

**Stanislaus County
Employees' Retirement
Association**

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

Produced by Cheiron

February 2019

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February 20, 2019

Board of Retirement
Stanislaus County Employees' Retirement Association
832 12th Street, Suite 600
Modesto, CA 95353

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the Stanislaus County Employees' Retirement Association (StanCERA, the Fund, the Plan) as of June 30, 2018. This report contains information on the Plan's assets and liabilities. This report also discloses employer contribution levels and required disclosures for the Plan's CAFR. 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 StanCERA. This report is for the use of StanCERA and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of this report is not an intended user and is considered a third party.

Cheiron's report was prepared solely for StanCERA for the purposes described herein, except that the Plan auditor may rely on this report solely for the purpose of completing an audit related to the matters herein. It is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

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



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



Jonathan Chipko, FSA, FCA, MAAA, EA
Consulting Actuary

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

FOREWORD

Cheiron has performed the actuarial valuation of the Stanislaus 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 Plan's
 - Section II - Assets
 - Section III - Liabilities
 - Section IV - Contributions
 - Section V - Required CAFR Exhibits
- 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. The assumptions reflect our understanding of the likely future experience of the Plan and each of the assumptions represents a best estimate of future experience.

In preparing our report, we relied on information (some oral and some written) supplied by the StanCERA 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 Plan,
- Past and expected trends in the funding progress of the Plan, and
- Employer and employee contribution rates for Plan Year 2019-2020.

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 Plan.

A. Valuation Basis

This valuation determines the employer contributions required for the employers' fiscal years beginning July 1, 2019. The employers include the County of Stanislaus and related employers, the City of Ceres, and other participating Special Districts.

The Plan's funding policy is to collect contributions from the employers and employees equal to the sum of:

- The Normal Cost under the Entry Age Normal Cost Method,
- Amortization of the Unfunded Actuarial Liability (UAL), and
- The Fund's expected administrative expenses.

The UAL payment is determined as the amount needed to fund the outstanding UAL as of June 30, 2018 over a period of 18 years as a level percentage of pay.

This valuation was prepared based on the Plan provisions shown in Appendix C.

Actuarial experience studies are performed every three years. This valuation was performed based on the economic and demographic assumptions that were determined in the Actuarial Experience Study performed by Cheiron as of June 30, 2018 and reviewed by the Board on January 22, 2019. This valuation is the first to use the assumptions determined in the above experience study. A summary of the assumptions and methods used in the current valuation is shown in Appendix B.

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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 actuarially determined employer contribution rate decreased from 31.65% of payroll to 30.38% of payroll for the current valuation. The contribution rate does not reflect any phase-in of the impact of changes to the economic and demographic assumptions first adopted for the June 30, 2018 actuarial valuation.
- The Plan's funded ratio, the ratio of Actuarial Assets over Actuarial Liability, increased from 74.3% to 76.4%. Likewise, the Plan's funded ratio on a market value basis increased from 74.5% to 76.6%.
- The Unfunded Actuarial Liability (UAL) is the excess of the Plan's Actuarial Liability over the Actuarial Value of Assets. The Plan experienced a decrease in the UAL from \$679.9 million to \$648.8 million as of June 30, 2018. This decrease in UAL was largely due to investment gains and the assumption changes.
- During the year ending June 30, 2018, the return on Plan assets was 7.82% on a market value basis net of investment (but not administrative) expenses, as compared to the prior 7.25% assumption. The Actuarial Value of Assets recognizes 20% of the difference between the expected and actual return on the Market Value of Assets (MVA). This method of smoothing the asset gains and losses returned 7.88% on the smoothed value of assets, an actuarial asset gain of \$12.4 million. The gain in the Actuarial Value of Assets reflects the continued recognition of past investment gains and losses, which largely offset each other for the current valuation.
- During the 2017-18 Plan Year, the actuarial liabilities of the Plan increased more than expected, with a key factor being higher service and pay increases than expected for continuing actives, and higher Cost of Living Adjustments (COLAs) for members in pay status. These and other unexpected changes resulted in a liability loss of \$16.8 million.
- Overall participant membership increased compared to last year. There were 569 new hires and rehires during 2017-2018 and the total active population increased from 4,309 to 4,452, or 3.32%. Total projected payroll increased from \$269,544,436 to \$284,969,342, or 5.72%.
- The Actuarial Experience Study as of June 30, 2018 recommended changes to many of the actuarial assumptions used in this valuation, including a reduction in the discount rate from 7.25% to 7.00% and the use of less conservative assumptions related to future mortality improvement. The Retirement Board provided direction at its January 22, 2019 meeting to use the assumptions as summarized at that meeting for the June 30, 2018 valuation. The net impact of the updates to the assumptions was a \$37.8 million reduction in the actuarial liability, mostly due to the mortality changes.

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SECTION I – EXECUTIVE SUMMARY

In Tables I-1 and I-2, we summarize the key results of the valuation with respect to assets and liabilities, contributions and membership. The results are presented and compared for both the current and prior Plan year.

Table I-1			
Stanislaus County Employees' Retirement Association			
Summary of Key Valuation Results			
(in millions)			
Valuation Date	June 30, 2017	June 30, 2018	
Fiscal Year End	2019	2020	
Actuarial Liability	\$ 2,648.2	\$ 2,749.1	
Actuarial Value of Assets ¹	\$ 1,968.2	\$ 2,100.3	
Unfunded Actuarial Liability (Actuarial Value)	\$ 679.9	\$ 648.8	
Funding Ratio (Actuarial Value)	74.3%	76.4%	
Market Value of Assets ¹	\$ 1,973.8	\$ 2,105.1	
Unfunded Actuarial Liability (Market Value)	\$ 674.3	\$ 644.0	
Funding Ratio (Market Value)	74.5%	76.6%	
Net Employer Contribution Rate	31.65%	30.38%	

¹ Net of non-valuation reserves.

Table I-2			
Membership Total			
Item	June 30, 2017	June 30, 2018	% Change
Actives	4,309	4,452	3.3%
Current Inactives	1,071	1,105	3.2%
Retired Members	<u>3,746</u>	<u>3,856</u>	<u>2.9%</u>
Total Members	9,126	9,413	3.1%
Ratio of Retired Members to Active Members	86.9%	86.6%	
Active Member Payroll (FYE 2018/2019)	\$ 269,544,436	\$ 284,969,342	5.7%
Average Pay per Active	\$ 62,554	\$ 64,009	2.3%

The ratio of retired members to active members is a measure of the maturity of the plan. It shows how many retirees are supported by each active member. A higher ratio indicates a more mature plan and potentially higher risk since the retiree benefits are larger relative to the contribution

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SECTION I – EXECUTIVE SUMMARY

base, i.e. the active member payroll. Table I-2 shows that the ratio of retired members to active members decreased slightly this year due to an increase in the active workforce, but remains below 1.0, indicating the Plan is still relatively mature.

Assets and Liabilities

Table I-3 presents a comparison between the June 30, 2017 and June 30, 2018 StanCERA assets, liabilities, Unfunded Actuarial Liability, and funding ratios, both on a market and smoothed basis.

Table I-3			
Assets & Liabilities			
(in millions)			
Item	June 30, 2017	June 30, 2018	% Change
Actuarial Liability			
Actives	\$ 992.1	\$ 1,005.6	1.4%
Current Inactives	145.9	153.4	5.1%
Retired Members	<u>1,510.2</u>	<u>1,590.1</u>	<u>5.3%</u>
Total Actuarial Liability	\$ 2,648.2	\$ 2,749.1	3.8%
Market Value of Assets (MVA)	\$ 1,973.8	\$ 2,105.1	6.6%
Actuarial Value of Assets (AVA)	\$ 1,968.2	\$ 2,100.3	6.7%
Unfunded Actuarial Liability - MVA	\$ 674.3	\$ 644.0	-4.5%
Unfunded Actuarial Liability - AVA	\$ 679.9	\$ 648.8	-4.6%
Funding Ratio - MVA	74.5%	76.6%	2.1%
Funding Ratio - AVA	74.3%	76.4%	2.1%

Table I-3 indicates that the Actuarial Liability increased by 3.8% and the Actuarial Value of Assets increased by 6.7%, resulting in an increase in the funding ratio from 74.3% as of June 30, 2017 to 76.4% as of June 30, 2018. The increase in Actuarial Liability was offset by investment gains as well as decreases in liabilities from the new assumptions, which led to the accompanying increase in the funded status.

StanCERA employs a commonly used actuarial smoothing method on the market value that dampens market volatility. The Actuarial Value of Assets increased by slightly more than the market value because of the impact of deferred investment gains from prior years. The funding ratio measured on a Market Value of Assets basis was 76.6% as of June 30, 2018. Section II provides additional information explaining the development of the Actuarial Value of Assets.

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SECTION I – EXECUTIVE SUMMARY

Changes in UAL

The Unfunded Actuarial Liability (UAL) for StanCERA decreased by \$31.1 million, from \$679.9 million to \$648.8 million. Table I-4 below presents the specific components of the change in the UAL.

As noted above, the return on the actuarial assets used to compute the UAL and the employer contribution rate was 7.88% during the 2017-18 Plan Year. Investment returns greater than the prior assumed rate of 7.25% decreased the UAL by \$12.4 million.

Liability losses increased the UAL by \$16.8 million, driven by higher than expected service and pay increases for continuing actives, as well as higher than expected retiree COLAs.

Changes in assumptions decreased the UAL by \$37.8 million.

The UAL also increased by \$5.8 million due to contributions smaller than the actuarially determined amount. This is a result of the 12-month lag in the implementation of contribution rates and the phase-in of the impact of past assumption changes.

The expected change in the UAL due to the yearly amortization of the UAL balance – a decrease of \$3.6 million, as a result of the amortization schedule for the current year – combined with the above UAL changes to produce an overall decrease of \$31.1 million.

Table I-4	
Change in Unfunded Actuarial Liability	
Experience	in millions
1. Unfunded actuarial liability, 6/30/2017	\$ 679.9
2. Expected change in unfunded actuarial liability	\$ (3.6)
3. Unfunded decrease due to investment gain	(12.4)
4. Unfunded increase due to contribution shortfall	5.8
5. Unfunded increase due to liability loss	16.8
6. Unfunded decrease due to assumption changes	(37.8)
7. Total change in unfunded actuarial liability	<u>\$ (31.1)</u>
8. Unfunded actuarial liability, 6/30/2018	\$ 648.8

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Changes in Employer Contributions

Thus far, the experience of the 2017-18 Plan year has been presented in terms of the UAL and funded ratio. Table I-5 below summarizes the impact of actuarial experience and changes in assumptions on the employer contribution rate.

Table I-5 Employer Contribution Reconciliation				
Item	Total	Normal Cost	Amortization	Admin Expense
<i>FYE 2019 Net Employer Contribution Rate</i>	<i>31.65%</i>	<i>11.77%</i>	<i>18.94%</i>	<i>0.94%</i>
Change Due to Asset Gain	-0.35%	0.00%	-0.35%	0.00%
Change Due to Contribution Shortfall	0.16%	0.00%	0.16%	0.00%
Change Due to Demographic Changes	0.10%	-0.37%	0.47%	0.00%
Change Due to Effect of Payroll on Amortization	-0.46%	0.00%	-0.44%	-0.02%
Change Due to Assumption Changes	-0.72%	0.25%	-1.04%	0.07%
<i>FYE 2020 Net Employer Contribution Rate</i>	<i>30.38%</i>	<i>11.65%</i>	<i>17.74%</i>	<i>0.99%</i>

The impact of assumption changes from the Actuarial Experience Study as of June 30, 2018 are fully reflected in this valuation; no phase-in has been applied.

- Asset experience produced an investment gain on a smoothed basis, as described earlier. The smoothed gain decreased the contribution rate by 0.35% of pay.

The ratio of Actuarial to Market Value of Assets is 99.8%. There are now \$4.8 million in net deferred gains as of June 30, 2018, as well as \$19.8 million in a non-valuation Contingency Reserve.

- The Plan received a smaller contribution than the actuarially determined amount. The net impact of the shortfall was an increase in the employer contribution rate by 0.16% of pay.
- The demographic experience of the Plan – rates of retirement, death, disability, and termination, as well as salary and COLA changes – caused an increase in employer contribution rate of 0.10% of pay. Higher than expected service and pay increases for returning members was the largest factor contributing to an increase in the Unfunded Actuarial Liability and the associated amortization payment. New entrants and losses associated with new retirees and COLA increases also contributed to the loss. The increase in the amortization payment was offset somewhat by a reduction in the employer-paid Normal Cost as a result of the continued transition of the active workforce to membership in the new PEPRAs tiers, which reflect lower benefit levels for new hires.
- Overall payroll was higher than expected by about \$6.6 million. As a result, the unfunded liability amortization payment and administrative expenses were spread over a larger payroll base than expected, and the employer contribution rate decreased by 0.46% of pay.

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SECTION I – EXECUTIVE SUMMARY

- The impact of assumption changes decreased the employer cost by 0.72% of pay. The largest contributor to this decrease in cost was the set of new mortality assumptions.

Plan Risk

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

Table I-6 Asset to Payroll Ratio as of June 30, 2018	
Active Member Payroll	\$ 284,969,342
Assets (Market Value)	\$ 2,105,076,676
Ratio of Assets to Payroll	7.39
Ratio with 100% Funding	9.65

One of the most important measures of a plan's risk is the ratio of plan assets to payroll. The table above shows StanCERA's assets as a percentage of active member payroll. This ratio indicates the sensitivity of the Plan to the returns earned on Plan assets.

We note in the table that Plan assets currently are 7.39 times covered payroll for the Plan; as a point of reference, the median assets-to-payroll ratio for the '37 Act systems as a whole is almost exactly the same at around 7.4. As funding improves and the Plan reaches 100% funding, the ratio of asset to payroll will increase past nine times payroll, perhaps higher depending on the Plan's future demographic makeup.

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

On the other hand, consider the situation for StanCERA. Suppose StanCERA's assets lose 10% of their value in a year. Since they are assumed to earn 7.00%, there is an actuarial loss of 17.00% of Plan assets. Based on the current ratio of asset to payroll (739%), that means the loss in assets is about 126% of active payroll (739% of the 17.00% loss). There is only one source of funding to make up for this loss: contributions. Consequently, barring future offsetting investment gains, the employer has to make up the asset loss in additional future contributions. In this example of a one-year loss of 10%, this shortfall will eventually require an additional annual amortization payment in the vicinity of 10% of payroll if amortized over 18 years.

As the Plan matures and becomes better funded, the ratio of assets to payroll will increase. When assets are 965% of pay, the 10% loss discussed above will translate to a loss of over 164% of

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SECTION I – EXECUTIVE SUMMARY

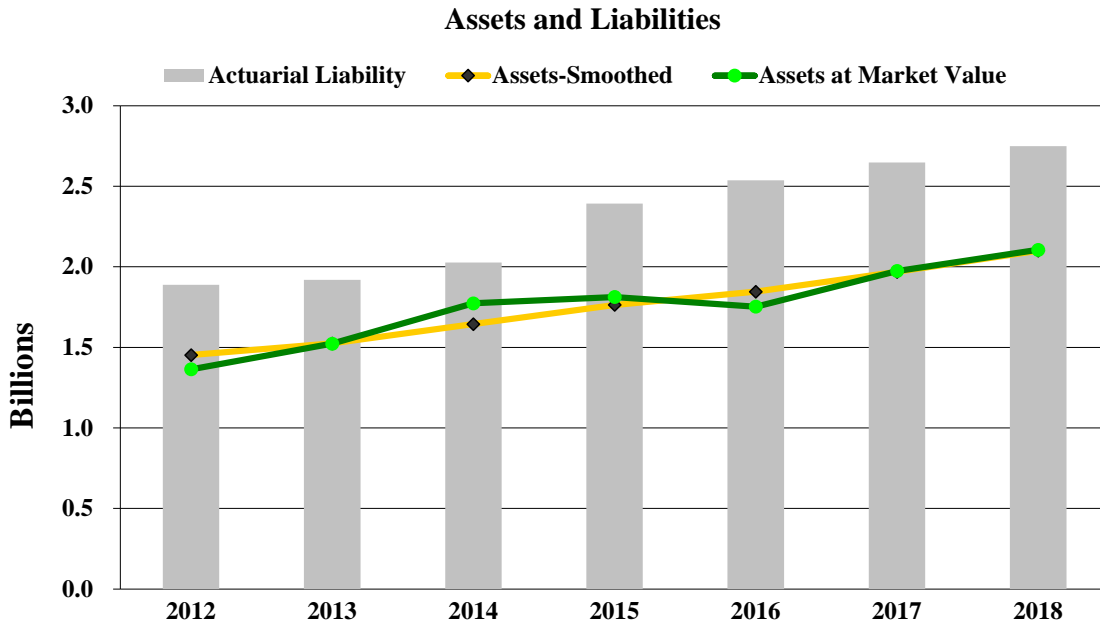
payroll, which when amortized over 18 years will increase the employer contribution by almost 13% of member pay. Therefore, the Plan is likely to become significantly more sensitive to market variation in the future than it is today.

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 more 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 table below the graph is the ratio of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio). The funded ratio has decreased from 76.9% in 2012 to 76.4% as of June 30, 2018. The large drop in the funded ratio in 2015 was primarily due to changes in assumptions. The funded ratio has increased from the 74.3% of last year because of investment gains and a reduction in liability estimates from the assumption changes reflected in this valuation.



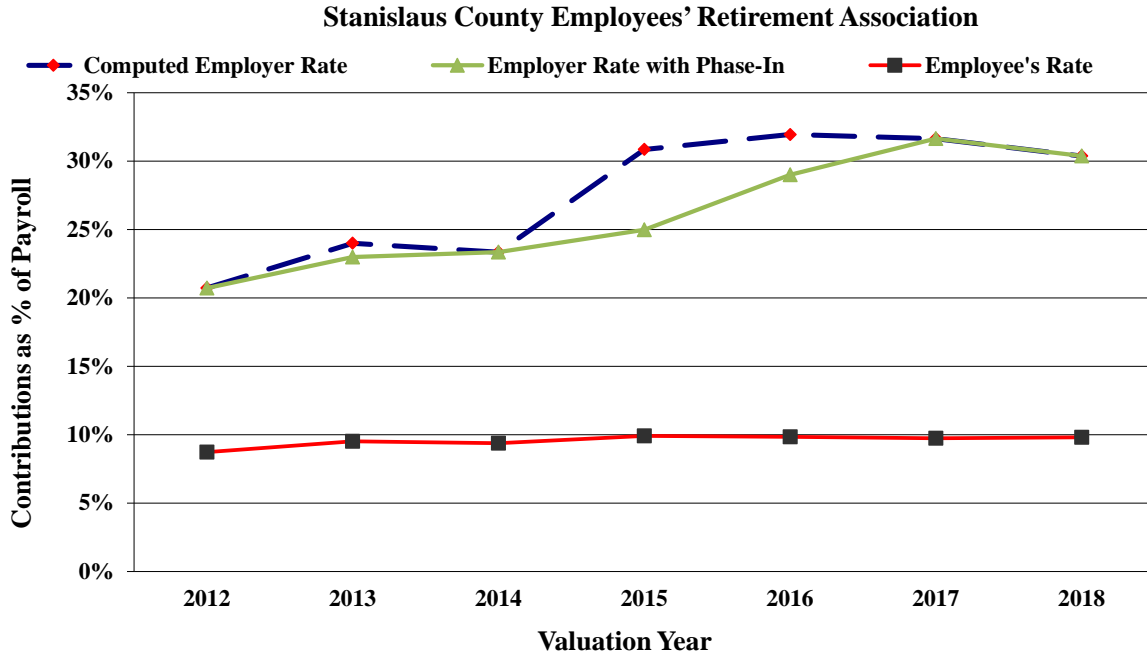
Valuation Year	2012	2013	2014	2015	2016	2017	2018
Funded Ratio	76.9%	79.4%	81.1%	73.7%	72.8%	74.3%	76.4%
UAL (Billions)	\$ 0.44	\$ 0.40	\$ 0.38	\$ 0.63	\$ 0.69	\$ 0.68	\$ 0.65

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SECTION I – EXECUTIVE SUMMARY

Contribution Trends

In the chart below, we present the historical trends for the StanCERA contribution rates. The employer contribution rates have risen since 2012, primarily as a result of changes to the actuarial assumptions and methods. The average employee contribution rates have also increased as the Plan's economic and demographic assumptions have changed. The assumption changes included this year have reduced the employer contribution rates slightly this year.



