

Ventura County Employees' Retirement Association

Actuarial Valuation and Review
as of June 30, 2018

The logo for Segal Consulting is a large, dark blue, stylized arrow pointing to the right. It has a white star-like symbol at its tail. The text "Segal Consulting" is written in white, sans-serif font across the middle of the arrow.

Segal Consulting

This report has been prepared at the request of the Board of Retirement to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Retirement and may only be provided to other parties in its entirety, unless expressly authorized by Segal. The measurements shown in this actuarial valuation may not be applicable for other purposes.

Copyright © 2018 by The Segal Group, Inc. All rights reserved.



100 MONTGOMERY STREET, SUITE 500 SAN FRANCISCO, CA 94104
T 415.263.8200 F 415.376.1167 www.segalco.com

November 9, 2018

*Board of Retirement
Ventura County Employees' Retirement Association
1190 S. Victoria Avenue, Suite 200
Ventura, CA 93003-6572*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2018. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal year 2019-2020 and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Plan. The census and financial information on which our calculations were based was provided by the Retirement Association. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of John Monroe, ASA, EA, MAAA. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

A handwritten signature in black ink, appearing to read "Paul Angelo", written over a horizontal line.

*Paul Angelo, FSA, EA, MAAA, FCA
Senior Vice President and Actuary*

A handwritten signature in black ink, appearing to read "John Monroe", written over a horizontal line.

*John Monroe, ASA, EA, MAAA
Vice President and Actuary*

AW/

SECTION 1

VALUATION SUMMARY

Purpose and Scope.....	i
Significant Issues in this Valuation	ii
Summary of Key Valuation Results	v
Summary of Key Valuation Demographic and Financial Data.....	vii
Important Information about Actuarial Valuations	viii

SECTION 2

VALUATION RESULTS

A. Member Data	1
B. Financial Information	4
C. Actuarial Experience	8
D. Employer And Member Contributions	13
E. Funded Ratio.....	22
F. Volatility Ratios.....	24

SECTION 3

SUPPLEMENTAL INFORMATION

EXHIBIT A Table of Plan Coverage.....	25
EXHIBIT B Members in Active Service and Projected Average Compensation as of June 30, 2018.....	33
EXHIBIT C Reconciliation of Member Data – June 30, 2017 to June 30, 2018	40
EXHIBIT D Summary Statement of Income and Expenses on an Actuarial Value Basis	41
EXHIBIT E Summary Statement of Net Assets.....	42
EXHIBIT F Actuarial Balance Sheet.....	43
EXHIBIT G Summary of Allocated Reserves.....	44
EXHIBIT H Development of Unfunded/(Overfunded) Actuarial Accrued Liability for Year Ended June 30, 2018.....	45
EXHIBIT I Table of Amortization Bases.....	46
EXHIBIT J Projection of UAAL Balances and Payments.....	50
EXHIBIT K Section 415 Limitations	52
EXHIBIT L Definitions of Pension Terms	53

SECTION 4

REPORTING INFORMATION

EXHIBIT I Summary of Actuarial Valuation Results.....	55
EXHIBIT II Actuarial Assumptions and Methods.....	57
EXHIBIT III Summary of Plan Provisions	77
Appendix A Member Contribution Rates Based on 50/50 Sharing of Normal Cost for Non-PEPRA Tiers	84
Appendix B Member Contribution Rates for PEPRA Members.....	85
Appendix C Employer Contribution Rates Without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers	86
Appendix D Member Contribution Rates Without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers	88
Appendix E Employer Contribution Rates For Reference Purposes Only - Current and Prior Valuation with <u>Non- Combined</u> General UAAL Rates ...	93

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

Purpose and Scope

This report has been prepared by Segal Consulting to present a valuation of the Ventura County Employees' Retirement Association (VCERA) as of June 30, 2018. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Retirement Association, as administered by VCERA;
- The characteristics of covered active members, terminated vested members, and retired members and beneficiaries as of June 30, 2018, provided by VCERA;
- The assets of the Plan as of June 30, 2018, provided by VCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2018 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the June 30, 2018 valuation.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2019 through June 30, 2020.

One of the general goals of an actuarial valuation is to establish contributions that fully fund the system's liabilities, and which, as a percentage of payroll, remain as level as possible for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the Association's assets, liabilities and future contribution requirements. Our calculations are based upon member data and financial information provided to us by the Association's staff. This information has not been audited by us, but it has been reviewed and found to be consistent, both internally and with the prior year's information.

Ref: Pgs. 67-68

The contribution requirements are determined as a percentage of payroll. The Association's employer rates provide for both normal cost and a contribution to amortize any unfunded or overfunded actuarial accrued liabilities. In 2004, the Board elected to amortize the Association's Unfunded Actuarial Accrued Liability (UAAL) as of June 30, 2004 over a declining 15-year period. Any change in the UAAL after June 30, 2004 is amortized over separate 15-year declining amortization periods.

Effective with the June 30, 2012 valuation, any change in the UAAL that arises due to assumption changes is amortized over separate 20-year declining amortization periods. Also, any change in the UAAL that arises due to retirement incentives is annualized over separate declining amortization period of up to 5 years.

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

Ref: Pgs. 46-49, 50-51

A schedule of current amortization balances and payments may be found in Section 3, Exhibit I. A graphical projection of the UAAL amortization bases and payments is shown in Exhibit J.

The Actuarial Standards Board Actuarial Standard of Practice (ASOP) No. 4 provides guidelines for actuaries to follow when measuring pension obligations. For a plan such as that offered by the Retirement Association that may use undesignated excess earnings to provide supplemental benefits, the valuation report must indicate that the impact of any such future use of undesignated excess earnings on the future financial condition of the plan has not been explicitly measured or otherwise reflected in the valuation. However, it should be noted that under the Board's Interest Crediting Policy, the balance of \$1.12 billion (negative) in the Interest Crediting Shortfall Tracking Account (ICSTA) has to be fully restored out of future excess earnings before any subsequent earnings can be used to provide for any supplemental benefits. The ICSTA tracks any cumulative shortfalls in investment earnings relative to earnings required to credit full interest at the assumed rate to valuation reserves.

Ref: Pgs. 16, 84

In this report, the employer and member contribution rates shown in Chart 14 and Appendix A, respectively, are calculated based on a 50/50 sharing of Normal Cost for both PEPRA and non-PEPRA Tiers. For purposes of these calculations, we have been previously directed by VCERA to assume that the cessation of member contributions after 30 years of service for non-PEPRA members continues per the County Employees Retirement Law (CERL) and that the cost associated with this provision is to be paid for by employers.

Ref: Pgs. 86-92

The employer and member contribution rates calculated under the prior method (i.e., no 50/50 sharing of Normal Cost for non-PEPRA tiers) are shown in Appendix C and Appendix D, respectively.

Significant Issues in this Valuation

The following key findings were the result of this actuarial valuation:

Ref: Pg. 57

➤ The results of this valuation reflect changes in the economic and non-economic assumptions as recommended by Segal and adopted by the Board for the June 30, 2018 valuation. These changes were documented in our Actuarial Experience Study dated May 24, 2018. They are also outlined in Section 4, Exhibit II of this report. These assumption changes resulted in an increase in the average employer rate of 1.98% of payroll and an increase in the average member rate of 0.40% of payroll. Of the 1.98% increase in the employer rate, 0.56% is due to an increase in the Normal Cost and 1.42% is due to an increase in the UAAL rate.

Ref: Pgs. 10-11

➤ The market value of assets earned a return of 8.8% for the July 1, 2017 to June 30, 2018 plan year. The valuation value of assets earned a return of 8.6% for the same period due to the deferral of most of the current year investment gain and the recognition of prior investment gains and losses. This resulted in an actuarial gain when measured against the assumed rate

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

of return of 7.50% for the 2017/2018 year. This actuarial investment gain decreased the average employer contribution rate by 0.65% of payroll.

Ref: Pg. 23

- The ratio of the valuation value of assets to actuarial accrued liabilities increased from 86.9% to 87.8%. The Association's UAAL increased slightly from \$744 million as of June 30, 2017 to \$747 million as of June 30, 2018. This increase is primarily due to changes in actuarial assumptions almost all offset by the contributions paying down a portion of the UAAL and the investment gain (on the valuation value of assets). A complete reconciliation of the Association's UAAL is provided in Section 3, Exhibit H.

Ref: Pg. 45

Ref: Pgs. 46-49

- The restarted UAAL amortization layers established as of the June 30, 2004 valuation, which comprises over one-third of the net annual UAAL amortization payment as of June 30, 2018, will be fully amortized during fiscal year 2018/2019. This alone will result in a reduction in the UAAL contribution rate of over 6% of payroll for the plan in total (approximately 3% of payroll for General and 18% of payroll for Safety) in the June 30, 2019 valuation.

Ref: Pg. 20

- The average employer rate increased from 27.09% of payroll to 28.49% of payroll. This increase is primarily due to changes in actuarial assumptions and lower than expected total actual payroll growth, offset to some degree by the investment gain (on the valuation value of assets) and other experience gains. A complete reconciliation of the Association's employer rate is provided in Section 2, Subsection D, Chart 15.

As previously adopted by the Board, we have continued to calculate the Basic and COLA UAAL rates on a combined basis for all General Tiers even though General Tier 2 and associated PEPRA tiers are overfunded this year. This results in more stable UAAL rates for General Tier 1.

Ref: Pg. 21

- The average member rate increased from 9.75% of payroll in the June 30, 2017 valuation to 10.05% of payroll in the June 30, 2018 valuation. This increase was primarily due to changes in actuarial assumptions. A complete reconciliation of the member rate is provided in Section 2, Subsection D, Chart 16. The average member rate reflects the impact of the cessation of member contributions after 30 years of service for non-PEPRA tiers.

Ref: Pg. 5

- As indicated in Section 2, Subsection B, Chart 7 of this report, the net unrecognized investment gain as of June 30, 2018 is \$11.3 million as compared to an unrecognized gain of \$0.6 million in the June 30, 2017 valuation. This investment gain will be recognized in the determination of the valuation value of assets for funding purposes over the next few years. This means that even if the plan earns the current assumed rate of investment return of 7.25% per year (net of expenses) on a **market value** basis then the deferred gain will be recognized over the next few years as shown in the footnote to Chart 7.
- The June 30, 2018 unrecognized investment gains of \$11.3 million represents 0.2% of the market value of assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the \$11.3 million market gains is

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

expected to have an impact on the Association's future funded ratio and average employer contribution rate. This potential impact may be illustrated as follows:

- If the net deferred gains were recognized immediately in the valuation value of assets, the funded ratio would increase slightly from 87.8% to 88.0%.

For comparison purposes, if all the deferred gains in the June 30, 2017 valuation had been recognized immediately in the June 30, 2017 valuation, the funded ratio would have increased from 86.9% to 87.0%.

- If the net deferred gains were recognized immediately in the valuation value of assets, the average employer rate would decrease from 28.49% to 28.36% of payroll.

For comparison purposes, if all the deferred gains in the June 30, 2017 valuation had been recognized immediately in the June 30, 2017 valuation, the average employer rate would have decreased slightly from 27.09% to about 27.08% of payroll.

- The actuarial valuation report as of June 30, 2018 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

Impact of Future Experience on Contribution Rates

Future contribution requirements may differ from those determined in the valuation because of:

- Differences between actual experience and anticipated experience;
- Changes in actuarial assumptions or methods;
- Changes in statutory provisions; and
- Differences between the contribution rates determined by the valuation and those adopted by the Board.

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

Summary of Key Valuation Results (all dollar amounts in thousands)

	June 30, 2018		June 30, 2017	
Employer Contribution Rates: ⁽¹⁾				
	Total Rate	Estimated Annual Amount ⁽²⁾	Total Rate	Estimated Annual Amount ⁽²⁾
General Tier 1	25.75%	\$1,494	24.70%	\$1,748
General Tier 2	17.04%	36,054	16.09%	34,640
General PEPRA Tier 2	17.09%	10,256	16.12%	7,964
General Tier 2C ⁽³⁾	23.13%	48,620	20.84%	44,883
General PEPRA Tier 2C ⁽³⁾	23.23%	21,740	20.83%	17,030
General Combined	20.34%	118,164	18.68%	106,265
Safety	55.20%	84,241	54.60%	85,196
Safety PEPRA	52.89%	14,345	52.19%	10,404
Safety Combined	54.85%	98,586	54.33%	95,600
All Categories combined	28.49%	\$216,750	27.09%	\$201,865
Average Member Contribution Rates: ⁽¹⁾⁽⁴⁾⁽⁵⁾				
	Total Rate	Estimated Annual Amount ⁽²⁾	Total Rate	Estimated Annual Amount ⁽²⁾
General Tier 1	9.98%	\$579	10.33%	\$731
General Tier 2	7.45%	15,758	7.03%	15,140
General PEPRA Tier 2	7.50%	4,501	7.06%	3,488
General Tier 2C ⁽³⁾	10.08%	21,185	9.66%	20,802
General PEPRA Tier 2C ⁽³⁾	10.13%	9,480	9.69%	7,922
Safety	13.77%	21,015	13.94%	21,751
Safety PEPRA	14.42%	3,911	14.09%	2,809
All Categories combined	10.05%	\$76,429	9.75%	\$72,643

⁽¹⁾ Before reflection of any member rate that may be "picked-up" by the employer. Contributions are assumed to be paid throughout the year.

⁽²⁾ Based on projected compensation for each year shown.

⁽³⁾ Throughout this report, this category represents those Tier 2 members who contribute a negotiated 2.63% of compensation for a fixed 2% COLA pursuant to Government Code 31627 that applies to service after March 2003.

⁽⁴⁾ The non-refundability factors as of June 30, 2018 are 1.00 for General Tier 1 and Tier 2 (non-PEPRA) and 1.00 for Safety (non-PEPRA) compared to 0.99 for General Tier 1 and Tier 2 (non-PEPRA) and 1.00 for Safety (non-PEPRA) from June 30, 2017.

⁽⁵⁾ Average member contribution rates for non-PEPRA tiers as shown in this exhibit are after reflecting the impact of the cessation of member contributions after 30 years of service. Individual member rates can be found in Appendix A and B.

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

Summary of Key Valuation Results (continued) (all dollar amounts in thousands)

	June 30, 2018	June 30, 2017
Funded Status:		
Actuarial accrued liability (AAL) ⁽¹⁾	\$6,129,758	\$5,703,396
Valuation value of assets (VVA) ⁽¹⁾	5,382,777	4,959,070
Market value of assets (MVA)	5,396,463	4,964,247
Funded percentage on VVA basis (VVA/AAL)	87.81%	86.95%
Funded percentage on MVA basis (MVA/AAL)	88.04%	87.04%
Unfunded actuarial accrued liability (UAAL) on VVA basis	\$746,981	\$744,326
Unfunded actuarial accrued liability (UAAL) on MVA basis	733,295	739,149
Key Assumptions:		
Interest rate	7.25%	7.50%
Inflation rate	2.75%	3.00%
Across the board salary increase	0.50%	0.50%

⁽¹⁾ Excludes liabilities and assets held for supplemental medical benefit reserve and statutory contingency reserve.

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

Summary of Key Valuation Demographic and Financial Data

	June 30, 2018	June 30, 2017	Change From Prior Year
Active Members:			
Number of members	8,611	8,636	-0.3%
Average age	44.9	45.0	-0.1
Average service	11.3	11.2	0.1
Projected total compensation	\$760,815,215	\$744,917,386	2.1%
Average projected compensation	\$88,354	\$86,257	2.4%
Retired Member and Beneficiaries:			
Number of members:			
Service retired	5,234	4,966	5.4%
Disability retired	819	831	-1.4%
Beneficiaries	985	969	1.7%
Total	7,038	6,766	4.0%
Average age	70.3	70.2	0.1
Average monthly benefit ⁽¹⁾	\$3,230	\$3,108	3.9%
Vested Terminated Members:			
Number of terminated vested members ⁽²⁾	2,909	2,809	3.6%
Average age	46.0	45.9	0.1
Total Members:	18,558	18,211	1.9%
Summary of Financial Data (dollar amounts in thousands):			
Market value of assets	\$5,396,463	\$4,964,247	8.7%
Return on market value of assets	8.83%	13.10%	N/A
Actuarial value of assets	\$5,385,146	\$4,963,653	8.5%
Return on actuarial value of assets	8.62%	8.03%	N/A
Valuation value of assets	\$5,382,777	\$4,959,070	8.5%
Return on valuation value of assets	8.62%	8.04%	N/A

⁽¹⁾ Excludes monthly benefits for vested fixed supplemental and supplemental medical benefit amounts.

⁽²⁾ Includes terminated members with member contributions on deposit.

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare an actuarial valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by VCERA. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by VCERA.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal’s actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of the VCERA. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan’s assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term

SECTION 1: Valuation Summary for the Ventura County Employees' Retirement Association

cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

- If VCERA is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of VCERA, it is not a fiduciary in its capacity as actuaries and consultants with respect to VCERA.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 1
Member Population: 2009 – 2018

Year Ended June 30	Active Members	Vested Terminated Members ⁽¹⁾	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives
2009	8,045	2,055	5,041	7,096	0.88
2010	8,003	2,040	5,267	7,307	0.91
2011	8,040	2,097	5,481	7,578	0.94
2012	8,019	2,161	5,658	7,819	0.98
2013	8,068	2,249	5,888	8,137	1.01
2014	8,210	2,339	6,121	8,460	1.03
2015	8,299	2,441	6,338	8,779	1.06
2016	8,509	2,639	6,539	9,178	1.08
2017	8,636	2,809	6,766	9,575	1.11
2018	8,611	2,909	7,038	9,947	1.16

⁽¹⁾ Includes terminated members with member contributions on deposit.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 8,611 active members with an average age of 44.9, average service of 11.3 years and average compensation of \$88,354. The 8,636 active members in the prior valuation had an average age of 45.0, average service of 11.2 years and average compensation of \$86,257.

Among the active members, there were none with unknown age.

Inactive Members

In this year's valuation, there were 2,909 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 2,809 in the prior valuation.

These graphs show a distribution of active members by age and by years of service.

CHART 2
Distribution of Active Members by Age as of June 30, 2018

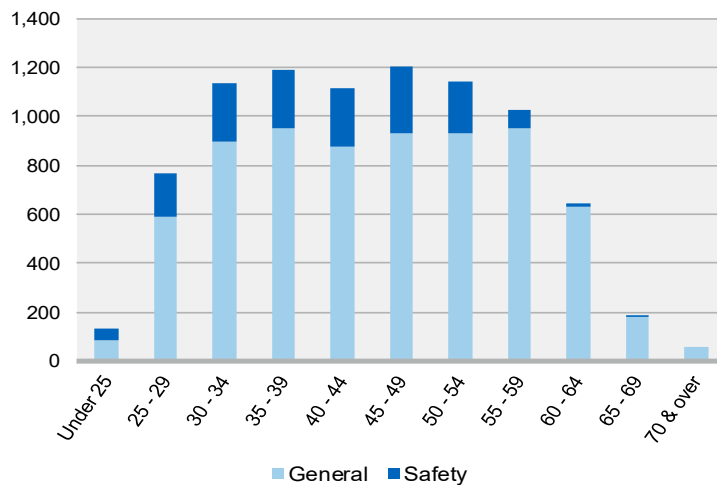
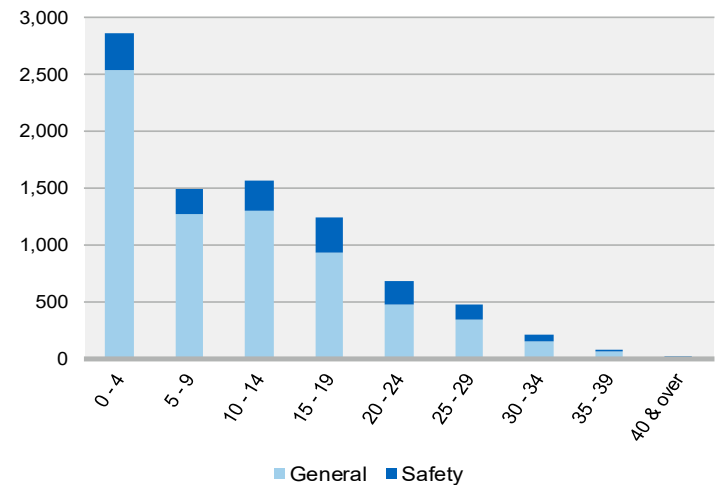


CHART 3
Distribution of Active Members by Years of Service as of June 30, 2018



SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

Retired Members and Beneficiaries

As of June 30, 2018, 6,053 retired members and 985 beneficiaries were receiving total monthly benefits of \$22,732,545. For comparison, in the previous valuation, there were 5,797 retired members and 969 beneficiaries receiving monthly benefits of \$21,031,819. These monthly benefits exclude benefits for vested fixed supplemental and supplemental medical benefit amounts.

These graphs show a distribution of the current retired members based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retired Members by Type and by Monthly Amount as of June 30, 2018

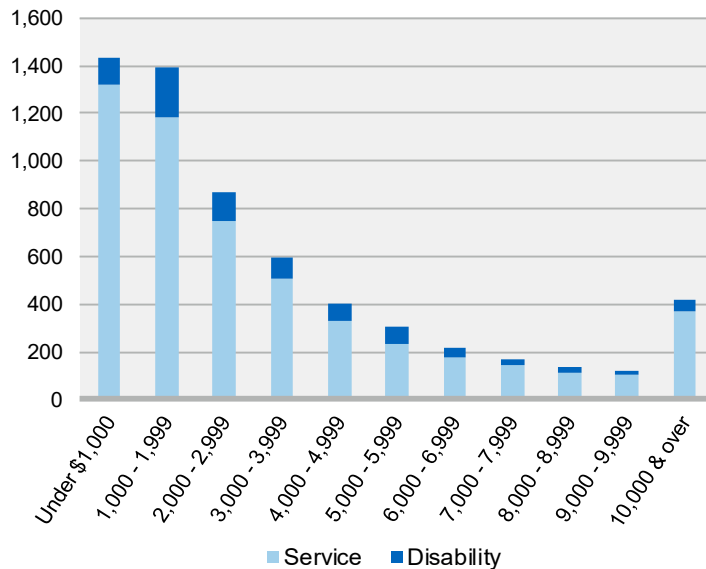
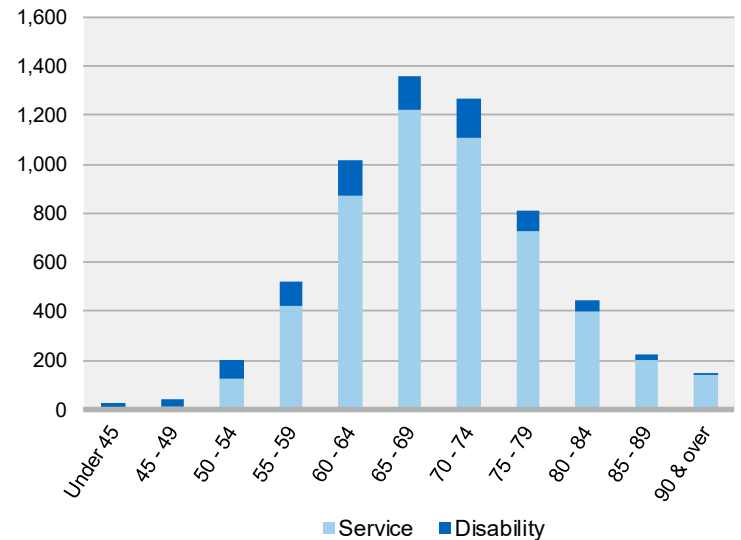


CHART 5

Distribution of Retired Members by Type and by Age as of June 30, 2018



SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

B. FINANCIAL INFORMATION

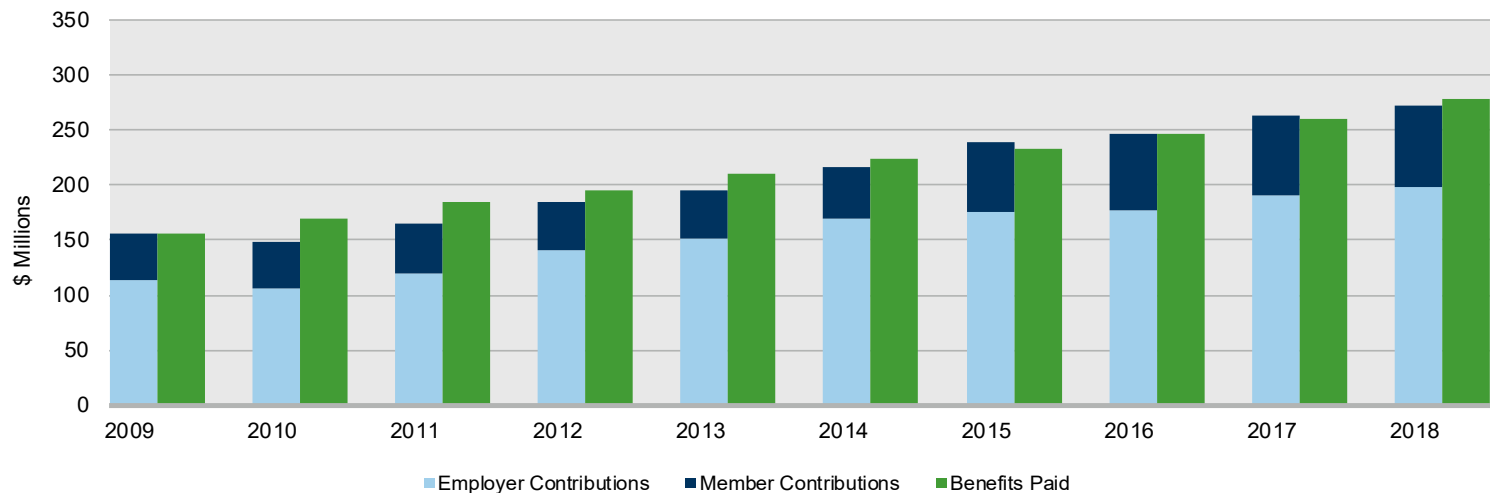
Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment and administrative expenses) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D and E.

The chart depicts two components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets due to contributions during each year while the second bar details the decreases due to benefit payments.

CHART 6

Comparison of Contributions with Benefits for Years Ended June 30, 2009 – 2018



SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

The chart shows the determination of the actuarial and valuation value of assets as of the valuation date.

CHART 7

Determination of Actuarial and Valuation Value of Assets for Year Ended June 30, 2018

Six Month Period		Total Actual Market Return (net)	Expected Market Return (net)	Investment Gain (Loss)	Deferred Factor	Deferred Return ⁽¹⁾
From	To					
1/2013	6/2013	\$203,932,155	\$137,287,941	\$66,644,214	0.0	\$0
7/2013	12/2013	405,462,695	140,757,243	264,705,452	0.0	0
1/2014	6/2014	249,072,466	155,947,487	93,124,979	0.1	9,312,498
7/2014	12/2014	1,675,147	165,579,616	(163,904,469)	0.2	(32,780,894)
1/2015	6/2015	83,151,071	165,743,013	(82,591,942)	0.3	(24,777,583)
7/2015	12/2015	(131,432,997)	169,038,879	(300,471,876)	0.4	(120,188,750)
1/2016	6/2016	152,698,097	163,960,894	(11,262,797)	0.5	(5,631,399)
7/2016	12/2016	223,970,859	164,370,060	59,600,799	0.6	35,760,480
1/2017	6/2017	351,030,738	172,814,126	178,216,612	0.7	124,751,628
7/2017	12/2017	399,470,558	185,992,710	213,477,848	0.8	170,782,279
1/2018	6/2018	38,736,481	200,860,519	(162,124,038)	0.9	<u>(145,911,634)</u>
1. Total Deferred Return						\$11,316,625
2. Net Market Value of Assets						5,396,462,523
3. a. Actuarial Value of Assets (Item 2 – Item 1)						5,385,145,897
b. Ratio of Actuarial Value of Assets to Net Market Value of Assets (Item 3a / Item 2)						99.8%
4. Non-valuation reserves						
a. Supplemental Medical Benefit						\$2,368,822
b. Statutory Contingency						<u>0</u>
c. Subtotal						\$2,368,822
5. Valuation Value of Assets (Item 3a – Item 4c)						\$5,382,777,075
6. Amount of Deferred Returns to be recognized in the following valuations:						
a. June 30, 2019						\$(44,499,474)
b. June 30, 2020						(12,771,885)
c. June 30, 2021						56,707,965
d. June 30, 2022						28,092,423
e. June 30, 2023						<u>(16,212,404)</u>
f. Subtotal						\$11,316,625

⁽¹⁾ Recognition at 10% per six month period over 5 years.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

CHART 8

Allocation of Valuation Value of Assets as of June 30, 2018

The calculation of the valuation value of assets from June 30, 2017 to June 30, 2018 by category is provided below:

	Allocated Assets for Funding			
	General			Total
	Tier 1	Tier 2	Safety	
1. Allocated Assets as of Beginning of Plan Year	\$481,889,300	\$2,245,641,428	\$2,231,539,423	\$4,959,070,151
2. Member Contributions	660,314	45,554,973	25,146,203	71,361,490
3. Member Buybacks	148,946	1,452,252	216,830	1,818,028
4. Employer Pick-up Contributions Credited to Member Account	26,203	834,596	3,929	864,728
5. Employer Contributions	1,756,837	100,299,775	95,626,245	197,682,857
6. Refunds of Member Contributions and Death Benefits Paid	294,782	4,787,262	348,275	5,430,319
7. Retiree Benefit Payments Excluding Supplemental Medical Payments	78,402,118	84,196,748	107,475,163	270,074,029
8. Subtotal (Items 1 + 2 + 3 + 4 + 5 – 6 – 7)	\$405,784,700	\$2,304,799,014	\$2,244,709,192	\$4,955,292,906
9. Weighted Average Fund Balance: Item 1 + ½ of (Items 2, 3, 4, 5) – ½ of (Items 6, 7)	443,837,000	2,275,220,221	2,238,124,308	4,957,181,529
10. Earnings Allocated in Proportion to Item 9	38,274,429	196,204,359	193,005,381	427,484,169
11. Valuation Value of Assets (Items 8 + 10)	\$444,059,129	\$2,501,003,373	\$2,437,714,573	\$5,382,777,075

Note: Results may not add due to rounding.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

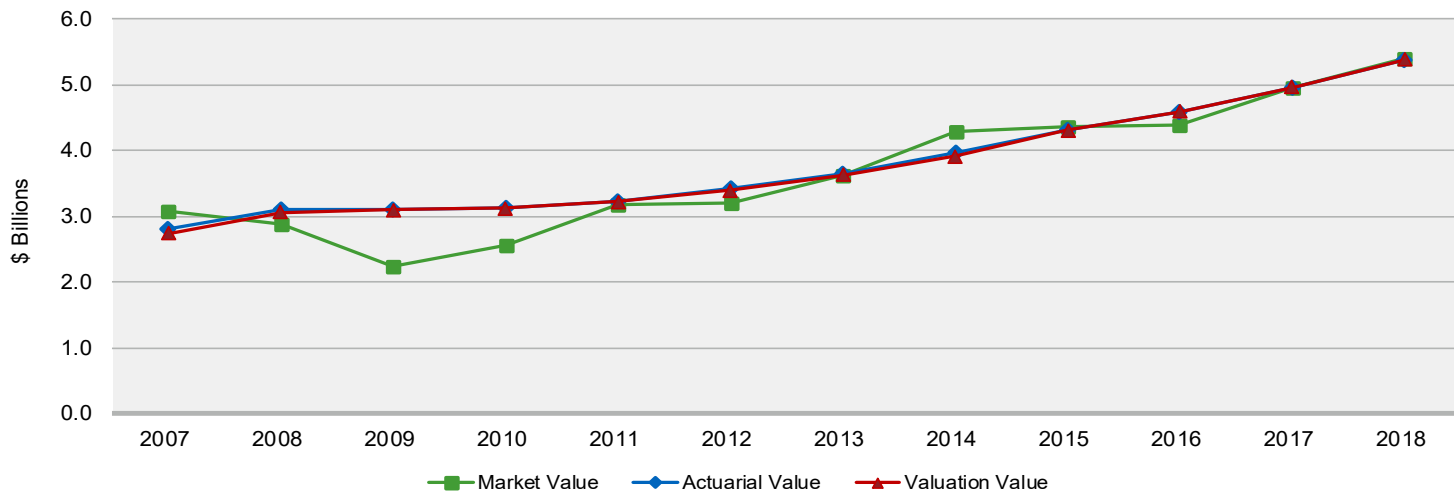
The market value, actuarial value, and valuation value of assets are representations of VCERA's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets, but with less volatility. The valuation value of assets is the actuarial value, excluding any non-valuation reserves.

The valuation value of assets is significant because VCERA's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in market value, actuarial value and valuation value over the past twelve years.

CHART 9

Relative Values of Market Value, Actuarial Value and Valuation Value of Assets for Years Ended June 30, 2007 – 2018



SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain) the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total experience gain was \$64.3 million, including a \$55.7 million gain from investments and a \$8.6 million gain from all other sources. The net experience variation from individual sources other than investments experience was 0.1% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 10
Actuarial Experience for Year Ended June 30, 2018

1. Net gain from investments ⁽¹⁾	\$55,696,000
2. Net gain from other experience ⁽²⁾	<u>8,639,000</u>
3. Net experience gain: (1) + (2)	\$64,335,000

⁽¹⁾ Details in Chart 11.

⁽²⁾ See Section 3, Exhibit H for further details. Does not include the effect of plan or assumption changes, if any.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on VCERA's investment policy. For valuation purposes, the assumed rate of return on the valuation value of assets is 7.50% (based on the June 30, 2017 valuation). The actual rate of return on the valuation value of assets for the 2017/2018 plan year was 8.62%.

Since the actual return for the year was greater than the assumed return, VCERA experienced an actuarial gain during the year ended June 30, 2018 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 11

Investment Experience for Year Ended June 30, 2018 – Market Value, Actuarial Value and Valuation Value of Assets

	Market Value	Actuarial Value	Valuation Value
1. Actual return	\$438,207,040	\$427,484,168	\$427,484,169
2. Average value of assets	4,961,251,129	4,960,657,375	4,957,181,529
3. Actual rate of return: (1) ÷ (2)	8.83%	8.62%	8.62%
4. Assumed rate of return	7.50%	7.50%	7.50%
5. Expected return: (2) x (4)	\$372,093,835	\$372,049,303	\$371,788,615
6. Actuarial gain/(loss): (1) – (5)	<u>66,113,205</u>	<u>55,434,865</u>	<u>55,695,554</u>

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rates of return on an actuarial, valuation and market value basis for the last ten years.

CHART 12

Investment Return – Market Value, Actuarial Value and Valuation Value: 2009 – 2018

Year Ended June 30	Market Value Investment Return		Actuarial Value Investment Return		Valuation Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent
2009	\$(628,718,568)	(21.86%)	\$5,186,654	0.17%	\$31,242,785	1.02%
2010	343,005,717	15.33%	43,756,165	1.41%	43,756,185	1.42%
2011	622,940,028	24.34%	121,406,541	3.89%	121,406,541	3.91%
2012	47,147,363	1.49%	184,787,098	5.72%	184,909,716	5.75%
2013	432,694,392	13.51%	237,282,497	6.97%	237,282,497	7.00%
2014	654,535,161	18.06%	338,343,729	9.32%	294,307,214	8.13%
2015	84,826,216	1.98%	341,233,326	8.60%	384,442,119	9.82%
2016	21,265,100	0.49%	280,531,179	6.51%	280,531,179	6.52%
2017	575,001,597	13.10%	368,806,019	8.03%	368,806,019	8.04%
2018	438,207,040	8.83%	427,484,168	8.62%	427,484,169	8.62%
Five-Year Average Return		8.21%		8.18%		8.21%
Ten-Year Average Return		7.27%		6.29%		6.38%

Note: Each year's yield is weighted by the average asset value in that year.

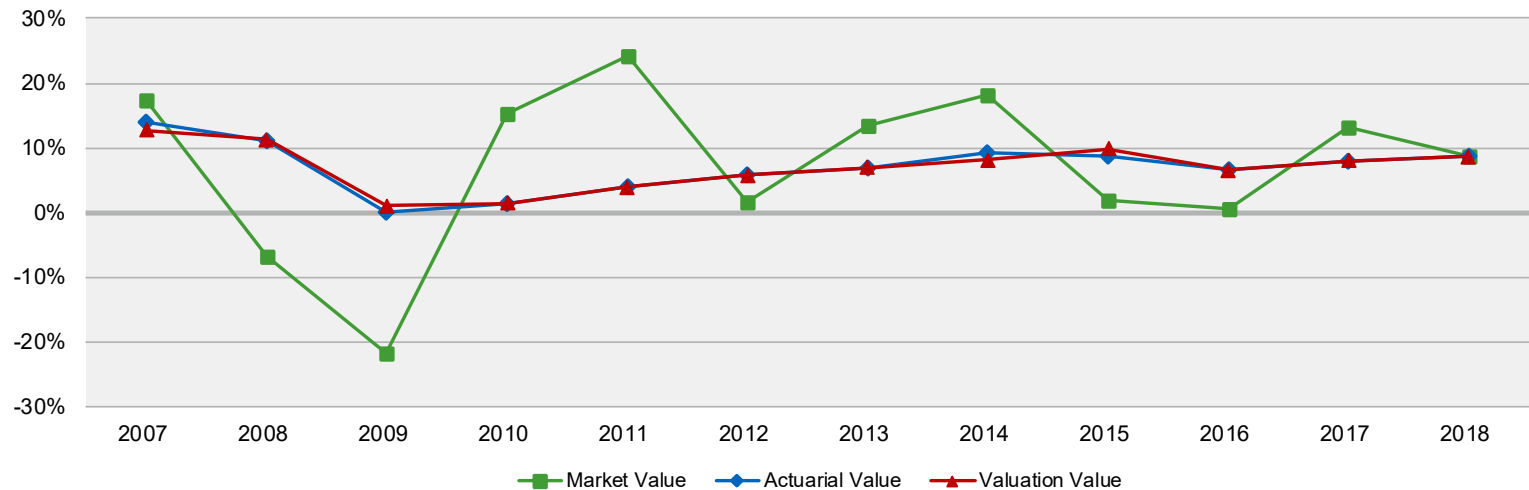
SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

CHART 13

Market, Actuarial and Valuation Rates of Return for Years Ended June 30, 2007 - 2018

This chart illustrates how this leveling effect has actually worked over the years 2007 - 2018.



SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- actual turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the year ended June 30, 2018 amounted to \$8.6 million which is 0.1% of the actuarial accrued liability. See Exhibit H for a detailed development of the unfunded actuarial accrued liability.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

D. EMPLOYER AND MEMBER CONTRIBUTIONS

Employer contributions consist of two components:

Normal Cost

The annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement-related benefits. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution rate is expressed as a level percentage of the member's compensation.

Contribution to the Unfunded Actuarial Accrued Liability (UAAL)

The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution (or rate credit in the case of a negative unfunded actuarial accrued liability) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the Association) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the combined annual inflation and "across the board" increases rate of 3.25%. The June 30, 2004 UAAL is being amortized over a 15-year declining period effective June 30, 2004. The change in UAAL that arises due to actuarial gains or losses or due to plan amendments (with the exception of retirement incentives) at each valuation is amortized over its own declining 15-year period. Effective with the June 30, 2012 valuation, any change in UAAL that arises due to changes in actuarial assumptions or methods is amortized over its own declining 20-year period and any change in UAAL due to retirement incentives is amortized over its own declining period of up to 5 years.

VCERA's UAAL is determined separately for each tier depending on the assets and liabilities for that tier. Note that Non-PEPRA tiers are combined with PEPRA tiers for UAAL purposes.

Effective with the June 30, 2012 valuation, the Basic UAAL rate has been calculated on a combined basis for all General Tiers. Effective with the June 30, 2014 valuation, the COLA UAAL rate has been calculated on a combined basis for General Tiers that

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

have a COLA. The recommended employer contribution rates determined under this combined methodology are provided on Chart 14. For reference purposes only, Appendix E shows the employer contribution rates under the previous non-combined methodology.

The employer contribution rates shown in Chart 14 are calculated based on a 50/50 sharing of Normal Cost for non-PEPRA Tiers. For purposes of these calculations, we have been previously directed by VCERA to assume that the cessation of member contributions after 30 years of service for non-PEPRA members continues per the County Employees Retirement Law (CERL) and that the cost associated with this provision is to be paid for by employers.

Appendix C shows employer contribution rates based on the prior methodology without a 50/50 sharing of Normal Cost for non-PEPRA Tiers.

Member Contributions *Non-PEPRA Members*

The non-PEPRA member contribution rates are provided in Appendix A. Please note that the member rates provided in the report are the full rate before reflecting any employer pickup. General Tier 2 members eligible for the fixed 2% cost-of-living benefit contribute a negotiated 2.63% of compensation per year towards the cost of that benefit that is reflected in this report.

Appendix D shows member contribution rates based on the prior methodology as defined in Articles 6 and 6.8 of the CERL for General members and Safety members. The basic member contribution rate is determined so that the accumulation of a member's basic contributions made in a given year until a certain age will be sufficient to fund an annuity at that age that is equal to 1/120 of Final Average Compensation for General members and 1/100 of Final Average Compensation for Safety members. That age is 55 for General Tier 1 members, 60 for General Tier 2 members and 50 for Safety members. It is assumed that contributions are made annually at the same rate, starting at entry age. In addition to their basic contributions, General Tier 1 and Safety members pay one-half of the total normal cost necessary to fund their cost-of-living benefits. Member contributions accumulate with interest at the lesser of the assumed investment earning rate or the rate on ten year U.S. Treasury notes. Any difference between the assumed investment earning rate and the actual

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

interest crediting rate will be credited to the County Advance reserve. Please note that in calculating the basic member rate, we follow the Board's past practice and have not included any in-service pay redemptions that may potentially increase a member's final average compensation and hence retirement benefit.

PEPRA Members

Pursuant to Section 7522.30(a) of the Government Code, members under PEPRA tiers are required to contribute at least 50% of the Normal Cost. In addition, there are certain additional requirements that would have to be met such as requiring the new employees to pay the contribution rate of "similarly situated employees", if it is greater. (reference: Section 7522.30(c)). We further understand that different rules may have to be applied for collectively bargained employees, non-represented, managerial or other supervisory employees. (reference: Section 7522.30(e)). In preparing the Normal Cost rates in this report, we have assumed that exactly 50% of the Normal Cost would be paid by the new members and we have taken into account in this valuation only the requirements of Section 7522.30(c), but not the requirements of Section 7522.30(e). The only exception to this is that we have also shown the PEPRA Tier 2 with COLA contribution rates including the member COLA contribution rate of 2.63% of compensation based on current bargaining agreements.

Also of note is that based on our discussions with VCERA, we have used the discretion made available by AB1380 to not round the PEPRA member's contribution rates to the nearest one quarter of one percent as was previously required by PEPRA.

The PEPRA member contribution rates are provided in Appendix B.

Tier 2 COLA Procedures

This benefit has been valued consistent with the methodologies described in our October 9, 2006 report entitled "Funding Policies and Procedures for General Tier 2 COLA Benefit".

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

CHART 14a

Recommended Employer Contribution Rates (Dollar Amounts in Thousands) Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) – Current Valuation with Combined General UAAL Rates

	June 30, 2018 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
General Tier 1 Members						
Normal Cost ⁽²⁾	7.95%	\$461	2.55%	\$148	10.50%	\$609
UAAL ⁽³⁾	<u>9.59%</u>	<u>557</u>	<u>5.66%</u>	<u>328</u>	<u>15.25%</u>	<u>885</u>
Total Contribution	17.54%	\$1,018	8.21%	\$476	25.75%	\$1,494
General Tier 2 Members w/o COLA						
Normal Cost	7.45%	\$15,758	0.00%	\$0	7.45%	\$15,758
UAAL ⁽³⁾	<u>9.59%</u>	<u>20,296</u>	<u>0.00%</u>	<u>0</u>	<u>9.59%</u>	<u>20,296</u>
Total Contribution	17.04%	\$36,054	0.00%	\$0	17.04%	\$36,054
General PEPRA Tier 2 Members w/o COLA						
Normal Cost	7.50%	\$4,501	0.00%	\$0	7.50%	\$4,501
UAAL ⁽³⁾	<u>9.59%</u>	<u>5,755</u>	<u>0.00%</u>	<u>0</u>	<u>9.59%</u>	<u>5,755</u>
Total Contribution	17.09%	\$10,256	0.00%	\$0	17.09%	\$10,256
General Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.45%	\$15,657	0.43%	\$904	7.88%	\$16,561
UAAL ⁽³⁾⁽⁵⁾	<u>9.59%</u>	<u>20,165</u>	<u>5.66%</u>	<u>11,894</u>	<u>15.25%</u>	<u>32,059</u>
Total Contribution	17.04%	\$35,822	6.09%	\$12,798	23.13%	\$48,620
General PEPRA Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.50%	\$7,019	0.48%	\$449	7.98%	\$7,468
UAAL ⁽³⁾⁽⁵⁾	<u>9.59%</u>	<u>8,973</u>	<u>5.66%</u>	<u>5,299</u>	<u>15.25%</u>	<u>14,272</u>
Total Contribution	17.09%	\$15,992	6.14%	\$5,748	23.23%	\$21,740
All General Members⁽⁶⁾						
Normal Cost	7.47%	\$43,396	0.26%	\$1,501	7.73%	\$44,897
UAAL	<u>9.59%</u>	<u>55,746</u>	<u>3.02%</u>	<u>17,521</u>	<u>12.61%</u>	<u>73,267</u>
Total Contribution	17.06%	\$99,142	3.28%	\$19,022	20.34%	\$118,164

Applicable footnotes are shown on next page.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

CHART 14a (continued)

Recommended Employer Contribution Rates (Dollar Amounts in Thousands) Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) – Current Valuation with Combined General UAAL Rates

	June 30, 2018 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
Safety Members						
Normal Cost ⁽⁷⁾	12.03%	\$18,359	4.70%	\$7,173	16.73%	\$25,532
UAAL	<u>55.68%</u>	<u>84,974</u>	<u>(17.21%)</u>	<u>(26,265)</u>	<u>38.47%</u>	<u>58,709</u>
Total Contribution	67.71%	\$103,333	(12.51%)	\$(19,092)	55.20%	\$84,241
Safety PEPRA Members						
Normal Cost	10.34%	\$2,805	4.08%	\$1,106	14.42%	\$3,911
UAAL	<u>55.68%</u>	<u>15,102</u>	<u>(17.21%)</u>	<u>(4,668)</u>	<u>38.47%</u>	<u>10,434</u>
Total Contribution	66.02%	\$17,907	(13.13%)	\$(3,562)	52.89%	\$14,345
All Safety Members⁽⁶⁾						
Normal Cost	11.78%	\$21,164	4.60%	\$8,279	16.38%	\$29,443
UAAL	<u>55.68%</u>	<u>100,076</u>	<u>(17.21%)</u>	<u>(30,933)</u>	<u>38.47%</u>	<u>69,143</u>
Total Contribution	67.46%	\$121,240	(12.61%)	\$(22,654)	54.85%	\$98,586
All Categories Combined⁽⁶⁾						
Normal Cost	8.49%	\$64,560	1.28%	\$9,780	9.77%	\$74,340
UAAL	<u>20.48%</u>	<u>155,822</u>	<u>(1.76%)</u>	<u>(13,412)</u>	<u>18.72%</u>	<u>142,410</u>
Total Contribution	28.97%	\$220,382	(0.48%)	\$(3,632)	28.49%	\$216,750

⁽¹⁾ Amounts are in thousands, assumed to be paid throughout the year, and are based on June 30, 2018 annual payroll (also in thousands) shown below:

General Tier 1	\$5,803
General Tier 2	211,518
General PEPRA Tier 2	60,012
General Tier 2C	210,167
General PEPRA Tier 2C	93,581
Safety	152,611
Safety PEPRA	<u>27,123</u>
Total	\$760,815

⁽²⁾ The total employer rate has been adjusted by 0.26% to account for the cost associated with the cessation of member contributions after 30 years of service.

⁽³⁾ Basic UAAL rates have been calculated on a combined basis for all General Tiers. COLA UAAL rates have been calculated on a combined basis for all General Tiers that have a COLA (excludes General Tier 2 without COLA and General PEPRA Tier 2 without COLA).

⁽⁴⁾ Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.

⁽⁵⁾ Includes 0.66% in COLA UAAL costs attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627.

⁽⁶⁾ These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

⁽⁷⁾ The total employer rate has been adjusted by 1.48% to account for the cost associated with the cessation of member contributions after 30 years of service.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

CHART 14b

Recommended Employer Contribution Rates (Dollar Amounts in Thousands) Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) – Prior Valuation with Combined General UAAL Rates

	June 30, 2017 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
General Tier 1 Members						
Normal Cost ⁽²⁾	8.20%	\$580	2.75%	\$195	10.95%	\$775
UAAL ⁽³⁾	<u>9.06%</u>	<u>641</u>	<u>4.69%</u>	<u>332</u>	<u>13.75%</u>	<u>973</u>
Total Contribution	17.26%	\$1,221	7.44%	\$527	24.70%	\$1,748
General Tier 2 Members w/o COLA						
Normal Cost	7.03%	\$15,140	0.00%	\$0	7.03%	\$15,140
UAAL ⁽³⁾	<u>9.06%</u>	<u>19,500</u>	<u>0.00%</u>	<u>0</u>	<u>9.06%</u>	<u>19,500</u>
Total Contribution	16.09%	\$34,640	0.00%	\$0	16.09%	\$34,640
General PEPRA Tier 2 Members w/o COLA						
Normal Cost	7.06%	\$3,488	0.00%	\$0	7.06%	\$3,488
UAAL ⁽³⁾	<u>9.06%</u>	<u>4,476</u>	<u>0.00%</u>	<u>0</u>	<u>9.06%</u>	<u>4,476</u>
Total Contribution	16.12%	\$7,964	0.00%	\$0	16.12%	\$7,964
General Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.03%	\$15,139	0.06%	\$129	7.09%	\$15,268
UAAL ⁽³⁾⁽⁵⁾	<u>9.06%</u>	<u>19,501</u>	<u>4.69%</u>	<u>10,114</u>	<u>13.75%</u>	<u>29,615</u>
Total Contribution	16.09%	\$34,640	4.75%	\$10,243	20.84%	\$44,883
General PEPRA Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.06%	\$5,772	0.02%	\$17	7.08%	\$5,789
UAAL ⁽³⁾⁽⁵⁾	<u>9.06%</u>	<u>7,406</u>	<u>4.69%</u>	<u>3,835</u>	<u>13.75%</u>	<u>11,241</u>
Total Contribution	16.12%	\$13,178	4.71%	\$3,852	20.83%	\$17,030
All General Members⁽⁶⁾						
Normal Cost	7.05%	\$40,119	0.06%	\$341	7.11%	\$40,460
UAAL	<u>9.06%</u>	<u>51,524</u>	<u>2.51%</u>	<u>14,281</u>	<u>11.57%</u>	<u>65,805</u>
Total Contribution	16.11%	\$91,643	2.57%	\$14,622	18.68%	\$106,265

Applicable footnotes are shown on next page.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

CHART 14b (continued)

Recommended Employer Contribution Rates (Dollar Amounts in Thousands) Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) – Prior Valuation with Combined General UAAL Rates

	June 30, 2017 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
Safety Members						
Normal Cost ⁽⁷⁾	11.65%	\$18,178	4.85%	\$7,568	16.50%	\$25,746
UAAL	<u>52.74%</u>	<u>82,293</u>	<u>(14.64%)</u>	<u>(22,843)</u>	<u>38.10%</u>	<u>59,450</u>
Total Contribution	64.39%	\$100,471	(9.79%)	\$(15,275)	54.60%	\$85,196
Safety PEPRA Members						
Normal Cost	9.96%	\$1,985	4.13%	\$824	14.09%	\$2,809
UAAL	<u>52.74%</u>	<u>10,513</u>	<u>(14.64%)</u>	<u>(2,918)</u>	<u>38.10%</u>	<u>7,595</u>
Total Contribution	62.70%	\$12,498	(10.51%)	\$(2,094)	52.19%	\$10,404
All Safety Members⁽⁶⁾						
Normal Cost	11.46%	\$20,163	4.77%	\$8,392	16.23%	\$28,555
UAAL	<u>52.74%</u>	<u>92,806</u>	<u>(14.64%)</u>	<u>(25,761)</u>	<u>38.10%</u>	<u>67,045</u>
Total Contribution	64.20%	\$112,969	(9.87%)	\$(17,369)	54.33%	\$95,600
All Categories Combined⁽⁶⁾						
Normal Cost	8.09%	\$60,282	1.17%	\$8,733	9.26%	\$69,015
UAAL	<u>19.38%</u>	<u>144,330</u>	<u>(1.55%)</u>	<u>(11,480)</u>	<u>17.83%</u>	<u>132,850</u>
Total Contribution	27.47%	\$204,612	(0.38%)	\$(2,747)	27.09%	\$201,865

⁽¹⁾ Amounts are in thousands, assumed to be paid throughout the year, and are based on June 30, 2017 annual payroll (also in thousands) shown below:

General Tier 1	\$7,076
General Tier 2	215,358
General PEPRA Tier 2	49,409
General Tier 2C	215,345
General PEPRA Tier 2C	81,759
Safety	156,036
Safety PEPRA	<u>19,934</u>
Total	\$744,917

⁽²⁾ The total employer rate has been adjusted by 0.31% to account for the cost associated with the cessation of member contributions after 30 years of service.

⁽³⁾ Basic UAAL rates have been calculated on a combined basis for all General Tiers. COLA UAAL rates have been calculated on a combined basis for all General Tiers that have a COLA (excludes General Tier 2 without COLA and General PEPRA Tier 2 without COLA).

⁽⁴⁾ Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.

⁽⁵⁾ Includes 0.55% in COLA UAAL costs attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627.

⁽⁶⁾ These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

⁽⁷⁾ The total employer rate has been adjusted by 1.28% to account for the cost associated with the cessation of member contributions after 30 years of service.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

The employer contribution rates as of June 30, 2018 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Employer Contribution Rate

The chart below details the changes in the recommended average employer contribution rate from the prior valuation to the current year's valuation.

The chart reconciles the employer contribution from the prior valuation to the amount determined in this valuation.

CHART 15

Reconciliation of Recommended Average Employer Contribution Rate from June 30, 2017 to June 30, 2018 (Dollar Amounts in Thousands)

	Contribution Rate	Estimated Annual Dollar Cost ⁽¹⁾
Recommended Average Employer Contribution Rate as of June 30, 2017	27.09%	\$201,865
Effect of investment gain ⁽²⁾	(0.65%)	\$(4,945)
Effect of lower than expected contributions ⁽³⁾	0.03%	228
Effect of lower than expected individual salary increases	(0.06%)	(456)
Effect of lower than expected total payroll growth on UAAL amortization rate	0.22%	1,674
Effect of changes in demographics of members amongst tiers on Normal Cost	(0.05%)	(380)
Effect of net other changes ⁽⁴⁾	(0.07%)	3,700
Effect of changes in actuarial assumptions	<u>1.98%</u>	<u>15,064</u>
Total change	<u>1.40%</u>	<u>\$14,885</u>
Recommended Average Employer Contribution Rate as of June 30, 2018	28.49%	\$216,750

⁽¹⁾ Based on projected payroll for each year.

⁽²⁾ The Association's valuation value of assets earned 8.62% which was higher than the 7.50% assumed rate of return for 2017/2018.

⁽³⁾ Contribution loss from payroll increase less than expected offset somewhat by the contribution gain from one-year delay in implementing lower contribution rates recommended in June 30, 2017 valuation.

⁽⁴⁾ Other differences in actual versus expected experience including mortality, disability, withdrawal, retirement and in-service redemption experience. Estimated annual dollar cost also reflects change in payroll from prior valuation.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

The member contribution rates as of June 30, 2018 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Member Contribution Rate

The chart below details the changes in the recommended average member contribution rate from the prior valuation to the current year's valuation.

The chart reconciles the member contribution from the prior valuation to the amount determined in this valuation.

CHART 16

Reconciliation of Recommended Average Member Contribution Rate from June 30, 2017 to June 30, 2018 (Dollar Amounts in Thousands)

	Contribution Rate ⁽¹⁾	Estimated Annual Dollar Cost ⁽²⁾
Recommended Average Member Contribution Rate in June 30, 2017 Valuation	9.75%	\$72,643
Effect of changes in demographics of members amongst tiers ⁽³⁾	(0.10%)	\$743
Effect of changes in actuarial assumptions	<u>0.40%</u>	<u>3,043</u>
Total change	<u>0.30%</u>	<u>\$3,786</u>
Recommended Average Member Contribution Rate in June 30, 2018 Valuation	10.05%	\$76,429

⁽¹⁾ Average member contribution rates are after reflecting the impact of the cessation of member contribution after 30 years of service for non-PEPRA tiers.

⁽²⁾ Based on projected payroll for each year.

⁽³⁾ Estimated annual dollar cost also reflects change in payroll from prior valuation.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

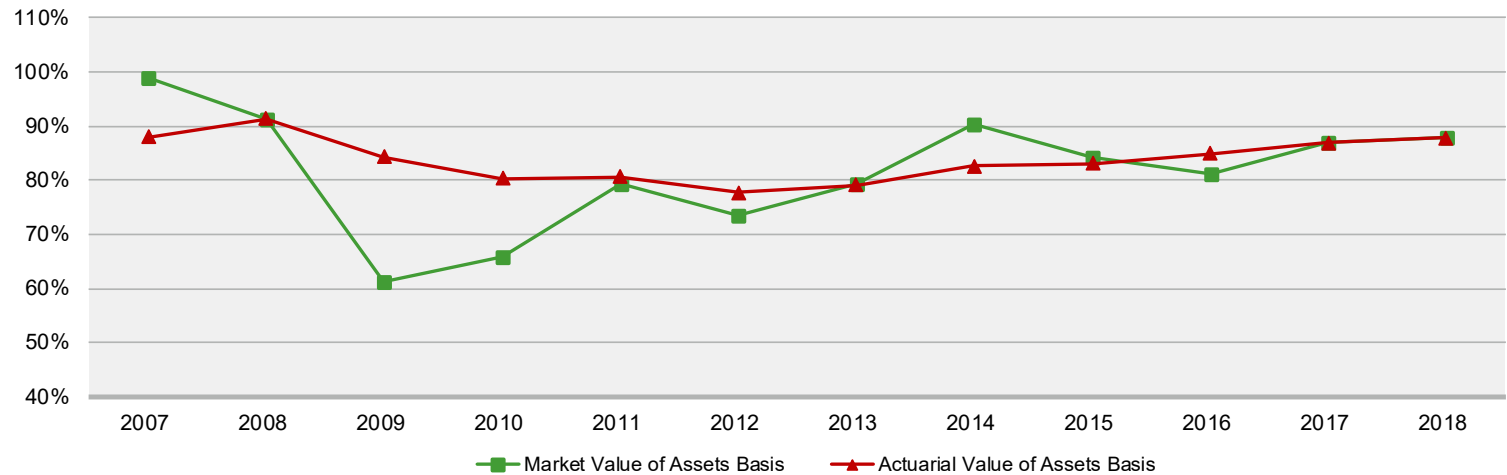
E. FUNDED RATIO

A critical piece of information regarding the Plan's financial status is the funded ratio. The ratios compare the valuation value of assets and market value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors. The chart below depicts a history of the funded ratio for this plan.

Chart 18 on the next page shows the Plan's schedule of funding progress for the last ten years.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the valuation or market value of assets is used.

CHART 17
Funded Ratio for Plan Years Ending June 30, 2007 - 2018



SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

CHART 18

Schedule of Funding Progress

Actuarial Valuation Date	Valuation Value of Assets⁽¹⁾ (a)	Actuarial Accrued Liability (AAL)⁽²⁾ (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Projected Covered Payroll (c)	UAAL as a Percentage of Projected Covered Payroll [(b) - (a) / (c)]
06/30/2009	\$3,090,148,000	\$3,663,701,000	\$573,553,000	84.34%	\$634,777,000	90.36%
06/30/2010	3,115,984,000	3,877,443,000	761,459,000	80.36%	654,829,000	116.28%
06/30/2011	3,220,388,000	3,995,352,000	774,964,000	80.60%	637,037,000	121.65%
06/30/2012	3,397,360,000	4,373,227,000	975,867,000	77.69%	633,848,000	153.96%
06/30/2013	3,621,709,000	4,575,063,000	953,354,000	79.16%	638,764,000	149.25%
06/30/2014	3,910,801,000	4,731,016,000	820,215,000	82.66%	648,257,000	126.53%
06/30/2015	4,302,330,000	5,178,157,000	875,827,000	83.09%	678,705,000	129.04%
06/30/2016	4,585,713,000	5,398,756,000	813,043,000	84.94%	706,000,000	115.16%
06/30/2017	4,959,070,000	5,703,396,000	744,326,000	86.95%	744,917,000	99.92%
06/30/2018	5,382,777,000	6,129,758,000	746,981,000	87.81%	760,815,000	98.18%

⁽¹⁾ Excludes assets for supplemental medical benefit reserve and statutory contingency reserve.

⁽²⁾ Excludes liabilities held for supplemental medical benefit reserve and statutory contingency reserve.

SECTION 2: Valuation Results for the Ventura County Employees' Retirement Association

F. VOLATILITY RATIOS

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measure since it is based on the current level of assets.

For VCERA, the current AVR is about 7.1. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 7.1% of one-year's payroll. Since VCERA amortizes actuarial gains and losses over a period of 15 years, there would be a 0.6% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions.

For VCERA, the current LVR is about 8.1. This is about 14% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long term.

CHART 19

Volatility Ratios for Years Ended June 30, 2009 – 2018

Year Ended June 30	Asset Volatility Ratios			Liability Volatility Ratios		
	General	Safety	Total	General	Safety	Total
2009	2.8	5.7	3.5	4.4	9.8	5.8
2010	3.1	6.3	3.9	4.4	10.1	5.9
2011	3.9	8.2	5.0	4.7	10.8	6.3
2012	3.8	8.7	5.1	5.1	12.3	6.9
2013	4.3	9.7	5.7	5.3	12.7	7.2
2014	4.9	11.5	6.6	5.4	12.9	7.3
2015	4.8	11.4	6.4	5.6	13.8	7.6
2016	4.5	11.7	6.2	5.5	14.5	7.6
2017	4.8	12.7	6.7	5.5	14.6	7.7
2018	5.1	13.6	7.1	5.9	15.2	8.1

This chart shows how the asset and liability volatility ratios have varied over time, both for the plan in total and separately for General and Safety.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A

Table of Plan Coverage

i. General Tier 1

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	35	49	-28.6%
Average age	62.8	62.5	0.3
Average service	33.2	33.5	-0.3
Projected total compensation ⁽¹⁾	\$5,802,740	\$7,076,281	-18.0%
Projected average compensation	\$165,793	\$144,414	14.8%
Account balances	\$9,343,680	\$11,606,918	-19.5%
Total active vested members	35	49	-28.6%
Vested terminated members⁽²⁾	40	41	-2.4%
Retired members:			
Number in pay status	1,337	1,389	-3.7%
Average age	76.7	76.3	0.4
Average monthly benefit ⁽³⁾	\$4,079	\$3,867	5.5%
Disabled members:			
Number in pay status	90	98	-8.2%
Average age	74.1	73.9	0.2
Average monthly benefit ⁽³⁾	\$2,644	\$2,481	6.6%
Beneficiaries:			
Number in pay status	342	352	-2.8%
Average age	79.5	79.7	-0.2
Average monthly benefit ⁽³⁾	\$1,866	\$1,744	7.0%

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and "across the board" salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A (continued)

Table of Plan Coverage

ii. General Tier 2

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	1,825	1,918	-4.8%
Average age	50.5	50.3	0.2
Average service	15.7	15.2	0.5
Projected total compensation ⁽¹⁾	\$211,517,740	\$215,358,266	-1.8%
Projected average compensation	\$115,900	\$112,283	3.2%
Account balances	\$188,612,792	\$183,060,429	3.0%
Total active vested members	1,764	1,799	-1.9%
Vested terminated members⁽²⁾	922	946	-2.5%
Retired members:			
Number in pay status	1,762	1,635	7.8%
Average age	69.5	69.3	0.2
Average monthly benefit ⁽³⁾	\$1,996	\$1,865	7.0%
Disabled members:			
Number in pay status	245	250	-2.0%
Average age	66.2	65.6	0.6
Average monthly benefit ⁽³⁾	\$1,535	\$1,515	1.3%
Beneficiaries:			
Number in pay status	265	252	5.2%
Average age	71.3	70.9	0.4
Average monthly benefit ