0.350                    | 0.015142                         | 0.000000 | 0.0000                          |  |

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

\*\*The Withdrawal Rates above assume 3-5 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                    | 0.000181                         | 0.000000 | 0.0800                          |  |
| 30                                 | 0.000                    | 0.000236                         | 0.000000 | 0.0800                          |  |
| 35                                 | 0.000                    | 0.000313                         | 0.000000 | 0.0800                          |  |
| 40                                 | 0.000                    | 0.000428                         | 0.000000 | 0.0800                          |  |
| 45                                 | 0.000                    | 0.000691                         | 0.000000 | 0.0800                          |  |
| 50                                 | 0.050                    | 0.001156                         | 0.000000 | 0.0500                          |  |
| 55                                 | 0.060                    | 0.001802                         | 0.000000 | 0.0500                          |  |
| 60                                 | 0.150                    | 0.002650                         | 0.000000 | 0.0500                          |  |
| 65                                 | 0.350                    | 0.003916                         | 0.000000 | 0.0000                          |  |
| 70                                 | 0.350                    | 0.006568                         | 0.000000 | 0.0000                          |  |

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

\*\*The Withdrawal Rates above assume 3-5 years of service.



**TULARE COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JUNE 30, 2018**

**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                    | 0.000358                         | 0.000260 | 0.0700                          |
| 30                                 |  | 0.000                    | 0.000350                         | 0.000253 | 0.0700                          |
| 35                                 |  | 0.000                    | 0.000356                         | 0.000356 | 0.0700                          |
| 40                                 |  | 0.000                    | 0.000420                         | 0.000420 | 0.0700                          |
| 45                                 |  | 0.070                    | 0.000605                         | 0.000656 | 0.0600                          |
| 50                                 |  | 0.070                    | 0.000913                         | 0.001260 | 0.0600                          |
| 55                                 |  | 0.070                    | 0.001470                         | 0.002205 | 0.0600                          |
| 60                                 |  | 0.200                    | 0.002339                         | 0.003983 | 0.0000                          |
| 65                                 |  | 0.200                    | 0.004120                         | 0.007014 | 0.0000                          |
| 70                                 |  | 1.000                    | 0.006515                         | 0.011092 | 0.0000                          |

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

\*\*The Withdrawal Rates above assume 3-5 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                    | 0.000109                         | 0.000079 | 0.0700                          |
| 30                                 |  | 0.000                    | 0.000142                         | 0.000103 | 0.0700                          |
| 35                                 |  | 0.000                    | 0.000163                         | 0.000163 | 0.0700                          |
| 40                                 |  | 0.000                    | 0.000222                         | 0.000222 | 0.0700                          |
| 45                                 |  | 0.070                    | 0.000345                         | 0.000373 | 0.0600                          |
| 50                                 |  | 0.070                    | 0.000504                         | 0.000697 | 0.0600                          |
| 55                                 |  | 0.070                    | 0.000748                         | 0.001123 | 0.0600                          |
| 60                                 |  | 0.200                    | 0.001018                         | 0.001734 | 0.0000                          |
| 65                                 |  | 0.200                    | 0.001504                         | 0.002562 | 0.0000                          |
| 70                                 |  | 1.000                    | 0.002488                         | 0.004236 | 0.0000                          |

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

\*\*The Withdrawal Rates above assume 3-5 years of service.

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

**General - Male**

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

*\*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                    | 0.050                           |
| 15  | 0.150                    | 0.050                           |
| 20  | 0.150                    | 0.050                           |
| 25  | 0.150                    | 0.050                           |
| 30  | 0.200                    | 0.050                           |
| 35  | 0.200                    | 0.050                           |
| 40  | 0.200                    | 0.050                           |
| 45  | 0.200                    | 0.050                           |
| 50  | 0.200                    | 0.050                           |

*\*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, 2018**

**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*