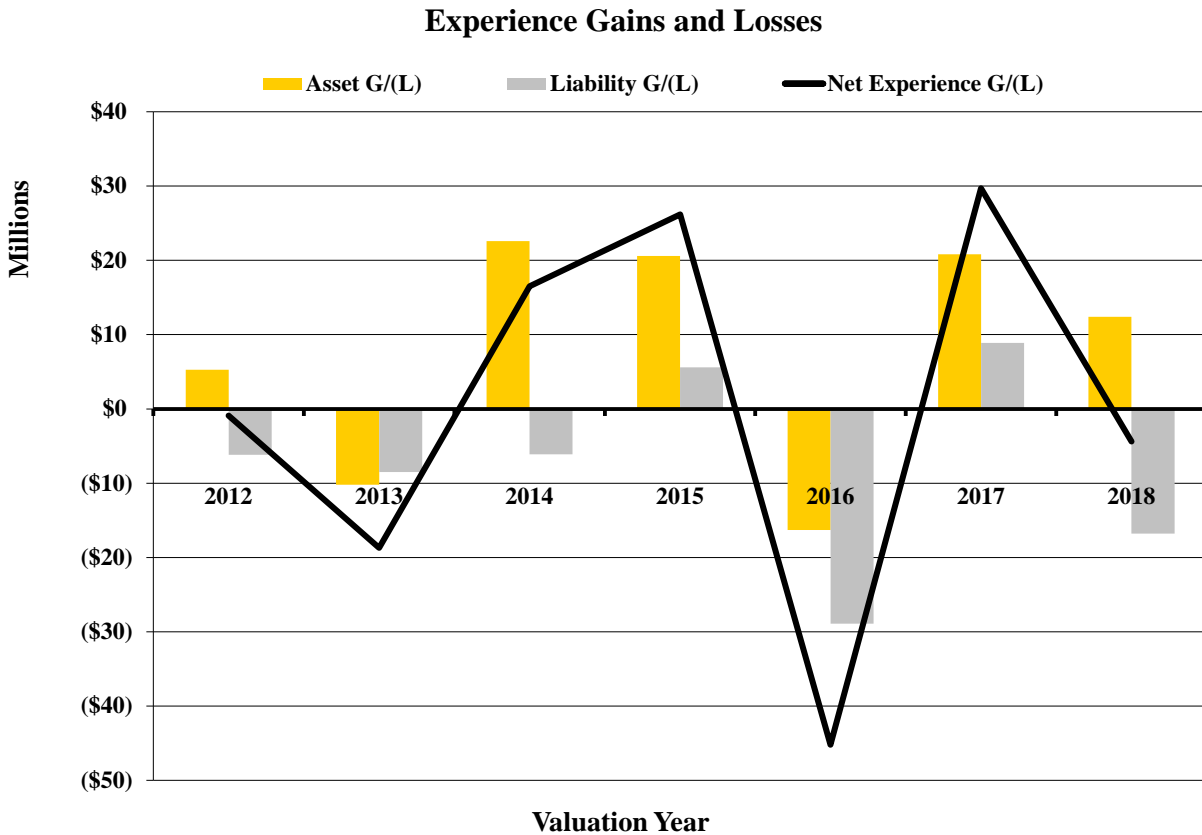
STANISLAUS COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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Gains and Losses

The following chart for StanCERA 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 StanCERA's assets and liabilities attributable to changes to actuarial methods, procedures or assumptions or Plan benefit changes.

From July 1, 2011 through the current valuation, the plan has experience both net gains and losses in individual years with a largely offsetting cumulative impact.



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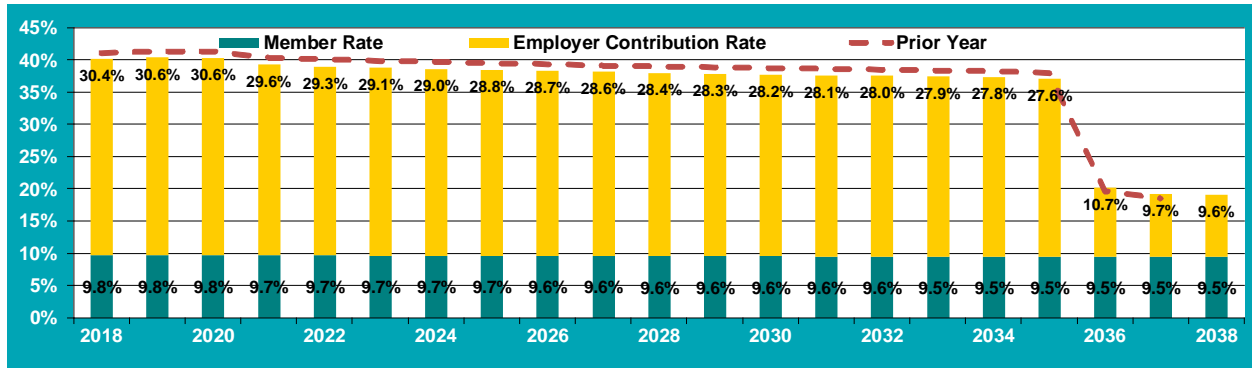
D. Future Expected Financial Trends

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 benefit security (assets over liabilities). All the projections in this section are based on the current investment return assumption of 7.00%. We have assumed future total payroll increases of 3.00% per year.

The graph below shows the expected employer and employee contribution rates based on achieving the 7.00% assumption **each year** for the next 20 years. This scenario is highly unlikely: even if the Plan does achieve an **average** return of 7.00% over this time period, the returns in each given year will certainly vary. The expected total contribution rates based on the prior year valuation as of June 30, 2017 are shown (in the dashed line) for comparison.

The contribution rate graph shows that employer contribution rates are expected to stay relatively stable until the current unfunded liability amortization period (18 years) ends.

Projection of Contributions, 7.00% Return Each Year



The total contribution rate (employer plus employee) is approximately 40% of member payroll for the June 30, 2018 valuation; it is expected to gradually decline to approximately 37% if all actuarial assumptions are met. The gradual decline is due to the expected hiring of new PEPRA members to replace the legacy employees as they retire, thus lowering the average normal cost of the Plan.

After 18 years, the total contribution rate is expected to drop due to the end of the current unfunded liability amortization period, to a level around 19% of pay, representing the expected Normal Cost plus administrative expenses. The end of the amortization period only affects the employer contribution rate. It has no impact on the employee contribution rate.

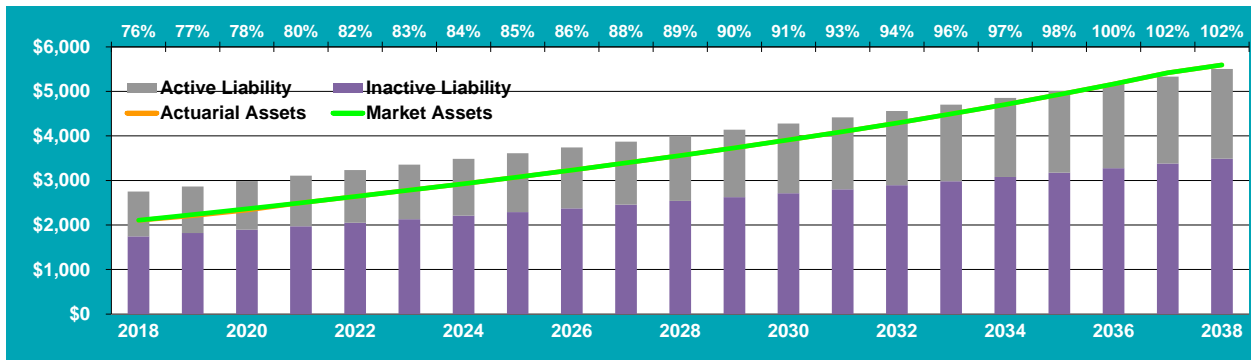
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SECTION I – EXECUTIVE SUMMARY

Asset and Liability Projections:

The following graph shows the projection of assets and liabilities assuming that assets will earn the 7.00% assumption each year during the projection period. The funded ratio shown is based on Actuarial Value of Assets. The Actuarial Value of Assets is less than the Market Value of Assets as of June 30, 2018; under the five-year smoothing policy the two are assumed to be equal past 2021 if there are no additional asset gains/losses.

Projection of Assets And Liabilities, 7.00% Return Each Year
(\$ millions)



The graph above shows that the projected funded status increases over the next 18 years to gradually reach 100%, as can be expected based on the amortization policy, assuming the actuarial assumptions are achieved. However, it is the **actual** return on Plan assets that will determine the future funding status and contribution rate to the Fund.

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SECTION II – ASSETS

Pension Plan assets play a key role in the financial operation of the Plan 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 Plan assets including:

- **Disclosure** of Plan 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 assessment of historical **investment performance versus inflation**, and
- An allocation of the unfunded liability between the **valuation subgroups**.

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. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not as suitable for long-range planning as are the Actuarial Value of Assets, which reflects smoothing of annual investment returns.

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

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SECTION II – ASSETS

Table II-1 Statement of Assets at Market Value		
Assets	Fiscal Year ending June 30, 2017	Fiscal Year ending June 30, 2018
Cash and Cash Equivalents	\$ 92,153,518	\$ 195,650,852
Total Cash and Cash Equivalents	\$ 92,153,518	\$ 195,650,852
Receivables		
Interest and Dividends	\$ 6,443,406	\$ 5,372,554
Contributions	5,039,247	5,897,011
Securities Transactions	<u>63,078,011</u>	<u>31,426,661</u>
Total Receivables	\$ 74,560,664	\$ 42,696,226
Fixed Assets		
Capitalized Software	\$ 64,686	\$ 32,344
Real Estate Occupied	1,669,945	1,650,968
Real Estate Leased	1,113,517	1,100,863
Other	<u>1,062,537</u>	<u>2,542,616</u>
Total Fixed Assets	\$ 3,910,685	\$ 5,326,791
Investments at Market Value		
Fixed Income	\$ 460,780,851	\$ 335,655,061
Equities	1,294,693,635	1,103,761,404
Collateral on Loaned Securities	140,584,293	85,288,212
Other	<u>166,288,705</u>	<u>488,072,923</u>
Total Investments	\$ 2,062,347,484	\$ 2,012,777,600
Liabilities		
Accounts Payable	\$ (11,953,339)	\$ (12,052,811)
Security Transactions Payable	(85,803,403)	(31,754,701)
Collateral Held for Loaned Securities	(140,584,293)	(85,288,212)
Other	<u>(408,005)</u>	<u>(395,000)</u>
Total Liabilities	\$ (238,749,040)	\$ (129,490,724)
Market Value of Assets	\$ 1,994,223,311	\$ 2,126,960,745

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

SECTION II – ASSETS

Changes in Market Value

The components of asset change are:

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

Table II-2 on the next page shows the components of change in the Market Value of Assets during the fiscal years ending June 30, 2017 and June 30, 2018.

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

SECTION II – ASSETS

**Table II-2
Changes in Market Values**

<u>Additions</u>	Fiscal Year ending June 30, 2017	Fiscal Year ending June 30, 2018
Contributions		
Employer's Contribution	\$ 63,024,560	\$ 76,966,471
Members' Contributions	25,463,745	26,746,289
Total Contributions	\$ 88,488,305	\$ 103,712,760
Net Investment Income		
Net Appreciation/(Depreciation) in		
Fair Value of Investments	\$ 216,142,516	\$ 124,664,847
Interest and Dividends	45,117,367	40,576,311
Commission Recapture	20,827	15,091
Other Investment Income	159,696	303,437
Total Investment Income	\$ 261,440,406	\$ 165,559,686
Investment Expense	(9,985,798)	(11,120,770)
Net Investment Income	\$ 251,454,608	\$ 154,438,916
Securities Lending Activities		
Securities Lending Income	\$ 1,221,133	\$ 784,420
Expenses from Securities Lending Activities	(366,036)	(235,137)
Net Securities Lending Income	855,097	549,283
Total Net Investment Income	\$ 252,309,705	\$ 154,988,199
Total Additions	\$ 340,798,010	\$ 258,700,959
<u>Deductions</u>		
Benefits	\$ 114,290,758	\$ 120,978,337
Refunds	2,553,100	2,193,779
Administrative Costs	2,644,554	2,791,409
Total Deductions	\$ 119,488,412	\$ 125,963,525
Net Increase/(Decrease)	\$ 221,309,598	\$ 132,737,434
Net Assets Beginning of Year	\$ 1,772,913,713	\$ 1,994,223,311
Net Assets End of Year	\$ 1,994,223,311	\$ 2,126,960,745
Approximate Return	14.36%	7.82%

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

SECTION II – ASSETS

Actuarial Value of Assets (AVA)

The Actuarial Value of Assets represents a “smoothed” value developed by the actuary to reduce the volatile results that could develop due to short-term fluctuations in the Market Value of Assets. For this Plan, the Actuarial Value of Assets is calculated on a modified market-related value. The Market Value of Assets is adjusted to recognize, over a five-year period, investment earnings which are greater than (or less than) the assumed investment return. However, in no event will the Actuarial Value of Assets be less than 80% or more than 120% of market value on the valuation date.

The Valuation Assets are the portion of the Actuarial Assets dedicated to funding the basic pension benefits. The Valuation Assets exclude the value of any non-valuation reserves, such as reserves established for legal contingencies. The Valuation Assets also exclude the value of any non-valuation contingency reserves, which have been established according to the Board's funding policy. In valuations prior to the June 30, 2014 valuation, a reserve associated with the Burial Allowance was excluded from the Valuation Assets; both the assets and liabilities associated with this benefit are included in this valuation.

The table on the following page shows the development of the Actuarial Asset and Valuation Assets values.

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

SECTION II – ASSETS

Table II-3	
Development of Actuarial Value of Assets for 6/30/2018	
Item	Total
1. Market Value as of 6/30/2017	\$ 1,994,223,311
2. Non-Investment Cash Flow for 2017-2018	(22,250,765)
3. Expected Return in 2017-2018	143,788,712
4. Expected Market Value as of 6/30/2018: (1 + 2 + 3)	\$ 2,115,761,258
5. Actual Return in 2017-2018	154,988,199
6. Actual Return Above Expected in 2017-2018: (5 - 3)	11,199,487
7. Market Value as of 6/30/2018	\$ 2,126,960,745
8. Deferred Recognition of Returns Above Expected	
A. 2017-2018 (80% of \$11,199,487)	8,959,590
B. 2016-2017 (60% of \$124,877,553)	74,926,532
C. 2015-2016 (40% of -\$163,175,725)	(65,270,290)
D. 2014-2015 (20% of -\$69,060,690)	(13,812,138)
E. Total	\$ 4,803,694
9. Preliminary Actuarial Value of Assets: (7 - 8e)	\$ 2,122,157,051
10. Corridor Limit	
A. 80% of Net Market Value	1,701,568,596
B. 120% of Net Market Value	2,552,352,894
11. Actuarial Value after Corridor as of 6/30/2018	\$ 2,122,157,051
12. Rate of Return on Actuarial Value of Assets	7.88%
13. Ratio of Actuarial Value to Market Value: (11 ÷ 7)	99.8%
14. Special (Non Valuation) Reserves:	
A. Health Insurance Reserves	0
B. Special COL Reserve	0
C. Legal Contingency Reserve	2,122,258
D. Tier 3 Disability Reserve	1,560
E. Contingency Reserve	19,760,251
F. Total Special Reserves (Market Value)	\$ 21,884,069
15. Adjusted Total Special Reserves (99.8% of Market, Except Contingency)	\$ 21,879,272
16. Pension Reserves at Actuarial Value (Valuation Assets): (11 - 15)	\$ 2,100,277,779

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

SECTION II – ASSETS

Historical Investment Performance

The table shows the historical annual asset returns on a Market Value, Actuarial Value, and Valuation Asset basis, as well as the increase in the Consumer Price Index (CPI) since 1997. Note that the returns prior to 2013 are expressed net of investment and administrative expenses; the returns for 2013 and all following years are expressed net of investment expenses only.

Table II-4 Net Return on Assets vs. Increase in Consumer Price Index				
Year Ended June 30	Net Return at Market Value	Net Return at Actuarial Value	Net Return at Valuation Assets	Increase in Consumer Price Index¹
1997	20.4%			2.3%
1998	13.4%			1.7%
1999	10.6%			2.0%
2000	6.3%			3.7%
2001	7.0%			3.2%
2002	-4.5%			1.1%
2003	5.2%		4.9%	2.1%
2004	6.1%		6.3%	3.3%
2005	8.2%		5.5%	2.5%
2006	9.9%		10.8%	4.3%
2007	16.0%	10.8%	0.6%	2.7%
2008	-8.5%	8.0%	16.7%	5.0%
2009	-17.2%	-9.6%	-9.4%	-1.4%
2010	15.6%	13.0%	14.7%	1.1%
2011	22.1%	3.5%	4.2%	3.6%
2012	0.1%	6.4%	6.5%	1.7%
2013	13.9%	7.0%	7.2%	1.8%
2014	18.0%	9.4%	9.5%	2.1%
2015	3.9%	9.1%	9.0%	0.1%
2016	-1.7%	6.3%	6.3%	1.0%
2017	14.4%	8.3%	8.4%	1.6%
2018	7.8%	7.9%	7.9%	2.9%
20-Year Compound Average	6.2%	N/A	N/A	2.2%
15-Year Compound Average	6.7%	N/A	6.8%	2.1%
10-Year Compound Average	7.1%	6.0%	6.3%	1.4%
5-Year Compound Average	8.2%	8.2%	8.2%	1.5%

¹ Based on All Urban Consumers - U.S. City Average, June indices.

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

SECTION II – ASSETS

Allocation of Unfunded Actuarial Liability by Valuation Subgroup

The following table shows the allocation of the Unfunded Actuarial Liability between the two valuation subgroups (County / Former County Members and City of Ceres / Special District Members). The Valuation Assets are reduced by the liability associated with the inactive members and the refundable contribution balances for active members, and the remaining assets are allocated to each subgroup based on their share of the active liability. These UAL balances are used to calculate each subgroup's amortization payment.

Table II-5			
Allocation of 6/30/2018 Unfunded Liability			
(in thousands)			
	County and Former County	Ceres and Other Districts	Total
1. Actuarial Value of Assets			\$ 2,100,278
2. Accumulated Employee Contributions	200,131	13,092	213,223
3. Inactive Actuarial Liability	1,668,185	75,304	1,743,489
4. Net Assets for Distribution [1 - 2 - 3]	1,468,054	88,396	\$ 1,556,450
5. Active Actuarial Liability	\$ 946,124	\$ 59,456	\$ 1,005,580
6. Allocation of Remaining Assets	94.09%	5.91%	100.00%
7. Remaining Assets	135,078	8,488	143,566
8. Total Assets for Actives [2 + 7]	335,209	21,581	356,789
9. Active Funded Ratio [8 ÷ 5]	35.4%	36.3%	35.5%
10. Actuarial Value of Assets [3 + 8]	\$ 2,003,393	\$ 96,885	\$ 2,100,278
11. AVA Funded Ratio [10 ÷ (3 + 5)]	76.63185%	71.89439%	76.4%
12. Unfunded Actuarial Liability [5 - 8]	\$ 610,915	\$ 37,875	\$ 648,790

Within the two valuation subgroups (County / Former County Members and City of Ceres / Special District Members), the Actuarial Value of Assets and the Unfunded Actuarial Liability are allocated between Safety and General based on each groups' share of the Actuarial Liability, as show in Table III-1.

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

SECTION III – LIABILITIES

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

- **Disclosure** of Plan liabilities at June 30, 2017 and June 30, 2018,
- Statement of **changes** in these liabilities during the year.

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 Plan obligations, represents the amount of money needed today to fully fund all benefits of the Plan both earned as of the valuation date and those to be earned in the future by current Plan participants, under the current Plan 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 Plan is called the **Entry Age Normal** (EAN) funding method.
- **Unfunded Actuarial Liability:** The excess of the Actuarial Liability over the Valuation 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**.

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

SECTION III – LIABILITIES

Table III-1 Present Value of Future Benefits and Actuarial Liability (in thousands)						
	General		Safety		June 30, 2018	June 30, 2017
	County and Former County	Ceres and Other Districts	County and Former County	Ceres and Other Districts	Total	Total
Present Value of Future Benefits						
Actives	\$ 1,036,710	\$ 35,746	\$ 361,040	\$ 49,562	\$ 1,483,059	\$ 1,408,712
Terminated Vested	106,117	6,057	31,244	9,993	153,411	145,934
Retirees	1,013,241	27,937	305,145	20,691	1,367,014	1,294,262
Disabled	47,272	2,906	77,224	5,852	133,254	132,166
Beneficiaries	58,785	328	29,158	1,539	89,810	83,723
Total StanCERA	\$ 2,262,124	\$ 72,975	\$ 803,811	\$ 87,638	\$ 3,226,548	\$ 3,064,797
Actuarial Liability						
Total Present Value of Benefits	\$ 2,262,124	\$ 72,975	\$ 803,811	\$ 87,638	\$ 3,226,548	\$ 3,064,797
Present Value of Future Normal Costs						
Employer Portion	178,384	6,506	68,418	8,437	261,745	229,976
Employee Portion	149,418	5,061	55,406	5,849	215,735	186,659
Actuarial Liability	\$ 1,934,322	\$ 61,408	\$ 679,987	\$ 73,351	\$ 2,749,068	\$ 2,648,162
Actuarial Value of Assets	\$ 1,482,307	\$ 44,149	\$ 521,086	\$ 52,736	\$ 2,100,278	\$ 1,968,231
Funded Ratio	76.6%	71.9%	76.6%	71.9%	76.4%	74.3%
Unfunded Actuarial Liability/(Surplus)	\$ 452,015	\$ 17,259	\$ 158,900	\$ 20,616	\$ 648,790	\$ 679,930

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

SECTION III – LIABILITIES

The table shows the Actuarial Liabilities for each of the valuation subgroups (General and Safety), split by members' status.

Table III-2					
Liabilities by Group as of June 30, 2018					
(in thousands)					
	General		Safety		Total
	County and Former County	Ceres and Other Districts	County and Former County	Ceres and Other Districts	
Actuarial Liability					
Actives	\$ 708,908	\$ 24,179	\$ 237,216	\$ 35,276	\$ 1,005,580
Terminated Vested	106,117	6,057	31,244	9,993	153,411
Retirees	1,013,241	27,937	305,145	20,691	1,367,014
Disabled	47,272	2,906	77,224	5,852	133,254
Beneficiaries	58,785	328	29,158	1,539	89,810
Total	\$ 1,934,322	\$ 61,408	\$ 679,987	\$ 73,351	\$ 2,749,068

**STANISLAUS 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 Plan assets resulting from:

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

Table III-3	
Development of 2018 Experience Gain/(Loss)	
(in millions)	
Item	Cost
1. Unfunded Actuarial Liability at June 30, 2017	\$ 679.9
2. Middle of year actuarial liability payment	(51.1)
3. Interest to end of year on 1 and 2	<u>47.5</u>
4. Expected Unfunded Actuarial Liability at June 30, 2018 (1+2+3)	\$ 676.3
5. Actual Unfunded Liability at June 30, 2018	<u>648.8</u>
6. Difference: (4 - 5)	\$ 27.5
7. Portion of difference due to:	
A. Investment experience	\$ 12.4
B. Contribution (shortfall)/excess	(5.8)
C. Assumption changes	37.8
D. New entrant loss	(2.4)
E. Other experience	<u>(14.5)</u>
F. Total	27.5

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

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 of contributions is needed to properly maintain the funding status of the Plan. 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 Plan, 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 three components to the total contribution: the **Normal Cost rate** (employee and employer), the **Unfunded Actuarial Liability rate** (UAL rate), and the **Administrative Expense** contribution.

The Normal Cost rate is determined in the following steps. First, an individual Normal Cost rate is determined by taking the value, as of entry age into the Plan, of each member's projected future benefits. This value is then divided by the value, also at entry age, of the member's expected future salary producing a Normal Cost rate that should remain relatively constant over a member's career.

The total Normal Cost is computed by adding the expected dollar amount of each active member's Normal Cost for the current year – known as the Individual Entry Age Method. The total Normal Cost is adjusted with interest to the middle of the year, to reflect the fact that the Normal Cost contributions are paid throughout the year as member payroll payments are made. Finally, the total Normal Cost rate is reduced by the member contribution rate to produce the employer Normal Cost rate. The member contribution rate for each subgroup is determined by adding the expected contributions for each member and dividing by the projected pay for each subgroup.

The EAN Actuarial Liability is calculated by subtracting the present value of future total Normal Cost from the Present Value of Future Benefits (as described on page 21).

The Unfunded Actuarial Liability (UAL) is the difference between the EAN Actuarial Liability and the Actuarial Value of Assets. The UAL payment is determined as the amount needed to fund the UAL over a closed 18-year period as a level percentage of payroll.

Beginning with the June 30, 2012 actuarial valuation, the Board adopted a policy of adding an amount equal to the expected annual administrative expense to the employer's required contribution. Prior to the June 30, 2012 actuarial valuation, the administrative expenses were included as an offset to the assumed earnings rate, and were shared between the employees and employers. For the June 30, 2018 valuation, this amount is estimated to be \$2.83 million.

For the impact of assumption changes calculated in the 2015 experience study, the Board adopted a three-year phase-in of the impact. For the assumptions used in this valuation developed from the 2018 experience study, a phase-in of the impact has not been implemented.

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

SECTION IV – CONTRIBUTIONS

The table below presents the calculation of the contribution rates for the Plan for this valuation and compares the total contribution rate with the prior year rate. The tables on the following pages contain more details on the calculation of the UAL amortization payments, as well as details on the calculation of the contribution rates for each group and tier.

**Table IV-1
Development of the Net Employer Contribution Rate as of June 30, 2018 for FYE 2020**

	General		June 30, 2018 Safety		COMPOSITE	June 30, 2017 COMPOSITE
	County and Former County	Ceres and Other Districts	County and Former County	Ceres and Other Districts		
	1. Total Normal Cost Rate	19.33%	20.91%	28.75%	31.05%	21.47%
2. Member Contribution Rate	<u>9.00%</u>	<u>9.10%</u>	<u>12.73%</u>	<u>12.96%</u>	<u>9.82%</u>	<u>9.75%</u>
3. Employer Normal Cost Rate (1-2)	10.33%	11.81%	16.02%	18.09%	11.65%	11.77%
4. UAL Amortization	16.33%	18.24%	22.27%	25.18%	17.74%	18.94%
5. Administrative Expense Rate	<u>0.90%</u>	<u>1.01%</u>	<u>1.29%</u>	<u>1.46%</u>	<u>0.99%</u>	<u>0.94%</u>
6. Net Employer Contribution Rate (3+4+5)	27.56%	31.06%	39.58%	44.73%	30.38%	31.65%

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

SECTION IV – CONTRIBUTIONS

Table IV-2 contains the details of the calculations of the UAL rates for the Plan and its subgroups.

Table IV-2 Development of UAL Amortization Rates					
	General		Safety		TOTAL
	County and Former County	Ceres and Other Districts	County and Former County	Ceres and Other Districts	
Salary Scale:					
2019+	3.00%	3.00%	3.00%	3.00%	N/A
Amortization Factor	12.8347	12.8347	12.8347	12.8347	N/A
Payroll	\$ 215,622,108	\$ 7,370,691	\$ 55,596,946	\$ 6,379,597	\$ 284,969,342
Unfunded Actuarial Liability (AVA)	\$ 452,015,220	\$ 17,259,123	\$ 158,900,278	\$ 20,615,846	\$ 648,790,467
UAL Amortization	\$ 35,218,174	\$ 1,344,722	\$ 12,380,507	\$ 1,606,257	\$ 50,549,660
UAL Amortization Rate	16.33%	18.24%	22.27%	25.18%	17.74%

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

SECTION IV – CONTRIBUTIONS

Tables IV-3 and IV-4 contain the calculations of the employer contribution rates for each group and tier.

Table IV-3							
Development of the General Member Contribution Rate as of June 30, 2018 for FYE 2020							
	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	PEPRA	TOTAL
<u>County and Former County</u>							
A. Total Normal Cost Rate	22.24%	18.46%	3.17%	17.33%	20.85%	17.27%	19.33%
B. Member Contribution Rate	<u>8.61%</u>	<u>8.30%</u>	<u>0.00%</u>	<u>1.21%</u>	<u>9.45%</u>	<u>8.63%</u>	9.00%
C. Employer Normal Cost Rate (A-B)	13.63%	10.16%	3.17%	16.12%	11.40%	8.64%	10.33%
D. UAL Amortization Rate	16.33%	16.33%	16.33%	16.33%	16.33%	16.33%	16.33%
E. Administrative Expense Rate	<u>1.01%</u>	<u>0.89%</u>	<u>0.66%</u>	<u>1.10%</u>	<u>0.94%</u>	<u>0.84%</u>	0.90%
F. Net June 30, 2018 Contribution Rate (C+D+E)	30.97%	27.38%	20.16%	33.55%	28.67%	25.81%	27.56%
<u>Ceres and Other Districts</u>							
A. Total Normal Cost Rate		16.91%		0.00%	22.20%	18.83%	20.91%
B. Member Contribution Rate		<u>8.08%</u>		<u>0.00%</u>	<u>8.98%</u>	<u>9.41%</u>	9.10%
C. Employer Normal Cost Rate (A-B)		8.83%		0.00%	13.22%	9.42%	11.81%
D. UAL Amortization Rate		18.24%		18.24%	18.24%	18.24%	18.24%
E. Administrative Expense Rate		<u>0.91%</u>		<u>0.62%</u>	<u>1.06%</u>	<u>0.93%</u>	1.01%
F. Net June 30, 2018 Contribution Rate (C+D+E)		27.98%		18.86%	32.52%	28.59%	31.06%

Administrative expenses allocated based on projected Employer Normal Cost and UAL Amortization contributions. See Table IV-5.

For Ceres and the other Districts, the remaining Tier 4 General member is assumed to retire immediately, therefore there is no Normal Cost for this member; only a UAL payment is calculated for this tier.

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

SECTION IV – CONTRIBUTIONS

Table IV-4					
Development of the Safety Member Contribution Rate as of June 30, 2018 for FYE 2020					
	Tier 2	Tier 4	Tier 5	PEPRA	TOTAL
<u>County and Former County</u>					
A. Total Normal Cost Rate	26.89%	0.00%	31.81%	24.66%	28.75%
B. Member Contribution Rate	<u>12.21%</u>	<u>0.00%</u>	<u>13.07%</u>	<u>12.33%</u>	<u>12.73%</u>
C. Employer Normal Cost Rate (A-B)	14.68%	0.00%	18.74%	12.33%	16.02%
D. UAL Amortization Rate	22.27%	22.27%	22.27%	22.27%	22.27%
E. Administrative Expense Rate	<u>1.25%</u>	<u>0.75%</u>	<u>1.38%</u>	<u>1.17%</u>	<u>1.29%</u>
F. Net June 30, 2018 Contribution Rate (C+D+E)	38.20%	23.02%	42.39%	35.77%	39.58%
<u>Ceres and Other Districts</u>					
A. Total Normal Cost Rate			31.59%	28.22%	31.05%
B. Member Contribution Rate			<u>12.74%</u>	<u>14.11%</u>	<u>12.96%</u>
C. Employer Normal Cost Rate (A-B)			18.85%	14.11%	18.09%
D. UAL Amortization Rate			25.18%	25.18%	25.18%
E. Administrative Expense Rate			<u>1.49%</u>	<u>1.33%</u>	<u>1.46%</u>
F. Net June 30, 2018 Contribution Rate (C+D+E)			45.52%	40.62%	44.73%

Administrative expenses allocated based on projected Employer Normal Cost and UAL Amortization contributions. See Table IV-6.

For the County, the remaining Tier 4 Safety member is assumed to retire immediately, therefore there is no Normal Cost for this member; only a UAL payment is calculated for this tier.

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

SECTION IV – CONTRIBUTIONS

Tables IV-5 and IV-6 show the allocation of the administrative expense for each group and tier. The administrative expense is allocated to each group and tier based on their share of the projected employer contributions prior to inclusion of the administrative expense.

Table IV-5 Development of the General Member Administrative Expense Rate as of June 30, 2018 for FYE 2020							
	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5	PEPRA	TOTAL
County and Former County							
A. Projected Payroll for FYE 2020	\$ 48,552	\$ 15,494,586	\$ 625,200	\$ 1,384,233	\$ 120,921,317	\$ 77,148,220	\$ 215,622,108
B. Employer Normal Cost Rate	13.63%	10.16%	3.17%	16.12%	11.40%	8.64%	
C. UAL Amortization Rate	<u>16.33%</u>	<u>16.33%</u>	<u>16.33%</u>	<u>16.33%</u>	<u>16.33%</u>	<u>16.33%</u>	
D. Employer Contribution Rate Prior to Administrative Expense (B+C)	29.96%	26.49%	19.50%	32.45%	27.73%	24.97%	
E. Projected Employer Contribution for FYE 2020 Prior to Administrative Expense							
1. Normal Cost (A*B)	\$ 6,617	\$ 1,574,250	\$ 19,819	\$ 223,139	\$ 13,785,030	\$ 6,665,607	\$ 22,274,462
2. UAL Amortization (A*C)	<u>7,929</u>	<u>2,530,266</u>	<u>102,095</u>	<u>226,045</u>	<u>19,746,451</u>	<u>12,598,304</u>	35,211,090
3. Total Prior to Administrative Expense (A*D)	<u>\$ 14,546</u>	<u>\$ 4,104,516</u>	<u>\$ 121,914</u>	<u>\$ 449,184</u>	<u>\$ 33,531,481</u>	<u>\$ 19,263,911</u>	\$ 57,485,552
F. Allocated Administrative Expense	\$ 491	\$ 138,512	\$ 4,114	\$ 15,158	\$ 1,131,558	\$ 650,083	\$ 1,939,916
G. Administrative Expense Rate (F÷A)	1.01%	0.89%	0.66%	1.10%	0.94%	0.84%	
H. Projected Employer Contribution for FYE 2020 Due to Administrative Expense (A*G)	\$ 490	\$ 137,902	\$ 4,126	\$ 15,227	\$ 1,136,660	\$ 648,045	\$ 1,942,450
Ceres and Other Districts							
A. Projected Payroll for FYE 2020		\$ 238,252		\$ 57,614	\$ 4,641,150	\$ 2,433,675	\$ 7,370,691
B. Employer Normal Cost Rate		8.83%		0.00%	13.22%	9.42%	
C. UAL Amortization Rate		<u>18.24%</u>		<u>18.24%</u>	<u>18.24%</u>	<u>18.24%</u>	
D. Employer Contribution Rate Prior to Administrative Expense (B+C)		27.07%		18.24%	31.46%	27.66%	
E. Projected Employer Contribution for FYE 2020 Prior to Administrative Expense							
1. Normal Cost (A*B)		\$ 21,038		\$ 0	\$ 613,560	\$ 229,253	\$ 863,851
2. UAL Amortization (A*C)		<u>43,457</u>		<u>10,509</u>	<u>846,546</u>	<u>443,902</u>	1,344,414
3. Total Prior to Administrative Expense (A*D)		<u>\$ 64,495</u>		<u>\$ 10,509</u>	<u>\$ 1,460,106</u>	<u>\$ 673,155</u>	\$ 2,208,265
F. Allocated Administrative Expense		\$ 2,176		\$ 355	\$ 49,273	\$ 22,716	\$ 74,520
G. Administrative Expense Rate (F÷A)		0.91%		0.62%	1.06%	0.93%	
H. Projected Employer Contribution for FYE 2020 Due to Administrative Expense (A*G)		\$ 2,168		\$ 357	\$ 49,196	\$ 22,633	\$ 74,354

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

SECTION IV – CONTRIBUTIONS

Table IV-6 Development of the Safety Member Administrative Expense Rate as of June 30, 2018 for FYE 2020					
	Tier 2	Tier 4	Tier 5	PEPRA	TOTAL
<u>County and Former County</u>					
A. Projected Payroll for FYE 2020	\$ 3,238,853	\$ 92,352	\$ 30,829,765	\$ 21,435,976	\$ 55,596,946
B. Employer Normal Cost Rate	14.68%	0.00%	18.74%	12.33%	
C. UAL Amortization Rate	<u>22.27%</u>	<u>22.27%</u>	<u>22.27%</u>	<u>22.27%</u>	
D. Employer Contribution Rate					
Prior to Administrative Expense (B+C)	36.95%	22.27%	41.01%	34.60%	
E. Projected Employer Contribution for FYE 2020					
Prior to Administrative Expense					
1. Normal Cost (A*B)	\$ 475,463	\$ 0	\$ 5,777,498	\$ 2,643,056	\$ 8,896,017
2. UAL Amortization (A*C)	<u>721,293</u>	<u>20,567</u>	<u>6,865,789</u>	<u>4,773,792</u>	<u>12,381,441</u>
3. Total Prior to Administrative Expense (A*D)	\$ 1,196,756	\$ 20,567	\$ 12,643,287	\$ 7,416,848	\$ 21,277,458
F. Allocated Administrative Expense	\$ 40,386	\$ 694	\$ 426,662	\$ 250,290	\$ 718,032
G. Administrative Expense Rate (F÷A)	1.25%	0.75%	1.38%	1.17%	
H. Projected Employer Contribution for FYE 2020					
Due to Administrative Expense (A*G)	\$ 40,486	\$ 693	\$ 425,451	\$ 250,801	\$ 717,431
<u>Ceres and Other Districts</u>					
A. Projected Payroll for FYE 2020			\$ 5,357,832	\$ 1,021,765	\$ 6,379,597
B. Employer Normal Cost Rate			18.85%	14.11%	
C. UAL Amortization Rate			<u>25.18%</u>	<u>25.18%</u>	
D. Employer Contribution Rate					
Prior to Administrative Expense (B+C)			44.03%	39.29%	
E. Projected Employer Contribution for FYE 2020					
Prior to Administrative Expense					
1. Normal Cost (A*B)			\$ 1,009,951	\$ 144,171	\$ 1,154,122
2. UAL Amortization (A*C)			<u>1,349,102</u>	<u>257,280</u>	<u>1,606,382</u>
3. Total Prior to Administrative Expense (A*D)			\$ 2,359,053	\$ 401,451	\$ 2,760,504
F. Allocated Administrative Expense			\$ 79,609	\$ 13,547	\$ 93,156
G. Administrative Expense Rate (F÷A)			1.49%	1.33%	
H. Projected Employer Contribution for FYE 2020					
Due to Administrative Expense (A*G)			\$ 79,832	\$ 13,589	\$ 93,421

**STANISLAUS COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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SECTION V – REQUIRED CAFR EXHIBITS

The GASB adopted Statement Nos. 67 and 68, which replaced GASB Statement Nos. 25, and 27. GASB 67 is effective for periods beginning after June 15, 2013 (first effective June 30, 2014 for the Plan) and GASB 68 is 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 new GASB requirements can be found in the StanCERA 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 (formerly referred to as the Solvency Test) disclosure and Actuarial Gain/Loss exhibit.

Schedule of Funded Liabilities by Type

The Schedule of Funded Liabilities by Type test shows the portion of actuarial liabilities for active member contributions, inactive members, and the employer financed portion of the active members that are covered by the Actuarial Value of Assets.

The Accrued Liability is determined assuming that the Plan is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Beginning June 30, 2018, liabilities are discounted at the assumed valuation interest rate of 7.00%.

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

SECTION V – REQUIRED CAFR EXHIBITS

Table V-1									
SCHEDULE OF FUNDED LIABILITIES BY TYPE									
(dollars in thousands)									
Valuation Date June 30,	(1)	(2)	(3)	Actuarial Accrued Liabilities	Valuation Assets	Portion of Actuarial Liabilities Covered by Reported Assets			
	Active Member Contributions	Retirees And Beneficiaries	Active And Terminated Members			(1)	(2)	(3)	
2003	\$ 176,622	\$ 455,784	\$ 325,689	\$ 958,095	\$ 928,022	100%	100%	91%	
2004	166,806	518,922	349,617	1,035,345	993,180	100%	100%	88%	
2005	205,556	551,810	358,994	1,116,310	1,049,691	100%	100%	81%	
2006 ¹	219,907	619,109	355,888	1,194,904	1,154,048	100%	100%	89%	
2008 ²	272,657	739,838	536,329	1,548,824	1,317,167	100%	100%	57%	
2009	298,342	781,082	574,292	1,653,716	1,171,767	100%	100%	16%	
2010	323,940	829,323	584,561	1,737,824	1,325,801	100%	100%	30%	
2011	337,201	897,384	523,133	1,757,718	1,372,046	100%	100%	26%	
2012	351,569	987,546	549,598	1,888,713	1,451,764	100%	100%	20%	
2013 ³	191,968	1,065,792	661,466	1,919,227	1,524,076	100%	100%	40%	
2014	193,301	1,144,734	688,335	2,026,371	1,644,077	100%	100%	44%	
2015	196,074	1,337,781	857,667	2,391,522	1,763,629	100%	100%	27%	
2016	200,960	1,427,166	908,941	2,537,067	1,845,764	100%	100%	24%	
2017	206,386	1,510,151	931,625	2,648,162	1,968,231	100%	100%	27%	
2018	213,223	1,590,078	945,767	2,749,068	2,100,278	100%	100%	31%	

¹ Results recalculated, reflecting Level 1 assumption changes (new retirement, termination and withdrawal decrements) & new EFI EAN methodology.

² Reflects transfer as of June 30, 2008 of \$50 million from Non-Valuation to Valuation Reserves.

³ Reflects change to include only refundable contribution balance.

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

SECTION V – REQUIRED CAFR EXHIBITS

Table V-2 displays the historical experience of gains and losses for the Plan. Each year there will be a gain or loss due to both assets and liabilities. In addition, there can be gains or losses due to changes in plan provisions or due to the adoption of new assumptions and methods. This year there is a gain due to higher than expected investment returns and the adoption of new assumptions, and a loss due to plan experience.

Table V-2					
Actuarial (Gains)/Losses					
(Change in UAAL beyond expected)					
Plan Year Ending	Asset Sources	Liability Sources	Total	Changes in Plan Provisions	Changes in Assumptions/Methods
6/30/2004	\$ 8,536,049	\$ 12,492,070	\$ 21,028,119	\$ 0	\$ (2,088,246)
6/30/2005	26,573,640	11,238,430	37,812,070	0	0
6/30/2006	(27,756,878)	21,366,204	(6,390,674)	0	(14,845,293)
6/30/2007 ¹	86,178,774	0	86,178,774	0	134,470,779
6/30/2008	(50,709,169)	67,324,195	16,615,026	0	0
6/30/2009	228,905,354	12,996,828	241,902,182	0	0
6/30/2010	(76,507,113)	37,492,978	(39,014,135)	0	(51,743,766)
6/30/2011	49,205,018	(2,387,353)	46,817,665	0	(72,085,966)
6/30/2012	(5,283,786)	6,191,029	907,243	0	52,606,350
6/30/2013	10,200,000	8,500,000	18,700,000	0	(63,400,000)
6/30/2014	(22,600,000)	6,100,000	(16,500,000)	0	400,000
6/30/2015	(20,600,000)	(5,600,000)	(26,200,000)	0	269,800,000
6/30/2016 ²	16,300,000	28,900,000	45,200,000	0	0
6/30/2017	(20,800,000)	(8,900,000)	(29,700,000)	0	0
6/30/2018	(12,400,000)	16,800,000	4,400,000	0	(37,800,000)

¹ Actuarial valuation was not performed for fiscal year ending June 30, 2007.

² Changes due to Actuarial Audit included as Liability Loss of \$700,000.

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

APPENDIX A – MEMBERSHIP INFORMATION

The data for this valuation was provided by StanCERA as of June 30, 2018. Cheiron did not audit any of the data. However, 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.

	<u>General Members</u>		<u>Safety Members</u>		<u>Total</u>	
	<u>7/1/2017</u>	<u>7/1/2018</u>	<u>7/1/2017</u>	<u>7/1/2018</u>	<u>7/1/2017</u>	<u>7/1/2018</u>
Active Participants						
Number	3,552	3,658	757	794	4,309	4,452
Average Age	45.02	44.80	37.73	37.44	43.74	43.49
Average Service	10.59	10.44	10.06	9.82	10.50	10.33
Average Pay (does not reflect impact of furloughs)	\$ 56,801	\$ 57,933	\$ 71,843	\$ 74,100	\$ 59,444	\$ 60,817
Service Retired						
Number	2,614	2,694	390	413	3,004	3,107
Average Age	69.90	70.13	64.84	64.81	69.24	69.42
Average Annual Total Benefit	\$ 30,139	\$ 30,912	\$ 55,279	\$ 56,445	\$ 33,403	\$ 34,306
Beneficiaries						
Number	338	348	93	96	431	444
Average Age	72.84	72.59	66.26	67.11	71.42	71.41
Average Annual Total Benefit	\$ 17,694	\$ 18,617	\$ 29,212	\$ 30,886	\$ 20,179	\$ 21,270
Duty Disabled						
Number	101	96	125	127	226	223
Average Age	68.86	68.65	58.33	58.71	63.04	62.99
Average Annual Total Benefit	\$ 25,421	\$ 25,940	\$ 38,340	\$ 39,182	\$ 32,566	\$ 33,482
Ordinary Disabled						
Number	78	75	7	7	85	82
Average Age	64.04	64.04	59.00	60.00	63.62	63.70
Average Annual Total Benefit	\$ 17,127	\$ 17,686	\$ 23,703	\$ 24,414	\$ 17,669	\$ 18,261
Total In Pay						
Number	3,131	3,213	615	643	3,746	3,856
Average Age	70.04	70.21	63.66	63.90	68.99	69.15
Average Annual Total Benefit	\$ 28,319	\$ 29,123	\$ 47,535	\$ 48,871	\$ 31,474	\$ 32,416
Terminated Vested						
Number	416	396	80	74	496	470
Average Age	49.75	49.60	43.19	43.62	48.69	48.66
Average Service	10.46	10.48	9.71	9.75	10.34	10.37
Transfers						
Number	424	470	151	165	575	635
Average Age	46.42	46.34	41.76	41.42	45.20	45.06
Average Service	6.96	7.17	7.22	7.21	7.03	7.18
Total Inactives						
Number	840	866	231	239	1,071	1,105
Average Age	48.07	47.83	42.26	42.10	46.81	46.59
Average Service	8.69	8.69	8.08	7.99	8.56	8.54

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

APPENDIX A – MEMBERSHIP INFORMATION

Plan Year Ending	Added During Year	Allowance Added	Removed During Year	Allowance Removed	At End of Year	Annual Allowance	% Increase in Retiree Allowance	Average Annual Allowance
2008	369	\$ 9,084,777	(148)	\$ (1,731,738)	2,666	\$ 63,296,000	19.18%	\$ 23,742
2009	156	\$ 2,168,425	(71)	\$ (647,870)	2,751	\$ 66,720,003	5.41%	\$ 24,253
2010	159	\$ 3,349,900	(80)	\$ (751,427)	2,830	\$ 71,464,735	7.11%	\$ 25,334
2011	263	\$ 4,724,416	(78)	\$ (1,194,042)	3,015	\$ 74,826,404	4.70%	\$ 25,732
2012	226	\$ 3,565,634	(99)	\$ (978,729)	3,142	\$ 80,157,222	7.12%	\$ 26,737
2013	198	\$ 6,036,138	(91)	\$ (1,144,584)	3,249	\$ 89,975,736	12.25%	\$ 27,694
2014	222	\$ 6,703,273	(86)	\$ (1,725,066)	3,385	\$ 96,405,454	7.15%	\$ 28,480
2015	237	\$ 7,778,716	(83)	\$ (2,043,313)	3,539	\$ 104,052,097	7.93%	\$ 29,402
2016	211	\$ 7,066,750	(99)	\$ (2,160,689)	3,651	\$ 111,260,240	6.93%	\$ 30,474
2017	202	\$ 6,749,973	(107)	\$ (2,471,229)	3,746	\$ 117,901,627	5.97%	\$ 31,474
2018	233	\$ 7,555,825	(123)	\$ (3,109,178)	3,856	\$ 124,995,337	6.02%	\$ 32,416

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

APPENDIX A – MEMBERSHIP INFORMATION

Active and Vested Participant Data as of July 1, 2018

	County and Former County						Ceres and Other Districts						Total County and Former County, Ceres and Other Districts	
	General Members		Safety Members		Total		General Members		Safety Members		Total		7/1/2017	7/1/2018
	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018		
Active Participants														
Number	3,429	3,536	675	721	4,104	4,257	123	122	82	73	205	195	4,309	4,452
Average Age	44.97	44.76	37.58	37.18	43.76	43.48	46.33	45.97	38.95	40.10	43.38	43.77	43.74	43.49
Average Service	10.54	10.41	9.92	9.54	10.44	10.26	12.08	11.29	11.26	12.57	11.75	11.77	10.50	10.33
Average Pay ¹	\$ 56,662	\$ 57,946	\$ 70,581	\$ 73,132	\$ 58,952	\$ 60,518	\$ 60,674	\$ 57,557	\$ 82,237	\$ 83,657	\$ 69,299	\$ 67,328	\$ 59,444	\$ 60,817
Terminated Vested														
Number	399	380	69	64	468	444	17	16	11	10	28	26	496	470
Average Age	49.79	49.57	43.41	43.78	48.85	48.74	48.59	50.31	41.82	42.60	45.93	47.35	48.69	48.66
Average Service	10.41	10.46	9.69	9.72	10.31	10.36	11.46	10.98	9.84	9.94	10.82	10.58	10.34	10.37
Transfers														
Number	395	432	121	130	516	562	29	38	30	35	59	73	575	635
Average Age	46.75	46.71	41.36	40.95	45.49	45.37	41.86	42.18	43.40	43.20	42.64	42.67	45.20	45.06
Average Service	6.86	7.08	6.80	6.81	6.85	7.01	8.28	8.29	8.92	8.70	8.61	8.48	7.03	7.18
Total Inactives														
Number	794	812	190	194	984	1,006	46	54	41	45	87	99	1,071	1,105
Average Age	48.28	48.05	42.10	41.88	47.09	46.86	44.35	44.59	42.98	43.07	43.70	43.90	46.81	46.59
Average Service	8.65	8.66	7.85	7.77	8.49	8.49	9.46	9.09	9.16	8.97	9.32	9.03	8.56	8.54

¹ All payroll figures shown are annual.



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

APPENDIX A – MEMBERSHIP INFORMATION

County and Former County Members

	General Members												Safety Members						
	Tier 1		Tier 2		Tier 3		Tier 4		Tier 5		PEPRA		Tiers 1 & 4		Tiers 2 & 5		PEPRA		
	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	
Active Participants																			
Number	1	1	232	233	13	11	18	14	1,911	1,773	1,254	1,504	1	1	417	391	257	329	
Average Age	58.00	59.00	40.70	41.70	53.85	53.18	61.56	62.64	50.22	50.88	37.43	37.79	63.00	64.00	42.72	43.37	29.14	29.74	
Average Service	18.76	19.80	6.39	7.62	19.11	19.74	35.92	37.44	16.31	17.23	2.05	2.48	22.69	23.73	14.69	15.43	2.12	2.49	
Average Pay ¹	\$ 43,509	\$ 46,903	\$ 57,684	\$ 62,886	\$ 50,775	\$ 54,906	\$ 84,760	\$ 95,516	\$ 63,781	\$ 65,829	\$ 45,293	\$ 47,568	\$ 82,290	\$ 89,216	\$ 79,332	\$ 84,008	\$ 56,335	\$ 60,158	
Terminated Vested																			
Number	8	5	56	57	20	16	2	1	311	298	2	3	0	1	69	63	0	0	
Average Age	63.75	63.60	53.93	53.40	57.10	57.75	67.00	69.00	48.23	48.23	31.50	36.00	0.00	70.00	43.41	43.37	0.00	0.00	
Average Service	10.17	8.76	7.83	8.05	12.70	12.74	18.28	5.55	10.72	10.90	4.99	5.01	0.00	15.43	9.69	9.63	0.00	0.00	
Transfers																			
Number	6	5	125	122	13	13	1	0	212	228	38	64	1	0	110	113	10	17	
Average Age	63.00	63.80	48.08	48.52	51.08	52.08	58.00	0.00	47.16	47.75	35.79	37.09	69.00	0.00	41.81	42.19	33.60	32.65	
Average Service	11.57	11.60	3.21	3.19	15.21	15.86	3.27	0.00	9.33	10.00	1.63	1.91	6.08	0.00	7.27	7.48	1.62	2.33	
Total Inactives																			
Number	14	10	181	179	33	29	3	1	523	526	40	67	1	1	179	176	10	17	
Average Age	63.43	63.70	49.89	50.07	54.73	55.21	64.00	69.00	47.80	48.03	35.58	37.04	69.00	70.00	42.42	42.61	33.60	32.65	
Average Service	10.77	10.18	4.64	4.74	13.69	14.14	13.28	5.55	10.16	10.51	1.80	2.05	6.08	15.43	8.21	8.25	1.62	2.33	

¹ All payroll figures shown are annual.

CERES and Other District Members

	General Members												Safety Members						
	Tier 1		Tier 2		Tier 3		Tier 4		Tier 5		PEPRA		Tiers 1 & 4		Tiers 2 & 5		PEPRA		
	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	7/1/2017	7/1/2018	
Active Participants																			
Number	0	0	4	4	0	0	1	1	78	67	40	50	0	0	62	58	20	15	
Average Age	0.00	0.00	46.00	47.00	0.00	0.00	70.00	71.00	50.21	50.10	38.20	39.84	0.00	0.00	40.65	41.34	33.70	35.27	
Average Service	0.00	0.00	11.54	12.58	0.00	0.00	48.83	49.87	16.42	17.21	2.75	2.47	0.00	0.00	14.14	14.82	2.32	3.85	
Average Pay ¹	\$ 0	\$ 0	\$ 55,402	\$ 57,540	\$ 0	\$ 0	\$ 55,657	\$ 55,657	\$ 69,374	\$ 66,661	\$ 44,360	\$ 45,397	\$ 0	\$ 0	\$ 91,204	\$ 88,969	\$ 54,440	\$ 63,119	
Terminated Vested																			
Number	1	1	4	4	0	0	0	0	11	9	1	2	0	0	11	10	0	0	
Average Age	63.00	64.00	57.25	58.25	0.00	0.00	0.00	0.00	44.64	47.22	43.00	41.50	0.00	0.00	41.82	42.60	0.00	0.00	
Average Service	5.32	5.32	7.59	7.59	0.00	0.00	0.00	0.00	13.26	12.68	13.29	12.90	0.00	0.00	9.84	9.94	0.00	0.00	
Transfers																			
Number	0	0	4	5	0	0	0	0	23	27	2	6	0	0	29	33	1	2	
Average Age	0.00	0.00	48.25	52.00	0.00	0.00	0.00	0.00	41.78	42.26	30.00	33.67	0.00	0.00	43.86	44.09	30.00	28.50	
Average Service	0.00	0.00	1.99	2.11	0.00	0.00	0.00	0.00	9.90	10.60	2.25	3.03	0.00	0.00	9.16	9.09	1.73	2.18	
Inactives																			
Number	1	1	8	9	0	0	0	0	34	36	3	8	0	0	40	43	1	2	
Average Age	63.00	64.00	52.75	54.78	0.00	0.00	0.00	0.00	42.71	43.50	34.33	35.63	0.00	0.00	43.30	43.74	30.00	28.50	
Average Service	5.32	5.32	4.79	4.55	0.00	0.00	0.00	0.00	10.99	11.12	5.93	5.50	0.00	0.00	9.35	9.29	1.73	2.18	

¹ All payroll figures shown are annual.



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

APPENDIX A – MEMBERSHIP INFORMATION

Valuation Date	Plan Type	Number	Annual Payroll	Average Annual Salary	Increase in Average Pay
June 30, 2003	General	3,626	\$163,505,000	\$45,092	6.76%
	Safety	637	\$34,159,000	\$53,625	3.98%
	Total	4,263	\$197,664,000	\$46,367	5.23%
June 30, 2004	General	3,618	\$164,462,000	\$45,457	0.81%
	Safety	630	\$35,501,000	\$56,351	5.08%
	Total	4,248	\$199,963,000	\$47,072	1.52%
June 30, 2005	General	3,651	\$173,399,000	\$47,494	4.48%
	Safety	687	\$38,282,000	\$55,723	-1.11%
	Total	4,338	\$211,681,000	\$48,797	3.66%
June 30, 2006	General	3,702	\$179,767,000	\$48,559	2.24%
	Safety	689	\$40,001,000	\$58,057	4.19%
	Total	4,391	\$219,768,000	\$50,050	2.57%
June 30, 2008	General	3,719	\$230,942,000	\$62,098	27.88%
	Safety	731	\$44,638,000	\$61,064	5.18%
	Total	4,450	\$275,580,000	\$61,928	23.73%
June 30, 2009	General	3,627	\$201,144,000	\$55,457	-10.69%
	Safety	739	\$47,172,000	\$63,832	4.53%
	Total	4,366	\$248,316,000	\$56,875	-8.16%
June 30, 2010	General	3,464	\$202,200,198	\$58,372	5.26%
	Safety	685	\$46,630,275	\$68,073	6.64%
	Total	4,149	\$248,830,473	\$59,974	5.45%
June 30, 2011	General	3,232	\$184,906,498	\$57,211	-1.99%
	Safety	637	\$41,800,298	\$65,621	-3.60%
	Total	3,869	\$226,706,796	\$58,596	-2.30%
June 30, 2012	General	3,233	\$179,260,736	\$55,447	-3.08%
	Safety	661	\$41,657,273	\$63,022	-3.96%
	Total	3,894	\$220,918,009	\$56,733	-3.18%
June 30, 2013	General	3,230	\$176,437,755	\$54,625	-1.48%
	Safety	694	\$42,590,563	\$61,370	-2.62%
	Total	3,924	\$219,028,318	\$55,818	-1.61%
June 30, 2014	General	3,303	\$179,606,090	\$54,377	-0.45%
	Safety	689	\$43,422,198	\$63,022	2.69%
	Total	3,992	\$223,028,288	\$55,869	0.09%
June 30, 2015	General	3,421	\$188,550,804	\$55,116	1.36%
	Safety	723	\$49,166,923	\$68,004	7.91%
	Total	4,144	\$237,717,727	\$57,364	2.68%
June 30, 2016	General	3,521	\$198,457,059	\$56,364	2.26%
	Safety	727	\$52,020,521	\$71,555	5.22%
	Total	4,248	\$250,477,580	\$58,964	2.79%
June 30, 2017	General	3,552	\$201,758,423	\$56,801	0.78%
	Safety	757	\$54,385,261	\$71,843	0.40%
	Total	4,309	\$256,143,684	\$59,444	0.81%
June 30, 2018	General	3,658	\$211,919,963	\$57,933	1.99%
	Safety	794	\$58,835,257	\$74,100	3.14%
	Total	4,452	\$270,755,220	\$60,817	2.31%

Actuarial valuation was not performed for fiscal year ending June 30, 2007.

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

APPENDIX A – MEMBERSHIP INFORMATION

StanCERA Membership – Retired Members as of June 30, 2018

Age	County and Former County				Ceres and Other Districts				Total	
	General Members		Safety Members		General Members		Safety Members		Number	Annual Average Benefit
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit		
35-39	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
40-44	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
45-49	0	\$ 0	2	\$ 48,726	0	\$ 0	0	\$ 0	2	\$ 48,726
50-54	54	\$ 19,991	69	\$ 60,621	1	\$ 32,998	4	\$ 29,875	128	\$ 42,304
55-59	182	\$ 26,338	57	\$ 56,255	4	\$ 25,063	4	\$ 92,535	247	\$ 34,294
60-64	419	\$ 34,087	69	\$ 50,007	18	\$ 34,511	5	\$ 125,803	511	\$ 37,149
65-69	680	\$ 32,788	76	\$ 51,610	17	\$ 28,659	3	\$ 70,964	776	\$ 34,689
70-74	598	\$ 34,453	58	\$ 63,599	14	\$ 29,169	0	\$ 0	670	\$ 36,865
75-79	337	\$ 29,084	37	\$ 51,053	10	\$ 33,438	0	\$ 0	384	\$ 31,314
80-84	160	\$ 24,187	18	\$ 66,695	3	\$ 61,193	0	\$ 0	181	\$ 29,028
85-89	118	\$ 23,421	6	\$ 36,770	1	\$ 8,815	0	\$ 0	125	\$ 23,945
90-94	61	\$ 20,118	4	\$ 25,526	0	\$ 0	0	\$ 0	65	\$ 20,451
95+	17	\$ 22,541	1	\$ 19,467	0	\$ 0	0	\$ 0	18	\$ 22,370
All Ages	2,626	\$ 30,883	397	\$ 55,366	68	\$ 32,012	16	\$ 83,221	3,107	\$ 34,306

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

APPENDIX A – MEMBERSHIP INFORMATION

StanCERA Membership – Service-Connected Disabled Members as of June 30, 2018

Age	County and Former County				Ceres and Other Districts				Total	
	General Members		Safety Members		General Members		Safety Members		Number	Annual Average Benefit
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit		
25-29	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
30-34	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
35-39	0	\$ 0	7	\$ 26,156	0	\$ 0	0	\$ 0	7	\$ 26,156
40-44	1	\$ 15,921	7	\$ 32,897	0	\$ 0	1	\$ 53,304	9	\$ 33,278
45-49	2	\$ 23,954	13	\$ 33,810	0	\$ 0	1	\$ 31,527	16	\$ 32,435
50-54	1	\$ 31,568	16	\$ 37,455	0	\$ 0	0	\$ 0	17	\$ 37,109
55-59	4	\$ 29,718	17	\$ 34,869	1	\$ 31,178	1	\$ 97,528	23	\$ 36,537
60-64	17	\$ 23,369	23	\$ 40,379	1	\$ 17,110	0	\$ 0	41	\$ 32,759
65-69	27	\$ 23,754	14	\$ 47,620	1	\$ 24,424	3	\$ 41,809	45	\$ 32,397
70-74	15	\$ 29,114	17	\$ 44,614	4	\$ 24,116	0	\$ 0	36	\$ 35,878
75-79	13	\$ 28,333	4	\$ 37,935	0	\$ 0	0	\$ 0	17	\$ 30,592
80-84	6	\$ 28,510	2	\$ 45,577	0	\$ 0	0	\$ 0	8	\$ 32,777
85-89	2	\$ 36,819	1	\$ 26,693	0	\$ 0	0	\$ 0	3	\$ 33,444
90-94	1	\$ 18,442	0	\$ 0	0	\$ 0	0	\$ 0	1	\$ 18,442
95+	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
All Ages	89	\$ 26,079	121	\$ 38,582	7	\$ 24,168	6	\$ 51,298	223	\$ 33,482

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

APPENDIX A – MEMBERSHIP INFORMATION

StanCERA Membership – Nonservice-Connected Disabled Members as of June 30, 2018

Age	County and Former County				Ceres and Other Districts				Total	
	<u>General Members</u>		<u>Safety Members</u>		<u>General Members</u>		<u>Safety Members</u>		Number	Annual Average Benefit
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit		
35-39	0	\$ 0	0	\$ 0	1	\$ 22,922	0	\$ 0	1	\$ 22,922
40-44	3	\$ 16,296	0	\$ 0	0	\$ 0	0	\$ 0	3	\$ 16,296
45-49	5	\$ 17,534	1	\$ 23,611	0	\$ 0	1	\$ 37,103	7	\$ 21,198
50-54	10	\$ 16,289	0	\$ 0	0	\$ 0	0	\$ 0	10	\$ 16,289
55-59	6	\$ 20,674	1	\$ 26,934	0	\$ 0	0	\$ 0	7	\$ 21,568
60-64	11	\$ 19,402	2	\$ 23,424	0	\$ 0	0	\$ 0	13	\$ 20,021
65-69	13	\$ 15,671	1	\$ 15,078	0	\$ 0	0	\$ 0	14	\$ 15,629
70-74	15	\$ 21,506	0	\$ 0	0	\$ 0	0	\$ 0	15	\$ 21,506
75-79	6	\$ 12,726	1	\$ 21,324	0	\$ 0	0	\$ 0	7	\$ 13,954
80-84	3	\$ 11,689	0	\$ 0	0	\$ 0	0	\$ 0	3	\$ 11,689
85-89	1	\$ 21,505	0	\$ 0	0	\$ 0	0	\$ 0	1	\$ 21,505
90-94	1	\$ 7,403	0	\$ 0	0	\$ 0	0	\$ 0	1	\$ 7,403
95+	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
All Ages	74	\$ 17,616	6	\$ 22,299	1	\$ 22,922	1	\$ 37,103	82	\$ 18,261

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

APPENDIX A – MEMBERSHIP INFORMATION

StanCERA Membership – Beneficiaries as of June 30, 2018

Age	County and Former County				Ceres and Other Districts				Total	
	General Members		Safety Members		General Members		Safety Members		Number	Annual Average Benefit
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit		
0-24	1	\$ 32,085	2	\$ 18,867	0	\$ 0	0	\$ 0	3	\$ 23,273
25-29	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0	0	\$ 0
30-34	1	\$ 38,785	0	\$ 0	0	\$ 0	0	\$ 0	1	\$ 38,785
35-39	1	\$ 7,921	0	\$ 0	0	\$ 0	0	\$ 0	1	\$ 7,921
40-44	5	\$ 10,260	1	\$ 11,160	0	\$ 0	0	\$ 0	6	\$ 10,410
45-49	8	\$ 10,191	6	\$ 23,934	0	\$ 0	0	\$ 0	14	\$ 16,081
50-54	18	\$ 14,586	6	\$ 38,604	0	\$ 0	0	\$ 0	24	\$ 20,591
55-59	16	\$ 14,844	10	\$ 24,146	0	\$ 0	2	\$ 32,710	28	\$ 19,443
60-64	30	\$ 14,387	10	\$ 22,912	0	\$ 0	0	\$ 0	40	\$ 16,518
65-69	46	\$ 22,078	14	\$ 27,429	2	\$ 12,266	0	\$ 0	62	\$ 22,970
70-74	76	\$ 19,015	12	\$ 41,827	0	\$ 0	1	\$ 84,420	89	\$ 22,826
75-79	42	\$ 19,517	14	\$ 36,543	1	\$ 18,461	0	\$ 0	57	\$ 23,680
80-84	32	\$ 18,190	10	\$ 26,148	0	\$ 0	0	\$ 0	42	\$ 20,085
85-89	34	\$ 24,078	8	\$ 32,693	0	\$ 0	0	\$ 0	42	\$ 25,719
90-94	25	\$ 18,618	0	\$ 0	0	\$ 0	0	\$ 0	25	\$ 18,618
95+	10	\$ 14,575	0	\$ 0	0	\$ 0	0	\$ 0	10	\$ 14,575
All Ages	345	\$ 18,654	93	\$ 30,272	3	\$ 14,331	3	\$ 49,947	444	\$ 21,270

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

APPENDIX A – MEMBERSHIP INFORMATION

StanCERA Membership – Benefit Form Elections as of June 30, 2018

	County and Former County		Ceres and Other Districts		Total
	General	Safety	General	Safety	
Service Retired					
Option #0 (Unmodified 60% to Spouse)	2,170	352	52	14	2,588
Option #1 (Cash Refund)	210	10	6	0	226
Option #2 (100% Continuance)	213	31	10	1	255
Option #3 (50% Continuance)	31	3	0	1	35
Option #4 (Other)	2	1	0	0	3
Total Service Retired	2,626	397	68	16	3,107
Ordinary Disability					
Option #0 (Unmodified 60% to Spouse)	65	4	1	1	71
Option #1 (Cash Refund)	5	2	0	0	7
Option #2 (100% Continuance)	4	0	0	0	4
Option #3 (50% Continuance)	0	0	0	0	0
Total Ordinary Disability	74	6	1	1	82
Duty Disability					
Option #0 (Unmodified 60% to Spouse)	78	109	5	5	197
Option #1 (Cash Refund)	1	1	1	0	3
Option #2 (100% Continuance)	7	10	1	1	19
Option #3 (50% Continuance)	3	1	0	0	4
Total Duty Disability	89	121	7	6	223
Total	2,789	524	76	23	3,412

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

APPENDIX A – MEMBERSHIP INFORMATION

**Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2018
General Members (County and Former County)**

Count

Age	Years of Service												Total Count	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	24	13	3	1	0	0	0	0	0	0	0	0	0	41
25-29	112	88	65	55	17	3	0	0	0	0	0	0	0	340
30-34	75	58	76	48	56	71	26	0	0	0	0	0	0	410
35-39	65	45	57	56	50	86	114	22	1	0	0	0	0	496
40-44	34	36	30	41	24	56	130	108	15	0	0	0	0	474
45-49	24	22	20	25	27	44	112	119	55	11	0	0	0	459
50-54	20	18	24	28	16	38	100	90	84	38	9	1	1	466
55-59	20	24	13	12	15	30	82	101	82	53	30	4	4	466
60-64	7	10	14	5	5	15	67	69	41	32	12	7	7	284
65-69	2	1	1	0	2	10	22	16	10	8	2	4	4	78
70 & Over	1	0	1	0	0	0	5	10	3	2	0	0	0	22
Total Count	384	315	304	271	212	353	658	535	291	144	53	16	16	3,536

Compensation (\$)

Age	Years of Service												Avg. Comp.	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	36,957	38,587	35,658	31,923	0	0	0	0	0	0	0	0	0	37,256
25-29	38,525	42,808	43,511	47,026	47,008	52,571	0	0	0	0	0	0	0	42,510
30-34	44,020	46,555	49,055	51,660	52,978	59,990	54,014	0	0	0	0	0	0	50,829
35-39	50,419	43,921	48,716	52,783	50,770	57,433	61,133	57,297	66,263	0	0	0	0	53,952
40-44	48,452	48,414	53,351	51,071	53,234	58,998	62,935	64,604	53,508	0	0	0	0	58,286
45-49	41,505	47,048	47,669	47,407	52,819	66,061	62,227	67,550	74,353	75,736	0	0	0	61,945
50-54	48,441	60,669	47,501	53,902	52,466	63,396	65,883	67,450	75,208	72,836	88,138	97,016	0	65,650
55-59	48,167	60,046	56,821	49,792	56,577	62,582	63,230	66,139	65,229	73,969	77,087	59,467	0	64,702
60-64	51,463	57,994	46,364	44,667	78,386	56,220	59,141	60,533	60,995	83,901	70,254	123,398	0	63,660
65-69	40,352	43,992	61,353	0	83,344	57,588	56,519	69,615	85,981	60,404	57,119	62,671	0	64,023
70 & Over	35,880	0	122,072	0	0	0	108,150	50,599	44,808	49,938	0	0	0	65,409
Average	43,836	47,240	48,373	50,417	53,089	60,262	62,377	65,090	69,139	74,925	76,663	90,585	0	57,946

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

APPENDIX A – MEMBERSHIP INFORMATION

**Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2018
General Members (Ceres and Other Districts)**

Count

Age	Years of Service											Total Count		
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34		35 & Over	
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	2	0	1	0	0	0	0	0	0	0	0	0	0	3
25-29	2	3	0	2	2	0	0	0	0	0	0	0	0	9
30-34	4	0	3	0	1	2	0	0	0	0	0	0	0	10
35-39	2	1	2	2	0	4	3	2	0	0	0	0	0	16
40-44	4	0	0	1	1	1	1	6	1	0	0	0	0	15
45-49	1	0	2	1	0	1	6	3	1	0	0	0	0	15
50-54	2	1	0	3	0	2	4	7	0	1	3	0	0	23
55-59	2	1	0	1	1	2	3	3	2	2	0	0	0	17
60-64	0	0	0	0	0	2	1	4	2	0	1	0	0	10
65-69	0	0	0	0	1	2	0	0	0	0	0	0	0	3
70 & Over	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total Count	19	6	8	10	6	16	18	25	6	3	4	1	0	122

Compensation (\$)

Age	Years of Service											Avg. Comp.		
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34		35 & Over	
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	34,501	0	36,726	0	0	0	0	0	0	0	0	0	0	35,243
25-29	34,131	36,120	0	40,843	43,975	0	0	0	0	0	0	0	0	38,473
30-34	34,606	0	44,983	0	43,253	56,306	0	0	0	0	0	0	0	42,924
35-39	32,224	39,700	48,297	48,008	0	63,098	56,921	56,478	0	0	0	0	0	52,054
40-44	44,325	0	0	38,495	43,333	48,237	45,050	72,005	56,773	0	0	0	0	56,081
45-49	50,038	0	75,150	61,739	0	179,623	58,095	48,833	65,645	0	0	0	0	66,827
50-54	43,256	96,357	0	70,555	0	84,608	58,773	67,913	0	51,459	69,135	0	0	66,656
55-59	45,047	76,077	0	52,096	37,764	53,261	82,173	67,999	69,295	69,582	0	0	0	64,166
60-64	0	0	0	0	0	41,144	69,852	53,141	90,634	0	49,634	0	0	59,561
65-69	0	0	0	0	37,764	75,653	0	0	0	0	0	0	0	63,023
70 & Over	0	0	0	0	0	0	0	0	0	0	0	55,657	0	55,657
Average	39,162	53,416	52,321	54,170	41,677	68,887	61,991	63,337	73,713	63,541	64,260	55,657	0	57,557

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

APPENDIX A – MEMBERSHIP INFORMATION

**Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2018
Safety Members (County and Former County)**

Count

Age	Years of Service												Total Count	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	25	15	6	0	0	0	0	0	0	0	0	0	0	46
25-29	31	36	26	31	22	11	0	0	0	0	0	0	0	157
30-34	14	12	18	16	11	32	12	0	0	0	0	0	0	115
35-39	6	4	7	9	5	21	54	14	0	0	0	0	0	120
40-44	2	4	1	3	3	7	33	47	9	0	0	0	0	109
45-49	0	3	0	1	0	4	17	26	37	3	0	0	0	91
50-54	2	1	1	2	0	1	7	10	20	7	0	0	0	51
55-59	0	0	1	0	1	3	8	3	3	1	0	0	0	20
60-64	0	0	0	0	0	0	2	4	1	1	0	0	0	8
65-69	0	0	0	0	0	2	1	0	1	0	0	0	0	4
70 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Count	80	75	60	62	42	81	134	104	71	12	0	0	0	721

Compensation (\$)

Age	Years of Service												Avg. Comp.	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	56,201	57,843	61,865	0	0	0	0	0	0	0	0	0	0	57,475
25-29	54,086	53,006	57,599	61,661	64,391	72,997	0	0	0	0	0	0	0	58,685
30-34	57,523	55,762	62,589	67,629	65,144	72,124	83,547	0	0	0	0	0	0	67,046
35-39	59,472	49,029	63,938	67,698	61,408	73,135	80,970	80,300	0	0	0	0	0	74,577
40-44	68,921	56,657	62,309	68,633	72,596	68,777	82,542	84,844	87,771	0	0	0	0	81,040
45-49	0	59,992	0	69,485	0	57,931	83,014	82,519	98,422	89,851	0	0	0	87,352
50-54	108,462	75,975	85,834	87,446	0	81,485	83,962	77,870	97,086	93,633	0	0	0	90,170
55-59	0	0	76,845	0	64,336	84,521	71,713	83,881	133,628	93,321	0	0	0	85,715
60-64	0	0	0	0	0	0	82,516	88,468	89,216	77,622	0	0	0	85,718
65-69	0	0	0	0	0	89,447	154,240	0	97,071	0	0	0	0	107,551
70 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	57,483	54,983	61,132	65,373	64,818	72,517	82,021	83,092	98,034	91,327	0	0	0	73,132

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

**Age & Service Distribution of Active Members by Count and Average Compensation as of June 30, 2018
Safety Members (Ceres and Other Districts)**

Count

Age	Years of Service												Total Count
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0	0	0
25-29	2	0	0	2	0	1	0	0	0	0	0	0	5
30-34	0	1	6	0	1	6	4	0	0	0	0	0	18
35-39	0	0	0	1	1	2	7	1	0	0	0	0	12
40-44	0	1	0	0	0	0	6	5	1	0	0	0	13
45-49	0	1	1	1	0	1	0	7	5	1	0	0	17
50-54	0	0	0	1	0	1	0	0	2	1	0	0	5
55-59	0	0	0	0	0	0	0	0	2	0	0	0	2
60-64	0	0	0	0	0	0	1	0	0	0	0	0	1
65-69	0	0	0	0	0	0	0	0	0	0	0	0	0
70 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Count	2	3	7	5	2	11	18	13	10	2	0	0	73

Compensation (\$)

Age	Years of Service												Avg. Comp.
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0	0	0
25-29	60,401	0	0	67,354	0	67,748	0	0	0	0	0	0	64,652
30-34	0	63,591	60,376	0	72,480	78,226	82,659	0	0	0	0	0	72,129
35-39	0	0	0	78,422	62,483	85,296	81,376	83,695	0	0	0	0	80,402
40-44	0	66,104	0	0	0	0	87,564	95,960	115,408	0	0	0	91,284
45-49	0	59,711	68,874	72,786	0	70,132	0	95,638	118,853	91,043	0	0	95,663
50-54	0	0	0	70,232	0	74,855	0	0	93,315	100,378	0	0	86,419
55-59	0	0	0	0	0	0	0	0	93,388	0	0	0	93,388
60-64	0	0	0	0	0	0	88,718	0	0	0	0	0	88,718
65-69	0	0	0	0	0	0	0	0	0	0	0	0	0
70 & Over	0	0	0	0	0	0	0	0	0	0	0	0	0
Average	60,401	63,135	61,590	71,230	67,482	77,517	84,132	94,843	108,308	95,711	0	0	83,657

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

**Reconciliation of Plan Membership Since Prior Valuation
All Members**

All Members

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2017	4,309	575	381	496	85	226	3,004	431	9,507
New Entrants	543	0	0	0	0	0	0	0	543
Rehires	26	(6)	(11)	(6)	0	0	0	0	3
Duty Disabilities	(1)	(4)	0	0	0	5	0	0	0
Ordinary Disabilities	(2)	0	0	0	2	0	0	0	0
Retirements	(119)	(16)	(2)	(44)	0	0	181	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	(55)	(2)	0	57	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	(2)	0	0	0	(3)	(5)	(30)	40	0
Died, Without Beneficiary, and Other Terminations	(132)	0	126	(2)	(2)	(6)	(46)	0	(62)
Transfers	(42)	89	(15)	(25)	0	0	0	0	7
Beneficiary Deaths	0	0	0	0	0	0	0	(28)	(28)
Domestic Relations Orders	0	0	0	0	0	0	0	4	4
Withdrawals Paid	(73)	(1)	(47)	(6)	0	0	0	(3)	(130)
Member Reclassifications	0	0	0	0	0	3	(2)	0	1
July 1, 2018	4,452	635	432	470	82	223	3,107	444	9,845

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

APPENDIX A – MEMBERSHIP INFORMATION

**Reconciliation of Plan Membership Since Prior Valuation
General Members (County and Former County)**

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2017	3,429	395	325	399	77	95	2,552	335	7,607
New Entrants	424	0	0	0	0	0	0	0	424
Rehires	19	(1)	(10)	(5)	0	0	0	0	3
Duty Disabilities	0	(1)	0	0	0	1	0	0	0
Ordinary Disabilities	(2)	0	0	0	2	0	0	0	0
Retirements	(90)	(13)	(2)	(37)	0	0	142	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	(43)	(1)	0	44	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	(2)	0	0	0	(3)	(4)	(24)	33	0
Died, Without Beneficiary, and Other Terminations	(108)	0	102	(1)	(2)	(4)	(43)	0	(56)
Transfers	(27)	56	(10)	(15)	0	0	0	0	4
Beneficiary Deaths	0	0	0	0	0	0	0	(24)	(24)
Domestic Relations Orders	0	0	0	0	0	0	0	2	2
Withdrawals Paid	(64)	(1)	(43)	(5)	0	0	0	(1)	(114)
Member Reclassifications	0	(2)	0	0	0	1	(1)	0	(2)
July 1, 2018	3,536	432	362	380	74	89	2,626	345	7,844

**STANISLAUS COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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**Reconciliation of Plan Membership Since Prior Valuation
Safety Members (County and Former County)**

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2017	675	121	42	69	6	119	375	91	1,498
New Entrants	96	0	0	0	0	0	0	0	96
Rehires	7	(5)	(1)	(1)	0	0	0	0	0
Duty Disabilities	0	(3)	0	0	0	3	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(19)	(3)	0	(7)	0	0	29	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	(8)	(1)	0	9	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	0	(5)	5	0
Died, Without Beneficiary, and Other Terminations	(13)	0	13	(1)	0	(2)	(2)	0	(5)
Transfers	(11)	20	(2)	(4)	0	0	0	0	3
Beneficiary Deaths	0	0	0	0	0	0	0	(3)	(3)
Domestic Relations Orders	0	0	0	0	0	0	0	2	2
Withdrawals Paid	(6)	0	(3)	(1)	0	0	0	(2)	(12)
Member Reclassifications	0	1	0	0	0	1	0	0	2
July 1, 2018	721	130	49	64	6	121	397	93	1,581

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

APPENDIX A – MEMBERSHIP INFORMATION

**Reconciliation of Plan Membership Since Prior Valuation
General Members (Ceres and Other Districts)**

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2017	123	29	5	17	1	6	62	3	246
New Entrants	20	0	0	0	0	0	0	0	20
Rehires	0	0	0	0	0	0	0	0	0
Duty Disabilities	(1)	0	0	0	0	1	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(8)	0	0	0	0	0	8	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	(2)	0	0	2	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	0	(1)	1	0
Died, Without Beneficiary, and Other Terminations	(4)	0	4	0	0	0	(1)	0	(1)
Transfers	(4)	8	(1)	(3)	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	0	0	(1)	(1)
Domestic Relations Orders	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(2)	0	0	0	0	0	0	0	(2)
Member Reclassifications	0	1	0	0	0	0	0	0	1
July 1, 2018	122	38	8	16	1	7	68	3	263

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

**Reconciliation of Plan Membership Since Prior Valuation
Safety Members (Ceres and Other Districts)**

	Actives	Transfers	Non Vested Terminations due Refunds	Vested Terminations	Ordinary Disabled	Duty Disabled	Retired	Beneficiaries	Total
July 1, 2017	82	30	9	11	1	6	15	2	156
New Entrants	3	0	0	0	0	0	0	0	3
Rehires	0	0	0	0	0	0	0	0	0
Duty Disabilities	0	0	0	0	0	0	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(2)	0	0	0	0	0	2	0	0
Retirements from General with Safety Service	0	0	0	0	0	0	0	0	0
Vested Terminations	(2)	0	0	2	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	(1)	0	1	0
Died, Without Beneficiary, and Other Terminations	(7)	0	7	0	0	0	0	0	0
Transfers	0	5	(2)	(3)	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	0	0	0	0
Domestic Relations Orders	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(1)	0	(1)	0	0	0	0	0	(2)
Member Reclassifications	0	0	0	0	0	1	(1)	0	0
July 1, 2018	73	35	13	10	1	6	16	3	157

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

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

The assumptions and methods used in the actuarial valuation as of July 1, 2018 are:

Actuarial Methods

1. Actuarial Cost Method

Annual contributions to the Stanislaus County Employees' Retirement Association (the Plan) are computed under the Entry Age Normal Actuarial Cost Method, computed to the final decrement.

Under this Cost Method, the Normal Cost is calculated as the amount necessary to fund Members' benefits as a level percentage of total payroll over their projected working lives. At each valuation date, the Actuarial Liability is equal to the difference between the liability for the Members' total projected benefit and the present value of future Normal Cost contributions.

The excess of the Actuarial Liability over Plan assets is the Unfunded Actuarial Liability, and the liability for each valuation group is amortized as a level percentage of payroll over a closed period (18 years as of the current valuation).

Amounts may be added to or subtracted from the Unfunded Actuarial Liability due to Plan amendments or changes in actuarial assumptions.

The total Plan cost is the sum of the Normal Cost (computed on an Individual basis), the amortization of the Unfunded Actuarial Liability, and the expected Administrative Expenses.

2. Actuarial Value of Plan Assets

The Actuarial Value of Plan assets is a modified market-related value. The Market Value of Assets is adjusted to recognize, over a five-year period, differences between actual investment earnings and the assumed investment return. The Actuarial Value of Assets is limited to no less than 80% and no more than 120% of the market value.

The detailed calculations of the Actuarial Value of Plan assets are shown in Section II.

3. Changes in Actuarial Methods

None

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

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

Actuarial Assumptions

All actuarial assumptions are based on the Actuarial Experience Study Report for the period covering July 1, 2015 through June 30, 2018 report. The proposed assumptions were summarized and reviewed with the Board at the January 22, 2019 Board meeting, at which the Board provided direction to proceed with the valuation based on those assumptions. Final adoption of these assumptions will be effective with the adoption of this Report.

4. Rate of Return

The annual rate of return on all Plan assets is assumed to be 7.00%, net of investment expenses.

5. Cost of Living

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 2.75% per year.

6. Administrative Expenses

An allowance of \$2, 825,625 for Plan administrative expenses for the current year has been included in the annual cost calculated. The administrative expense amount has been assumed to increase in future years at the rate of the Cost of Living assumption (2.75%).

7. Interest Credited to Employee Accounts

The employee accounts are credited with 0.25% interest annually.

8. Increases in Pay

Base salary increase: 3.00%

Assumed pay increases for active Members consist of increases due to base salary adjustments (as noted above), plus service-based increases due to longevity and promotion, as shown on the next page.

STANISLAUS COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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APPENDIX B – STATEMENT OF CURRENT ACTUARIAL
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Longevity & Promotion Increases		
Service	General	Safety
0	5.00%	7.00%
1	5.00%	6.00%
2	5.00%	5.00%
3	5.00%	4.00%
4	5.00%	3.00%
5	3.50%	2.00%
6	2.50%	1.75%
7	1.50%	1.50%
8	1.25%	1.25%
9	1.00%	1.00%
10	0.75%	0.75%
11+	0.50%	0.50%

9. PEPRA Compensation Limit

The assumption used for increasing the compensation limit that applies to PEPRA members is 2.75%

10. Post Retirement COLA

For those with the 3% COLA benefit (i.e. 100% of CPI up to 3% annually with banking), 2.60% annual increases are assumed. Increases are assumed to occur on April 1.

11. Social Security Wage Base

General Plan 3 members have their benefits offset by an assumed Social Security Benefit. For projecting the Social Security Benefit, the annual Social Security Wage Base increase is assumed to be 3.00% per year.

12. Internal Revenue Code Section 415 Limit

The Internal Revenue Code Section 415 maximum benefit limitations are not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

13. Internal Revenue Code Section 401(a)(17)

The Internal Revenue Code Section 401(a)(17) maximum compensation limitation is not reflected in the valuation for funding purposes. Any limitation is reflected in a member's benefit after retirement.

**STANISLAUS COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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**APPENDIX B – STATEMENT OF CURRENT ACTUARIAL
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14. Family Composition

Percentage married for all active members who retire, become disabled, or die during active service is shown in the following table.

Percentage Married	
Gender	Percentage
Males	80%
Females	50%

Spouses of male members are assumed to be three years younger than the member and spouses of female members are assumed to be two years older than the member.

15. Accumulated Vacation Time Load

Active members' service retirement and related benefits are loaded by 1.75% for Safety Members and 1.00% for General Members for conversion of vacation time. 1/3 of this load applies for members with a 36 month final average service period. No other adjustment is made to the liabilities for anticipated future service purchases.

16. Rates of Separation

Rates of termination apply to all active Members who terminate their employment.

Separate rates of termination are assumed among Safety and General Members.

Termination Rates		
Years of Service	General All	Safety All
0	18.0%	18.0%
1	14.0%	12.0%
2	11.7%	9.0%
3	9.4%	7.0%
4	7.1%	6.0%
5	5.0%	5.0%
10	3.5%	5.0%
15	2.9%	3.4%
20	1.5%	0.0%
25	1.3%	0.0%
30+	0.0%	0.0%

Termination rates do not apply once a member is eligible for retirement.

**STANISLAUS COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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**APPENDIX B – STATEMENT OF CURRENT ACTUARIAL
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17. Withdrawal

Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits. Separate rates of withdrawal are assumed among Safety and General Members, and are based on service. The rates do not overlap with the service retirement rates.

50% of all General Member terminations with less than 10 years of service are assumed to take a refund of contributions, as well as 20% of those with 10 or more years of service.

35% of all Safety Member terminations with less than 10 years of service are assumed to take a refund of contributions, and 10% of those with 10 or more years are assumed to take a refund.

18. Vested Termination and Reciprocal Transfers

Rates of vested termination apply to active Members who terminate their employment after five years of service and leave their member contributions on deposit with the Plan. Alternatively, those who terminate their employment with less than five years of service can leave their member contributions with the Plan and transfer to a reciprocal employer, therefore retaining entitlement to future Plan benefits.

Vested terminated Tier 3 General Members are assumed to begin receiving benefits at age 65 while all other General Members are assumed to begin at age 58, unless they have reciprocity, in which case they are assumed to begin at age 61; terminated Safety Members are assumed to begin receiving benefits at age 53. 50% of vested terminated General Members are assumed to be reciprocal; 65% of vested terminated Safety Members are assumed to be reciprocal.

Reciprocal members are assumed to receive 3.75% annual pay increases from the date of transfer to the assumed retirement date.

19. Form of Benefit

Upon retirement, all married members are assumed to elect the normal payment form (joint & 50% survivor annuity for Tier 3 and joint & 60% survivor annuity for all other tiers). Non-married members are assumed to elect a single life annuity. Actual form elections are not anticipated to materially affect results due to the actuarially equivalent optional form factors.

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20. Rates of Service-Connected Disability

Separate rates of duty disability are assumed among Safety and General Members; rates for both sexes for Safety Members are combined. Safety members are assumed to follow the CALPERS State Safety rates. Sample rates are shown below:

Rates of Service-Connected Disability			
Age	General		Safety
	Male	Female	All
20	0.0043%	0.0002%	0.0020%
25	0.0102%	0.0004%	0.0760%
30	0.0211%	0.0008%	0.1700%
35	0.0284%	0.0024%	0.2640%
40	0.0401%	0.0056%	0.3600%
45	0.0613%	0.0101%	0.4570%
50	0.0897%	0.0162%	0.5570%
55	0.1227%	0.0249%	0.6580%
60	0.1637%	0.0349%	0.7620%
65	0.0000%	0.0000%	0.8690%

21. Rates of Nonservice-Connected Disability

Separate rates of ordinary disability are assumed among Safety and General Members. Rates of ordinary disability for Safety Members are assumed to follow the CalPERS Public Agency Police Non-Industrial Disability table; rates of ordinary disability for General Members are assumed to follow the 2018 CalPERS Public Agency Miscellaneous Non-Industrial Disability table. The rates shown are applied after five Years of Service. On the next page are sample rates:

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Rates of Non Service-Connected Disability			Rates of Non Service-Connected Disability	
General			Safety	
Age	Male	Female	Age	All
20	0.0170%	0.0100%	20	0.0100%
25	0.0170%	0.0100%	25	0.0100%
30	0.0190%	0.0240%	30	0.0200%
35	0.0390%	0.0710%	35	0.0300%
40	0.1020%	0.1350%	40	0.0400%
45	0.1510%	0.1880%	45	0.0500%
50	0.1580%	0.1990%	50	0.0800%
55	0.1580%	0.1490%	55	0.1300%
60	0.1530%	0.1050%	60	0.2000%
65	0.1280%	0.0880%	65+	0.2000%
70+	0.1020%	0.0840%		

22. Rates of Mortality for Non-Annuitants

Rates of ordinary death for active Members are specified by the CalPERS Pre-Retirement Non-Industrial Mortality table, adjusted by 97.2% for males and 101.6% for females, with generational mortality improvements projected from 2009 using SOA Scale MP-2018. Duty related mortality rates are only applicable for Safety Active Members, and are based on the CalPERS Pre-Retirement Individual Death table without adjustment or projection.

The table on the following page provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.

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Non-Annuitant Mortality Rates			
Age	Ordinary Death - General and Safety		Duty Death
	Male	Female	Safety All
20	0.0320%	0.0215%	0.0030%
25	0.0413%	0.0248%	0.0070%
30	0.0505%	0.0269%	0.0100%
35	0.0588%	0.0378%	0.0120%
40	0.0774%	0.0539%	0.0130%
45	0.1094%	0.0766%	0.0140%
50	0.1600%	0.1079%	0.0150%
55	0.2353%	0.1550%	0.0160%
60	0.3446%	0.2261%	0.0170%
65	0.4949%	0.3324%	0.0180%
70	0.6891%	0.4747%	0.0190%

23. Rates of Mortality for Nonservice-Connected Disabled Retirees

Rates of mortality for current nonservice-connected disabled Members are specified by the CalPERS Non-Industrially Disabled Annuitant Mortality table, adjusted by 104.5% for females (no adjustment for males), with generational mortality improvements projected from 2009 using SOA Scale MP-2018.

The table provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.

Nonservice-Connected Disabled Mortality Rates		
Age	Male	Female
45	1.297%	0.892%
50	1.784%	1.285%
55	2.095%	1.327%
60	2.634%	1.578%
65	3.120%	2.138%
70	3.890%	2.941%
75	5.398%	4.041%
80	8.230%	6.287%
85	13.166%	10.327%
90	18.469%	16.806%

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24. Rates of Mortality for Service-Connected Disabled Retirees

Rates of mortality for current service-connected disabled Members are specified by the CalPERS Industrially Disabled Annuitant Mortality table, adjusted by 101.9% for males (no adjustment for females), with generational mortality improvements projected from 2009 using SOA Scale MP-2018.

The table provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.

Service-Connected Disabled Mortality Rates		
Age	Male	Female
45	0.344%	0.298%
50	0.542%	0.495%
55	0.648%	0.460%
60	0.884%	0.633%
65	1.455%	1.066%
70	2.254%	1.775%
75	3.908%	2.952%
80	6.754%	4.978%
85	10.587%	7.959%
90	16.493%	12.335%

25. Rates of Mortality for Emerging Disabled Retirees

Rates of mortality for future General disabled retirees, both nonservice- and service-connected, are specified by mortality tables consisting of blends of the mortality assumptions for current nonservice- and service-connected disabled retirees. The blend for future disabled General retirees is 75% and 25%, respectively. The proportions reflect the expected splits in future disabled retirees between nonservice- and service-connected disablements.

Future disabled Safety retirees are assumed to follow the same rates of mortality as the service-connected disabled retirees indicated in the prior bullet.

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26. Rates of Mortality for Healthy Annuitants

Rates of mortality for retired Members and their beneficiaries are specified by the CalPERS Healthy Annuitant table, adjusted by 97.2% for males and 104.1% for females, with generational mortality improvements projected from 2009 using SOA Scale MP-2018.

The table below provides a sample of the base mortality rates including adjustments but prior to any projections for mortality improvements.

Healthy Annuitant Mortality Rates		
Age	Male	Female
45	0.234%	0.221%
50	0.517%	0.515%
55	0.618%	0.479%
60	0.794%	0.556%
65	1.026%	0.779%
70	1.717%	1.317%
75	2.900%	2.283%
80	5.128%	3.847%
85	9.165%	6.949%
90	15.733%	12.841%

27. Mortality Improvement

As mentioned above, the mortality assumptions employ a fully generational mortality improvement projection from base year 2009 using SOA Scale MP-2018.

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28. Rates of Retirement

Retirement for members in non-PEPRA Tiers (Tier 6) are assumed to occur among eligible members in accordance with the tables below:

Rates of Retirement General (Non-PEPRA)				Rates of Retirement Safety (Non-PEPRA)			
Age	Years of Service			Age	Years of Service		
	0-9	10-29	30+		0-9	10-19	20+
40-44	0.00%	0.00%	0.00%	40-48	0.00%	0.00%	5.00%
45-49	0.00%	0.00%	10.00%	49	0.00%	0.00%	20.00%
50-54	0.00%	5.00%	10.00%	50	0.00%	10.00%	30.00%
55	0.00%	7.50%	20.00%	51	0.00%	10.00%	20.00%
56	0.00%	7.50%	20.00%	52	0.00%	10.00%	20.00%
57	0.00%	7.50%	20.00%	53	0.00%	10.00%	20.00%
58	0.00%	12.50%	20.00%	54	0.00%	10.00%	20.00%
59	0.00%	12.50%	20.00%	55	0.00%	10.00%	30.00%
60	0.00%	12.50%	25.00%	56	0.00%	10.00%	30.00%
61	0.00%	20.00%	25.00%	57	0.00%	10.00%	30.00%
62	0.00%	25.00%	40.00%	58	0.00%	10.00%	30.00%
63	0.00%	20.00%	25.00%	59	0.00%	10.00%	30.00%
64	0.00%	25.00%	25.00%	60	0.00%	25.00%	100.00%
65	0.00%	35.00%	35.00%	61	0.00%	25.00%	100.00%
66	0.00%	45.00%	45.00%	62	0.00%	25.00%	100.00%
67	0.00%	20.00%	25.00%	63	0.00%	25.00%	100.00%
68	0.00%	20.00%	25.00%	64	0.00%	25.00%	100.00%
69	0.00%	20.00%	25.00%	65	0.00%	100.00%	100.00%
70	50.00%	50.00%	100.00%	66	0.00%	100.00%	100.00%
71	50.00%	50.00%	100.00%	67	0.00%	100.00%	100.00%
72	50.00%	50.00%	100.00%	68	0.00%	100.00%	100.00%
73	50.00%	50.00%	100.00%	69	0.00%	100.00%	100.00%
74	50.00%	50.00%	100.00%	70+	100.00%	100.00%	100.00%
75+	100.00%	100.00%	100.00%				

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Retirement for members in PEPRA, Tier 6, are assumed to occur among eligible members in accordance with the sample rates below, from the full tables CALPERS Public Agency Miscellaneous 2% @ 62 table for General and the CALPERS Public Agency Safety Police 2.7% @ 57 table for Safety:

Rates of Retirement General (PEPRA) Years of Service				
Age	5	10	25	35
50-51	0.00%	0.00%	0.00%	0.00%
52	0.50%	0.80%	1.90%	3.80%
53	0.70%	1.10%	2.10%	4.80%
54	0.70%	1.10%	2.30%	5.40%
55	1.00%	1.90%	6.10%	15.20%
56	1.40%	2.60%	7.50%	16.70%
57	1.80%	2.90%	7.40%	14.30%
58	2.30%	3.50%	7.30%	13.50%
59	2.50%	3.80%	9.20%	17.50%
60	3.10%	5.10%	11.10%	18.30%
61	3.80%	5.80%	12.10%	23.20%
62	4.40%	7.40%	16.40%	27.10%
63	7.70%	10.50%	19.20%	26.60%
64	7.20%	10.10%	18.70%	27.60%
65	10.80%	14.10%	23.90%	34.80%
66	13.20%	17.20%	29.20%	42.60%
67	13.20%	17.20%	29.20%	40.50%
68	12.00%	15.60%	26.50%	38.70%
69	12.00%	15.60%	26.50%	36.80%
70	12.00%	15.60%	26.50%	38.70%
71	12.00%	15.60%	26.50%	38.70%
72	12.00%	15.60%	26.50%	38.70%
73	12.00%	15.60%	26.50%	38.70%
74	12.00%	15.60%	26.50%	38.70%
75+	100.00%	100.00%	100.00%	100.00%

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Rates of Retirement Safety (PEPRA) Years of Service				
Age	5	10	25	35
50	5.00%	5.00%	5.00%	11.00%
51	4.00%	4.00%	5.75%	13.92%
52	3.80%	3.80%	5.80%	13.21%
53	3.80%	3.80%	7.74%	28.98%
54	3.80%	3.80%	9.31%	33.25%
55	6.84%	6.84%	13.40%	38.76%
56	6.27%	6.27%	12.28%	34.49%
57	6.00%	6.00%	11.75%	32.00%
58	8.00%	8.00%	13.75%	35.00%
59	8.00%	8.00%	14.00%	40.00%
60	15.00%	15.00%	15.00%	35.00%
61	14.40%	14.40%	14.40%	26.40%
62	15.00%	15.00%	15.00%	33.00%
63	15.00%	15.00%	15.00%	40.00%
64	15.00%	15.00%	15.00%	52.50%
65+	100.00%	100.00%	100.00%	100.00%

29. Changes in Actuarial Assumptions

Details of all assumption changes can be found in the Actuarial Experience Study Report for the period covering July 1, 2015 through June 30, 2018. The proposed assumptions were summarized and reviewed with the Board at the January 22, 2019 Board meeting, at which the Board provided direction to proceed with the valuation based on those assumptions. Final adoption of these assumptions will be effective with the adoption of this Report.

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All actuarial calculations are based on our understanding of the statutes governing the StanCERA 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 StanCERA 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.

A. Definitions

Compensation: Compensation means the cash remuneration for services paid by the employer. It includes base pay and certain differential, incentive, and special pay allowances defined by the Board of Retirement. Overtime is excluded, with the exception of overtime paid under the Fair Labor Standards Act that is regular and recurring.

For Tier 6 (PEPRA) members, only pensionable compensation up to the PEPRA Compensation Limit will count for computing Plan benefits and employee contributions and employer contributions. For those participating in Social Security, the compensation cap is \$121,388 for calendar year 2018. For those not participating in Social Security, the compensation cap is \$145,666 for calendar year 2018. In addition, it is possible that some sources of compensation, such as any payments deemed to be terminal or special pays, may be excluded from the benefit and contribution computations for PEPRA members.

Credited Service: In general, Credited Service is earned for the period during which Member Contributions are paid. Since Tier 3 Members participate in a non-contributory Plan, their Credited Service is calculated based on their date of Membership only.

Temporary service for which the Member was not credited, or service for which the Member withdrew his or her Member Contributions, may be purchased by paying or repaying the Member Contributions with interest. The categories of services that credit may be purchased for are listed below:

- **Prior Part-time Service:** If a Member worked for an employer within the Association on a part-time or 'extra help' basis before his membership in the Retirement Association, the Member may buyback this service.
- **Intermittent Part-time Service**
- **Prior full time Service:** Member may buyback full time service that may have been cashed out upon termination.

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- **Leave of Absence (Including absence with State Disability or Worker's Compensation):** No unpaid leave of absence can be bought back except for absence due to medical reasons of up to one year.
- **Public Service:** Only Tier 1 and 4 Members may buy back this service.
- **Military Time:** Only Tier 1 and 4 Members may buy back this service.
- **Enhance Prior Tier Service:** Applies to certain active and deferred Members with Tier 1, 2, or 3 service.
- **Military "call up"**
- **AB 2766:** Only Safety Employees can buy back this service.

A percentage of credited sick leave may be credited according to the Member's applicable bargaining unit.

Final

Compensation: For Members belonging to Tier 2, Tier 3, and Tier 6, Final Compensation means the highest Compensation earned during any 36 consecutive months of the Member's employment. For all others, it is the highest Compensation earned during any twelve months of employment.

General Member: Any Member who is not a Safety Member is a General Member.

Safety Member: Any sworn Member engaged in law enforcement, probation, or fire suppression is a Safety Member.

B. Membership

Eligibility: All full-time, permanent employees of Stanislaus County, City of Ceres, Stanislaus County Superior Court, Salida Sanitary District, East Side Mosquito Abatement, Keyes Community Services, Hills Ferry Cemetery, and StanCOG hired on or after October 1, 1988 become Members on their date of appointment. All others hired before October 1, 1988 became Members on the first day of the calendar month following their date of appointment.

Detailed membership eligibility according to Tier and membership date is shown in Table 1 on the following page.

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C. Service Retirement

Eligibility: New members who meet the requirements to enter a legacy tier under PEPRA will enter Tier 2; all other new members will enter Tier 6.

Tier 3 General Members are eligible to retire at age 55 if they have earned 10 years of Credited Service. Tier 6 (PEPRA) General Members are eligible to retire at age 52 if they have earned five years of Credited Service. All other General Members are eligible to retire at age 50 if they have earned five years of Credited Service and have been an Association member for at least 10 years. Alternatively, General non-PEPRA Members are eligible to retire at any age after having earned 30 years of Credited Service, or upon reaching age 70 with no service requirement.

Safety Members are eligible to retire at age 50 if they have earned five years of Credited Service and have been an Association member for at least 10 years. Alternatively, Safety Members are eligible to retire at any age after having earned 20 years of Credited Service, or upon reaching age 70 with no service requirement. The 20-year Credited Service retirement eligibility is not applicable to Tier 6 (PEPRA) Safety Members, nor is the 10-year Association membership requirement.

Benefit Amount: The Service Retirement Benefit payable to the Member is equal to the Member's Final Compensation multiplied by credited service, the benefit factor from Table 1 and the age factor from Table 2 corresponding to the Member's code section. The appropriate code sections for each group are listed in Table 1. For Tier 3 members, the age factors are applied *after* the benefit amount as determined under Table 1 has been offset by the designated fraction of the member's projected age 65 Social Security benefit.

For Tier 3 Members with Credited Service up to 35 years, the percentage of Final Compensation may not exceed 70% and for those with more than 35 years, it may not exceed 80%. For all other non-PEPRA Members, the percentage of Final Compensation may not exceed 100%. For those members integrated with Social Security (other than Tiers 3 and 6), Retirement Benefits based on the first \$350 of monthly Final Average Compensation are reduced by one-third.

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Table 1: Member Group Descriptions

Group	Open or Closed	FAP	Max Cola	Code Section	Description	Top Retirement Factor Age	Benefit Factor
General Tier I	Closed	1	3	31676.12	2% at 57	62	2.00%
General Tier II	Open	3	3	31676.1	2% at 62	65	1.67%
General Tier III	Closed	3	0	31499.14	Non-Contributory	65	First 35 Years: 2.0% of FAS less 1/35 th of Social Security benefit at age 65. Next 10 Years: 1% of FAS
General Tier IV	Closed	1	3	31676.14	2% at 55	65	1.67%
General Tier V	Closed	1	3	31676.14	2% at 55	65	1.67%
General Tier VI	Open	3	3	7522.2	PEPRA	67	1.00%
Safety Tier II	Open	3	3	31664	2% at 50	50	2.00%
Safety Tier IV	Closed	1	3	31664.1	3% at 50	50	3.00%
Safety Tier V	Closed	1	3	31664.1	3% at 50	50	3.00%
Safety Tier VI	Open	3	3	7522.25 (2)	PEPRA	57	1.00%

Table 2: Age Factors

Age	Safety 2% at Age 50 CERL §: 31664	Safety 3% at Age 50 CERL §: 31664.1	Safety PEPRA GC §: 7522.25 Opt2	General 2% at Age 62 CERL §: 31676.1	General 2% at Age 57 CERL §: 31676.12	General 2% at Age 55 CERL §: 31676.14	General 2% at Age 65 CERL §: 31499.14	General PEPRA GC §: 7522.20
41	0.6258	0.6258	N/A	N/A	N/A	N/A	N/A	N/A
42	0.6625	0.6625	N/A	N/A	N/A	N/A	N/A	N/A
43	0.7004	0.7004	N/A	N/A	N/A	N/A	N/A	N/A
44	0.7397	0.7397	N/A	N/A	N/A	N/A	N/A	N/A
45	0.7805	0.7805	N/A	N/A	N/A	N/A	N/A	N/A
46	0.8226	0.8226	N/A	N/A	N/A	N/A	N/A	N/A
47	0.8678	0.8678	N/A	N/A	N/A	N/A	N/A	N/A
48	0.9085	0.9085	N/A	N/A	N/A	N/A	N/A	N/A
49	0.9522	0.9522	N/A	N/A	N/A	N/A	N/A	N/A
50	1.0000	1.0000	2.0000	0.7091	0.6681	0.8850	N/A	N/A
51	1.0516	1.0000	2.1000	0.7457	0.7056	0.9399	N/A	N/A
52	1.1078	1.0000	2.2000	0.7816	0.7454	1.0000	N/A	1.0000
53	1.1692	1.0000	2.3000	0.8181	0.7882	1.0447	N/A	1.1000
54	1.2366	1.0000	2.4000	0.8556	0.8346	1.1048	N/A	1.2000
55	1.3099	1.0000	2.5000	0.8954	0.8850	1.1686	0.3900	1.3000
56	1.3099	1.0000	2.6000	0.9382	0.9399	1.2365	0.4300	1.4000
57	1.3099	1.0000	2.7000	0.9846	1.0000	1.3093	0.4700	1.5000
58	1.3099	1.0000	2.7000	1.0350	1.0447	1.3608	0.5100	1.6000
59	1.3099	1.0000	2.7000	1.0899	1.1048	1.4123	0.5600	1.7000
60	1.3099	1.0000	2.7000	1.1500	1.1686	1.4638	0.6100	1.8000
61	1.3099	1.0000	2.7000	1.1947	1.2365	1.5153	0.6700	1.9000
62	1.3099	1.0000	2.7000	1.2548	1.3093	1.5668	0.7400	2.0000
63	1.3099	1.0000	2.7000	1.3186	1.3093	1.5668	0.8200	2.1000
64	1.3099	1.0000	2.7000	1.3865	1.3093	1.5668	0.9000	2.2000
65	1.3099	1.0000	2.7000	1.4593	1.3093	1.5668	1.0000	2.3000
66	1.3099	1.0000	2.7000	1.4593	1.3093	1.5668	1.0000	2.4000
67	1.3099	1.0000	2.7000	1.4593	1.3093	1.5668	1.0000	2.5000

Form of Benefit: The Service Retirement Benefit will be paid monthly beginning at retirement and for the life of the Member. If the member selects the unmodified benefit form, in the event of the Member's death 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. For Tier 3 Members, the benefit payable to beneficiary is limited to 50%. In the event there is no surviving spouse or minor children, any unpaid remainder of

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the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, benefits for all retired members other than those in Tier 3 are adjusted to reflect changes in the CPI for the San Francisco Bay Area since the prior year. Benefits may be increased or decreased, but the cumulative changes shall never reduce the benefit below the original monthly allowance. Annual increases may not exceed the COLA figures shown in Table 1, but CPI increases above this figure are "banked" and used for future increases when the CPI increases by less than the figures shown.

In addition, ad hoc cost of living adjustments have been granted in the past and may be granted in the future.

A lump sum benefit of \$5,000 will be payable upon the death of a retired member. No death benefit is payable for Tier 3 retired members.

D. Service-Connected Disability

Eligibility: All non-Tier 3 Members are eligible for Service-Connected Disability Retirement benefits at any age if they are permanently disabled as a result of injuries or illness sustained in the line of duty. Tier 3 Members are not eligible to receive disability benefits.

Benefit Amount: The Service-Connected Disability Retirement Benefit payable to Members is equal to the greater of 50% of their Final Compensation or – if the Member is eligible at disability for a Service Retirement Benefit – the Service Retirement Benefit accrued on the date of disability.

Form of Benefit: The Service-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement and for the life of the Member; in the event of the Member's death, 100% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available. A lump sum benefit of \$5,000 will be payable upon the death of the member.

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E. Nonservice-Connected Disability

Eligibility: Tier 3 Members are not eligible to receive disability benefits. All other Members are eligible for Nonservice-Connected Disability Retirement benefits if they are permanently disabled at any age after earning five years of Credited Service.

Benefit Amount: The Nonservice-Connected Disability Retirement Benefit payable to Tier 1 General Members is equal to the greatest of:

- 1.8% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.8% of Final Compensation at disability multiplied by years of Credited Service projected to age 62, but not to exceed one-third of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

The Nonservice-Connected Disability Retirement Benefit payable to Tiers 2, 4, 5, and 6 General Members is equal to the greatest of:

- 1.5% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.5% of Final Compensation at disability multiplied by years of Credited Service projected to age 65, but not to exceed one-third of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

The Nonservice-Connected Disability Retirement Benefit payable to Safety Members is equal to the greatest of:

- 1.8% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.8% of Final Compensation at disability multiplied by years of Credited Service projected to age 55, but not to exceed one-third of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

Form of Benefit: The Nonservice-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement, and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. In the event there is no

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surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available. A lump sum benefit of \$5,000 will be payable upon the death of the member.

F. Death Benefit

Eligibility: A Tier 3 Member's survivors are not eligible to receive death benefits. All other Members' survivors are eligible to receive different Death benefits dependent on the Member's cause of death and retirement eligibility.

Benefit Amount: In the event the Member's death resulted from injury or illness sustained in connection with the Member's duties, the Death Benefit payable to a surviving spouse, domestic partner, or eligible dependent children will be the greater of 50% of the Member's Final Compensation at the time of death or the Service Retirement Benefit.

In the event the Member's death did not result from injury or illness sustained in connection with the Member's duties and at the time of death, the Member was eligible for Service Retirement or Non-Service Connected Disability (i.e. the employee was employed at least five years), the Death Benefit payable to the spouse, partner or children will be 60% of the survivor benefit based on benefit due on Member's date of death.

In all other cases, the designated beneficiary (not necessarily a spouse/partner/child) will receive a refund of the Member's contributions with interest plus one month of Final Compensation for each year of service to a maximum of six years.

Form of Benefit: Annuity death benefits will be paid monthly beginning at the Member's death and for the life of the surviving spouse/partner or to the age of majority of dependent minor children if there is no spouse/partner. Lump sum benefits will be paid as described above.

COLA adjustments (as described for the annuity benefits) are also available.

G. Withdrawal Benefits

Eligibility: Tier 3 Members are not eligible to receive withdrawal benefits. All other Members are eligible for a Withdrawal Benefit upon termination of employment, if not eligible to receive or electing to waive a monthly benefit.

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Benefit Amount: The Withdrawal Benefit is a refund of the Member's accumulated Contributions with interest. Upon receipt of the Withdrawal Benefit, the Member forfeits all Credited Service.

Form of Benefit: The Withdrawal Benefit is paid in a lump sum upon election by the Member.

H. Deferred Vested Benefit

Eligibility: A Member is eligible for a Deferred Vested Benefit upon termination of employment after earning five years of Credited Service, including reciprocity service from another system. For Tier 3 Members, the vesting requirement is 10 years of Credited Service.

The Member must leave his or her Member Contributions with interest on deposit with the Plan. This requirement does not apply to Tier 3 Members since they participate in a non-contributory Plan.

Benefit Amount: The Deferred Vested Benefit is computed in the same manner as the Service Retirement Benefit, but it is based on Credited Service and Final Compensation on the date of termination.

Form of Benefit: The Deferred Vested Benefit will be paid monthly beginning at retirement and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. For Tier 3 Members, the benefit payable to beneficiary is limited to 50%. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available. A lump sum benefit of \$5,000 will be payable upon the death of the member. No death benefit is payable for Tier 3 retired members.

I. Reciprocal Benefit

Eligibility: A Member is eligible for a Reciprocal Benefit upon termination of employment after earning five years of Credited Service and entry, within a specified period of time, into another retirement system recognized as a reciprocal system by the Plan. For Tier 3 Members, the vesting requirement is 10 years of Credited Service.

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The Member must leave his or her Member Contributions with interest on deposit with the Plan. This requirement does not apply to Tier 3 Members since they participate in a non-contributory Plan.

Benefit Amount: The Reciprocal Benefit is computed in the same manner as the Service Retirement Benefit, but it is based on Credited Service on the date of termination and Final Compensation on the date of retirement; Final Compensation is based on the highest of the Compensation earned under this Plan or the reciprocal plan.

Form of Benefit: The Reciprocal Benefit will be paid monthly beginning at retirement and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. For Tier 3 Members, the benefit payable to beneficiary is limited to 50%. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms and COLA adjustments (as described for the Service Retirement benefit) are also available.

A lump sum benefit of \$5,000 will be payable upon the death of the member. No death benefit is payable for Tier 3 retired members.

J. Optional Benefit Forms

Prior to retirement, a member may elect to convert his retirement allowance into a benefit of equivalent Actuarial Value in accordance with one of the optional forms described below.

1. A reduced retirement allowance payable during his life with the provision that on his death the excess, if any, of his accumulated deductions at the time of retirement over the annuity payments made to him will be paid to his designated beneficiary or estate; or
2. A reduced retirement allowance payable during his life with the provision that after his death the reduced allowance will be continued for life to the beneficiary designated by him at the time of his retirement; or
3. A reduced retirement allowance payable during his life with the provision that after his death an allowance of one-half of his reduced allowance will be continued for life to the beneficiary designated by him at the time of his retirement.

In addition, a member participating in Social Security may elect to receive an increased monthly allowance before age 62 (earliest possible receipt of Social Security benefits) and then take a reduced monthly allowance at age 62 and after. This option will not affect any

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monthly payments payable to a beneficiary. This option is not available to those receiving a disability benefit.

K. Member Contributions

Other than Tiers 3 and 6, all Members contribute a percentage of Compensation to the Plan through payroll deduction. The percentage contributed depends on the Member's nearest age upon joining the Plan. Members do not contribute after earning 30 years of Credited Service.

Tier 6 (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, including COLA; General and Safety members will pay different rates. Members will continue to contribute after earnings 30 years of service.

City of Ceres members in Tiers 1 and 4 pay the Tier 2 and 5 rates ("Full" rates), rather than the rates for their respective Tiers ("Half" rates).

Interest is credited semiannually to each Member's accumulated contributions. The crediting rate is set by the Board; the current annual rate is 0.25%.

The employee contribution rates are shown in the Appendix E.

L. Changes in Plan Provisions

No change

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 that will not be paid by future Normal Costs. It represents the value of the past Normal Costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

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

6. Actuarial Valuation

The determination, as of a specified date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

7. Actuarial Value of Assets

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

APPENDIX D – GLOSSARY

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 that 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. The Unfunded Actuarial Liability is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling StanCERA's benefit obligation in the event of a plan termination or other similar action. However, it is an appropriate measure for assessing the need for or the amount of future contributions.

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APPENDIX E – MEMBER CONTRIBUTION RATES

Employee Normal contribution rates vary by benefit formula as defined in the CERL and described in the table below, with the exception that City of Ceres members in Tiers 1 and 4 pay the Tier 2 and 5 rates (“Full” rates), rather than the rates for their respective Tiers (“Half” rates).

Plan/Tier	Code Section	Member Contribution Provides Average Annuity
General Tier 1	31621.5	1/200th of Final Average Salary (FAS) at age 60
General Tier 2	31621	1/120th of Final Average Salary (FAS) at age 60
General Tier 3	NA	NA
General Tier 4	31621.3	1/240th of Final Average Salary (FAS) at age 55
General Tier 5	31621.9	1/120th of Final Average Salary (FAS) at age 55
Safety Tier 2	31639.25	1/100th of Final Average Salary (FAS) at age 50
Safety Tier 4	31639.5	1/200th of Final Average Salary (FAS) at age 50
Safety Tier 5	31639.25	1/100th of Final Average Salary (FAS) at age 50

Employee COLA contribution rates are determined based on 50% of the normal cost associated with the expected COLA benefits, including all forms of decrement and the value of any assumed joint and survivor benefits, determined for each individual entry age. Similar to the benefit formulas, for those members integrated with Social Security (other than Tiers 3 and 6), contributions based on the first \$350 of monthly compensation are reduced by one-third.

The rates were changed following the Experience Study covering the period June 30, 2015 through June 30, 2018. The current employee contribution rates are shown in the following tables, and were determined based on the assumptions used in the current actuarial valuation. These assumptions include an interest rate of 7.00% per annum, an average salary increase of 3.00% per year (plus longevity and promotion increases), and the CalPERS mortality tables with adjustment as specified in the Appendix B and projected using Scale MP-2018 from 2009 to 2040 for General members and to 2040 for Safety members. The projection periods are based upon the duration of liabilities for the respective groups as of June 30, 2018. The rates are blended using a male/female weighting of 25% male / 75% female for General members, and 80% male / 20% female for Safety members.

Basic and COLA rates were determined based on an assumption that members would cease making contributions after 30 years of service. Basic and COLA rates include the value of the accumulated vacation time load, except that the load is not applied when calculating the Basic rates for members with less than three years of service.

Employee contribution rates for Tier 6 (PEPRA) members are determined based on half the Normal Cost (including COLA) for the PEPRA members, computed separately for General and Safety members, and for County and Ceres / Other District members. Due to the passage of SB13, contribution rates for PEPRA members are not rounded, and are recomputed each year.

The member contribution rates shown in this appendix apply only to pensionable compensation (up to the PEPRA Compensation Limits for PEPRA members).

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Entry Age	General Tier 1							
	Basic First \$350	Basic Over \$350	COL First \$350	COL Over \$350	Total First \$350	Total Over \$350	Prior Total First \$350	Prior Total Over \$350
16	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%	3.38%	5.08%
17	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%	3.38%	5.08%
18	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%	3.38%	5.08%
19	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%	3.38%	5.08%
20	2.30%	3.45%	1.16%	1.74%	3.46%	5.19%	3.38%	5.08%
21	2.32%	3.48%	1.19%	1.78%	3.51%	5.26%	3.43%	5.15%
22	2.34%	3.51%	1.21%	1.82%	3.55%	5.33%	3.48%	5.22%
23	2.35%	3.53%	1.24%	1.86%	3.59%	5.39%	3.52%	5.28%
24	2.37%	3.55%	1.27%	1.91%	3.64%	5.46%	3.56%	5.34%
25	2.38%	3.57%	1.30%	1.95%	3.68%	5.52%	3.60%	5.41%
26	2.39%	3.58%	1.33%	1.99%	3.71%	5.57%	3.64%	5.46%
27	2.40%	3.59%	1.36%	2.04%	3.76%	5.63%	3.68%	5.52%
28	2.40%	3.60%	1.39%	2.08%	3.79%	5.68%	3.72%	5.58%
29	2.40%	3.61%	1.41%	2.12%	3.82%	5.73%	3.75%	5.62%
30	2.41%	3.61%	1.44%	2.16%	3.85%	5.77%	3.78%	5.67%
31	2.45%	3.68%	1.47%	2.20%	3.92%	5.88%	3.86%	5.79%
32	2.51%	3.76%	1.50%	2.25%	4.01%	6.01%	3.94%	5.92%
33	2.56%	3.84%	1.53%	2.29%	4.08%	6.13%	4.03%	6.04%
34	2.61%	3.91%	1.56%	2.34%	4.17%	6.25%	4.12%	6.17%
35	2.66%	3.99%	1.60%	2.40%	4.26%	6.39%	4.21%	6.31%
36	2.72%	4.08%	1.64%	2.46%	4.36%	6.54%	4.30%	6.46%
37	2.77%	4.16%	1.69%	2.53%	4.46%	6.69%	4.40%	6.60%
38	2.83%	4.25%	1.73%	2.59%	4.56%	6.84%	4.50%	6.75%
39	2.89%	4.34%	1.77%	2.66%	4.66%	7.00%	4.60%	6.90%
40	2.95%	4.43%	1.81%	2.72%	4.77%	7.15%	4.70%	7.06%
41	3.01%	4.52%	1.85%	2.77%	4.86%	7.29%	4.79%	7.19%
42	3.08%	4.62%	1.88%	2.82%	4.96%	7.44%	4.89%	7.33%
43	3.15%	4.72%	1.91%	2.87%	5.06%	7.59%	4.98%	7.47%
44	3.22%	4.82%	1.94%	2.91%	5.16%	7.73%	5.07%	7.61%
45	3.29%	4.93%	1.97%	2.95%	5.26%	7.88%	5.16%	7.74%
46	3.37%	5.05%	2.00%	3.00%	5.37%	8.05%	5.26%	7.89%
47	3.45%	5.17%	2.02%	3.03%	5.47%	8.20%	5.35%	8.03%
48	3.53%	5.30%	2.05%	3.07%	5.58%	8.37%	5.45%	8.17%
49	3.62%	5.42%	2.06%	3.09%	5.68%	8.51%	5.53%	8.30%
50	3.70%	5.55%	2.07%	3.11%	5.77%	8.66%	5.62%	8.44%
51	3.78%	5.67%	2.07%	3.11%	5.85%	8.78%	5.71%	8.57%
52	3.86%	5.79%	2.05%	3.07%	5.91%	8.86%	5.76%	8.65%
53	3.91%	5.87%	1.99%	2.99%	5.91%	8.86%	5.80%	8.70%
54	3.94%	5.91%	1.96%	2.94%	5.90%	8.85%	5.84%	8.75%
55	3.92%	5.88%	1.92%	2.88%	5.84%	8.76%	5.86%	8.78%
56	3.90%	5.85%	1.84%	2.76%	5.74%	8.61%	5.82%	8.74%
57	3.88%	5.82%	1.71%	2.57%	5.59%	8.39%	5.71%	8.56%
58	3.82%	5.73%	1.67%	2.51%	5.49%	8.24%	5.53%	8.29%
59+	3.80%	5.70%	1.65%	2.47%	5.45%	8.17%	5.46%	8.18%

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APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	General Tier 2							
	Basic First \$350	Basic Over \$350	COL First \$350	COL Over \$350	Total First \$350	Total Over \$350	Prior Total First \$350	Prior Total Over \$350
16	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%	4.46%	6.69%
17	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%	4.46%	6.69%
18	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%	4.46%	6.69%
19	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%	4.46%	6.69%
20	3.69%	5.53%	0.95%	1.42%	4.63%	6.95%	4.46%	6.69%
21	3.71%	5.57%	0.97%	1.45%	4.68%	7.02%	4.51%	6.77%
22	3.74%	5.61%	0.99%	1.48%	4.73%	7.09%	4.56%	6.83%
23	3.76%	5.65%	1.01%	1.51%	4.77%	7.16%	4.60%	6.90%
24	3.79%	5.68%	1.03%	1.54%	4.81%	7.22%	4.64%	6.96%
25	3.81%	5.71%	1.05%	1.57%	4.85%	7.28%	4.68%	7.02%
26	3.82%	5.73%	1.07%	1.61%	4.89%	7.34%	4.72%	7.08%
27	3.83%	5.75%	1.09%	1.64%	4.93%	7.39%	4.76%	7.14%
28	3.84%	5.76%	1.12%	1.68%	4.96%	7.44%	4.79%	7.19%
29	3.85%	5.77%	1.14%	1.71%	4.99%	7.48%	4.82%	7.22%
30	3.85%	5.77%	1.17%	1.75%	5.02%	7.52%	4.84%	7.27%
31	3.93%	5.89%	1.19%	1.79%	5.12%	7.68%	4.94%	7.42%
32	4.01%	6.01%	1.22%	1.83%	5.23%	7.84%	5.05%	7.58%
33	4.09%	6.14%	1.25%	1.87%	5.34%	8.01%	5.16%	7.74%
34	4.17%	6.26%	1.28%	1.92%	5.45%	8.18%	5.27%	7.90%
35	4.26%	6.39%	1.31%	1.96%	5.57%	8.35%	5.38%	8.07%
36	4.35%	6.52%	1.34%	2.01%	5.69%	8.53%	5.50%	8.25%
37	4.44%	6.66%	1.38%	2.07%	5.82%	8.73%	5.61%	8.42%
38	4.53%	6.80%	1.41%	2.12%	5.94%	8.92%	5.74%	8.61%
39	4.63%	6.94%	1.45%	2.17%	6.07%	9.11%	5.86%	8.79%
40	4.72%	7.09%	1.49%	2.23%	6.21%	9.32%	5.98%	8.98%
41	4.82%	7.24%	1.51%	2.26%	6.33%	9.50%	6.10%	9.15%
42	4.93%	7.39%	1.53%	2.30%	6.46%	9.69%	6.22%	9.33%
43	5.03%	7.55%	1.56%	2.34%	6.59%	9.89%	6.34%	9.50%
44	5.15%	7.72%	1.58%	2.37%	6.73%	10.09%	6.45%	9.68%
45	5.26%	7.89%	1.61%	2.41%	6.87%	10.30%	6.58%	9.86%
46	5.39%	8.08%	1.63%	2.44%	7.01%	10.52%	6.70%	10.05%
47	5.51%	8.26%	1.65%	2.47%	7.16%	10.73%	6.83%	10.24%
48	5.63%	8.45%	1.67%	2.51%	7.31%	10.96%	6.96%	10.45%
49	5.75%	8.63%	1.69%	2.54%	7.45%	11.17%	7.10%	10.65%
50	5.87%	8.80%	1.71%	2.56%	7.58%	11.36%	7.23%	10.85%
51	5.97%	8.95%	1.72%	2.58%	7.69%	11.53%	7.36%	11.04%
52	6.04%	9.06%	1.73%	2.59%	7.77%	11.65%	7.47%	11.21%
53	6.06%	9.09%	1.72%	2.58%	7.78%	11.67%	7.56%	11.35%
54	6.05%	9.07%	1.71%	2.56%	7.75%	11.63%	7.63%	11.44%
55	6.02%	9.02%	1.67%	2.51%	7.69%	11.53%	7.64%	11.46%
56	5.98%	8.97%	1.61%	2.42%	7.60%	11.39%	7.58%	11.36%
57	5.95%	8.93%	1.51%	2.26%	7.46%	11.19%	7.44%	11.16%
58	6.13%	9.19%	1.47%	2.21%	7.60%	11.40%	7.54%	11.30%
59+	6.33%	9.50%	1.45%	2.17%	7.78%	11.67%	7.72%	11.58%

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Entry Age	General Tier 4							
	Basic First \$350	Basic Over \$350	COL First \$350	COL Over \$350	Total First \$350	Total Over \$350	Prior Total First \$350	Prior Total Over \$350
16	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%	3.25%	4.88%
17	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%	3.25%	4.88%
18	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%	3.25%	4.88%
19	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%	3.25%	4.88%
20	2.09%	3.13%	1.23%	1.85%	3.32%	4.98%	3.25%	4.88%
21	2.10%	3.15%	1.27%	1.90%	3.36%	5.05%	3.29%	4.94%
22	2.10%	3.16%	1.29%	1.94%	3.40%	5.10%	3.33%	4.99%
23	2.11%	3.16%	1.32%	1.98%	3.43%	5.14%	3.36%	5.05%
24	2.11%	3.17%	1.35%	2.02%	3.46%	5.19%	3.39%	5.09%
25	2.11%	3.17%	1.38%	2.07%	3.49%	5.24%	3.42%	5.13%
26	2.16%	3.23%	1.41%	2.11%	3.56%	5.34%	3.50%	5.24%
27	2.20%	3.30%	1.43%	2.14%	3.63%	5.44%	3.56%	5.35%
28	2.25%	3.37%	1.45%	2.18%	3.70%	5.55%	3.63%	5.45%
29	2.29%	3.44%	1.48%	2.22%	3.77%	5.66%	3.70%	5.55%
30	2.34%	3.51%	1.51%	2.26%	3.85%	5.77%	3.78%	5.67%
31	2.39%	3.58%	1.53%	2.30%	3.92%	5.88%	3.86%	5.79%
32	2.44%	3.65%	1.57%	2.35%	4.00%	6.00%	3.94%	5.91%
33	2.49%	3.73%	1.59%	2.39%	4.08%	6.12%	4.02%	6.04%
34	2.54%	3.81%	1.63%	2.45%	4.17%	6.26%	4.11%	6.17%
35	2.59%	3.89%	1.67%	2.51%	4.27%	6.40%	4.20%	6.30%
36	2.65%	3.97%	1.71%	2.57%	4.36%	6.54%	4.30%	6.44%
37	2.70%	4.06%	1.76%	2.64%	4.46%	6.70%	4.39%	6.59%
38	2.76%	4.14%	1.80%	2.70%	4.56%	6.84%	4.49%	6.74%
39	2.82%	4.24%	1.85%	2.77%	4.67%	7.01%	4.59%	6.89%
40	2.89%	4.33%	1.89%	2.84%	4.78%	7.17%	4.70%	7.05%
41	2.96%	4.43%	1.92%	2.88%	4.88%	7.31%	4.79%	7.18%
42	3.03%	4.54%	1.95%	2.92%	4.97%	7.46%	4.87%	7.31%
43	3.10%	4.65%	1.98%	2.97%	5.08%	7.62%	4.97%	7.45%
44	3.17%	4.76%	2.00%	3.00%	5.17%	7.76%	5.06%	7.59%
45	3.25%	4.87%	2.03%	3.04%	5.27%	7.91%	5.15%	7.73%
46	3.32%	4.98%	2.05%	3.07%	5.36%	8.05%	5.25%	7.87%
47	3.39%	5.08%	2.07%	3.10%	5.46%	8.18%	5.33%	8.00%
48	3.44%	5.16%	2.08%	3.12%	5.52%	8.28%	5.42%	8.13%
49	3.46%	5.19%	2.09%	3.13%	5.55%	8.32%	5.49%	8.23%
50	3.44%	5.16%	2.09%	3.13%	5.53%	8.29%	5.54%	8.31%
51	3.42%	5.14%	2.09%	3.13%	5.51%	8.27%	5.56%	8.34%
52	3.41%	5.11%	2.05%	3.08%	5.46%	8.19%	5.54%	8.32%
53	3.36%	5.03%	2.00%	3.00%	5.36%	8.03%	5.37%	8.05%
54+	3.34%	5.01%	1.97%	2.95%	5.30%	7.96%	5.31%	7.96%

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

APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	General Tier 5							
	Basic First \$350	Basic Over \$350	COL First \$350	COL Over \$350	Total First \$350	Total Over \$350	Prior Total First \$350	Prior Total Over \$350
16	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%	5.30%	7.95%
17	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%	5.30%	7.95%
18	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%	5.30%	7.95%
19	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%	5.30%	7.95%
20	4.18%	6.26%	1.23%	1.85%	5.41%	8.11%	5.30%	7.95%
21	4.19%	6.29%	1.27%	1.90%	5.46%	8.19%	5.35%	8.02%
22	4.21%	6.31%	1.29%	1.94%	5.50%	8.25%	5.39%	8.08%
23	4.22%	6.33%	1.32%	1.98%	5.54%	8.31%	5.43%	8.14%
24	4.22%	6.33%	1.35%	2.02%	5.57%	8.35%	5.46%	8.19%
25	4.22%	6.34%	1.38%	2.07%	5.60%	8.41%	5.49%	8.23%
26	4.31%	6.47%	1.41%	2.11%	5.72%	8.58%	5.60%	8.41%
27	4.40%	6.60%	1.43%	2.14%	5.83%	8.74%	5.71%	8.57%
28	4.49%	6.74%	1.45%	2.18%	5.94%	8.92%	5.83%	8.74%
29	4.58%	6.87%	1.48%	2.22%	6.06%	9.09%	5.94%	8.91%
30	4.68%	7.02%	1.51%	2.26%	6.18%	9.28%	6.06%	9.09%
31	4.77%	7.16%	1.53%	2.30%	6.31%	9.46%	6.18%	9.28%
32	4.87%	7.31%	1.57%	2.35%	6.44%	9.66%	6.31%	9.46%
33	4.97%	7.46%	1.59%	2.39%	6.57%	9.85%	6.44%	9.66%
34	5.08%	7.62%	1.63%	2.45%	6.71%	10.07%	6.58%	9.87%
35	5.18%	7.78%	1.67%	2.51%	6.86%	10.29%	6.71%	10.07%
36	5.29%	7.94%	1.71%	2.57%	7.01%	10.51%	6.86%	10.29%
37	5.41%	8.11%	1.76%	2.64%	7.17%	10.75%	7.01%	10.51%
38	5.53%	8.29%	1.80%	2.70%	7.33%	10.99%	7.16%	10.74%
39	5.65%	8.47%	1.85%	2.77%	7.50%	11.24%	7.31%	10.97%
40	5.78%	8.66%	1.89%	2.84%	7.67%	11.50%	7.47%	11.21%
41	5.91%	8.87%	1.92%	2.88%	7.83%	11.75%	7.62%	11.43%
42	6.05%	9.08%	1.95%	2.92%	8.00%	12.00%	7.76%	11.64%
43	6.20%	9.30%	1.98%	2.97%	8.18%	12.27%	7.92%	11.87%
44	6.35%	9.52%	2.00%	3.00%	8.35%	12.52%	8.07%	12.10%
45	6.49%	9.74%	2.03%	3.04%	8.52%	12.78%	8.23%	12.34%
46	6.64%	9.95%	2.05%	3.07%	8.68%	13.02%	8.40%	12.60%
47	6.78%	10.17%	2.07%	3.10%	8.84%	13.27%	8.55%	12.82%
48	6.87%	10.31%	2.08%	3.12%	8.95%	13.43%	8.71%	13.06%
49	6.92%	10.38%	2.09%	3.13%	9.01%	13.51%	8.83%	13.25%
50	6.89%	10.33%	2.09%	3.13%	8.97%	13.46%	8.94%	13.40%
51	6.85%	10.27%	2.09%	3.13%	8.94%	13.40%	8.99%	13.49%
52	6.81%	10.22%	2.05%	3.08%	8.87%	13.30%	8.98%	13.47%
53	6.71%	10.07%	2.00%	3.00%	8.71%	13.07%	8.68%	13.02%
54+	6.67%	10.01%	1.97%	2.95%	8.64%	12.96%	8.59%	12.88%

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

APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	Basic		COL		Safety Tier 2 Total		Prior Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
20	4.95%	7.43%	1.70%	2.55%	6.65%	9.98%	6.74%	10.10%
21	5.06%	7.58%	1.77%	2.66%	6.83%	10.24%	6.91%	10.37%
22	5.16%	7.74%	1.82%	2.73%	6.98%	10.47%	7.08%	10.61%
23	5.26%	7.89%	1.87%	2.81%	7.14%	10.70%	7.25%	10.87%
24	5.37%	8.05%	1.93%	2.89%	7.30%	10.94%	7.41%	11.12%
25	5.48%	8.22%	1.98%	2.97%	7.46%	11.19%	7.58%	11.38%
26	5.59%	8.38%	2.03%	3.04%	7.62%	11.42%	7.76%	11.64%
27	5.70%	8.55%	2.08%	3.12%	7.78%	11.67%	7.94%	11.91%
28	5.82%	8.73%	2.14%	3.21%	7.96%	11.94%	8.12%	12.18%
29	5.94%	8.91%	2.19%	3.29%	8.13%	12.20%	8.31%	12.47%
30	6.06%	9.09%	2.25%	3.37%	8.31%	12.46%	8.51%	12.77%
31	6.19%	9.28%	2.31%	3.47%	8.50%	12.75%	8.72%	13.08%
32	6.32%	9.47%	2.37%	3.56%	8.69%	13.03%	8.92%	13.39%
33	6.45%	9.67%	2.43%	3.65%	8.88%	13.32%	9.14%	13.71%
34	6.59%	9.88%	2.49%	3.73%	9.07%	13.61%	9.35%	14.03%
35	6.73%	10.10%	2.54%	3.81%	9.27%	13.91%	9.57%	14.36%
36	6.88%	10.32%	2.58%	3.87%	9.46%	14.19%	9.79%	14.68%
37	7.03%	10.55%	2.61%	3.92%	9.64%	14.47%	10.00%	15.00%
38	7.18%	10.77%	2.66%	3.99%	9.84%	14.76%	10.22%	15.33%
39	7.32%	10.98%	2.71%	4.06%	10.03%	15.04%	10.44%	15.66%
40	7.45%	11.18%	2.76%	4.14%	10.21%	15.32%	10.66%	16.00%
41	7.58%	11.37%	2.77%	4.15%	10.34%	15.52%	10.83%	16.24%
42	7.70%	11.54%	2.77%	4.15%	10.46%	15.69%	10.98%	16.47%
43	7.79%	11.69%	2.76%	4.14%	10.55%	15.83%	11.11%	16.66%
44	7.86%	11.78%	2.75%	4.13%	10.61%	15.91%	11.19%	16.78%
45	7.87%	11.80%	2.74%	4.11%	10.61%	15.91%	11.21%	16.81%
46	7.83%	11.74%	2.75%	4.12%	10.58%	15.86%	11.20%	16.79%
47	7.74%	11.61%	2.75%	4.12%	10.49%	15.73%	11.13%	16.70%
48	7.95%	11.93%	2.75%	4.13%	10.70%	16.06%	11.33%	17.00%
49+	8.22%	12.32%	2.75%	4.13%	10.97%	16.45%	11.62%	17.43%

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

APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	Safety Tier 4							
	Basic First \$350	Basic Over \$350	COL First \$350	COL Over \$350	Total First \$350	Total Over \$350	Prior Total First \$350	Prior Total Over \$350
20	2.59%	3.89%	2.35%	3.53%	4.95%	7.42%	5.09%	7.63%
21	2.65%	3.97%	2.45%	3.67%	5.09%	7.64%	5.24%	7.87%
22	2.70%	4.05%	2.51%	3.77%	5.21%	7.82%	5.38%	8.07%
23	2.75%	4.13%	2.57%	3.86%	5.33%	7.99%	5.51%	8.26%
24	2.81%	4.22%	2.63%	3.95%	5.44%	8.17%	5.64%	8.45%
25	2.87%	4.30%	2.69%	4.04%	5.56%	8.34%	5.77%	8.65%
26	2.93%	4.39%	2.75%	4.13%	5.68%	8.52%	5.90%	8.85%
27	2.98%	4.48%	2.81%	4.22%	5.80%	8.70%	6.03%	9.04%
28	3.05%	4.57%	2.87%	4.31%	5.92%	8.88%	6.16%	9.25%
29	3.11%	4.66%	2.93%	4.39%	6.03%	9.05%	6.30%	9.45%
30	3.17%	4.76%	2.95%	4.42%	6.12%	9.18%	6.40%	9.60%
31	3.24%	4.86%	2.96%	4.44%	6.20%	9.30%	6.52%	9.77%
32	3.31%	4.96%	3.01%	4.52%	6.32%	9.48%	6.66%	9.98%
33	3.38%	5.06%	3.07%	4.60%	6.44%	9.66%	6.80%	10.20%
34	3.45%	5.17%	3.12%	4.68%	6.57%	9.85%	6.95%	10.43%
35	3.52%	5.28%	3.18%	4.77%	6.70%	10.05%	7.11%	10.67%
36	3.60%	5.40%	3.22%	4.83%	6.82%	10.23%	7.26%	10.88%
37	3.68%	5.52%	3.27%	4.90%	6.95%	10.42%	7.42%	11.13%
38	3.77%	5.65%	3.32%	4.98%	7.09%	10.63%	7.59%	11.39%
39	3.85%	5.78%	3.37%	5.06%	7.23%	10.84%	7.77%	11.65%
40	3.93%	5.90%	3.44%	5.16%	7.37%	11.06%	7.95%	11.93%
41	4.01%	6.01%	3.39%	5.09%	7.40%	11.10%	8.02%	12.03%
42	4.08%	6.12%	3.35%	5.03%	7.43%	11.15%	8.09%	12.13%
43	4.15%	6.23%	3.32%	4.98%	7.47%	11.21%	8.17%	12.25%
44	4.22%	6.33%	3.29%	4.94%	7.52%	11.27%	8.24%	12.36%
45	4.27%	6.40%	3.27%	4.90%	7.54%	11.30%	8.28%	12.42%
46	4.29%	6.43%	3.26%	4.89%	7.55%	11.32%	8.33%	12.49%
47	4.28%	6.42%	3.26%	4.89%	7.54%	11.31%	8.34%	12.51%
48	4.17%	6.25%	3.26%	4.89%	7.43%	11.14%	8.20%	12.30%
49+	4.11%	6.16%	3.26%	4.89%	7.37%	11.05%	8.16%	12.24%

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

APPENDIX E – MEMBER CONTRIBUTION RATES

Entry Age	Safety Tier 5							
	Basic First \$350	Basic Over \$350	COL First \$350	COL Over \$350	Total First \$350	Total Over \$350	Prior Total First \$350	Prior Total Over \$350
20	5.19%	7.78%	2.35%	3.53%	7.54%	11.31%	7.68%	11.52%
21	5.29%	7.94%	2.45%	3.67%	7.74%	11.61%	7.89%	11.83%
22	5.40%	8.10%	2.51%	3.77%	7.91%	11.87%	8.08%	12.12%
23	5.51%	8.26%	2.57%	3.86%	8.08%	12.12%	8.26%	12.39%
24	5.62%	8.43%	2.63%	3.95%	8.25%	12.38%	8.44%	12.67%
25	5.73%	8.60%	2.69%	4.04%	8.43%	12.64%	8.63%	12.95%
26	5.85%	8.78%	2.75%	4.13%	8.60%	12.91%	8.82%	13.23%
27	5.97%	8.95%	2.81%	4.22%	8.78%	13.17%	9.01%	13.52%
28	6.09%	9.14%	2.87%	4.31%	8.97%	13.45%	9.21%	13.81%
29	6.22%	9.32%	2.93%	4.39%	9.14%	13.71%	9.40%	14.11%
30	6.34%	9.52%	2.95%	4.42%	9.29%	13.94%	9.57%	14.36%
31	6.48%	9.71%	2.96%	4.44%	9.44%	14.15%	9.75%	14.63%
32	6.61%	9.92%	3.01%	4.52%	9.62%	14.44%	9.96%	14.94%
33	6.75%	10.13%	3.07%	4.60%	9.82%	14.73%	10.17%	15.26%
34	6.90%	10.34%	3.12%	4.68%	10.02%	15.02%	10.39%	15.59%
35	7.04%	10.57%	3.18%	4.77%	10.22%	15.34%	10.63%	15.95%
36	7.20%	10.80%	3.22%	4.83%	10.42%	15.63%	10.85%	16.28%
37	7.37%	11.05%	3.27%	4.90%	10.63%	15.95%	11.10%	16.64%
38	7.54%	11.31%	3.32%	4.98%	10.86%	16.29%	11.36%	17.03%
39	7.70%	11.56%	3.37%	5.06%	11.08%	16.62%	11.61%	17.42%
40	7.86%	11.79%	3.44%	5.16%	11.30%	16.95%	11.88%	17.82%
41	8.01%	12.02%	3.39%	5.09%	11.41%	17.11%	12.02%	18.03%
42	8.16%	12.24%	3.35%	5.03%	11.51%	17.27%	12.16%	18.24%
43	8.30%	12.45%	3.32%	4.98%	11.62%	17.43%	12.31%	18.47%
44	8.45%	12.67%	3.29%	4.94%	11.74%	17.61%	12.45%	18.68%
45	8.54%	12.81%	3.27%	4.90%	11.80%	17.71%	12.54%	18.81%
46	8.57%	12.86%	3.26%	4.89%	11.83%	17.75%	12.61%	18.91%
47	8.55%	12.83%	3.26%	4.89%	11.81%	17.72%	12.61%	18.91%
48	8.34%	12.51%	3.26%	4.89%	11.60%	17.40%	12.31%	18.46%
49+	8.22%	12.32%	3.26%	4.89%	11.48%	17.21%	12.21%	18.31%

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

APPENDIX E – MEMBER CONTRIBUTION RATES

PEPRA Rates Current Valuation				
	General		Safety	
	County and Former County	Ceres and Other Districts	County and Former County	Ceres and Other Districts
	8.63%	9.41%	12.33%	14.11%
Assumptions:				
Interest:	7.00%			
Salary:	2018 Valuation Scale (Service based, includes wage inflation at 3.00%)			
Mortality:	Because the PEPRA contributions rates are based on 50% of the actual Normal Cost, the mortality rates are the same as those used in the Actuarial Valuation (CalPERS mortality tables with adjustments based on StanCERA experience projected generationally from 2009 using Scale MP-2018)			

PEPRA Rates Prior Valuation				
	General		Safety	
	County and Former County	Ceres and Other Districts	County and Former County	Ceres and Other Districts
	8.04%	8.47%	13.04%	15.41%
Assumptions:				
Interest:	7.25%			
Salary:	2017 Valuation Scale (Service based, includes wage inflation at 3.25%)			
Mortality:	Because the PEPRA contributions rates are based on 50% of the actual Normal Cost, the mortality rates are the same as those used in the Actuarial Valuation (CalPERS mortality tables with adjustments based on StanCERA experience projected generationally from 2009 using Scale MP-2015)			



Classic Values, Innovative Advice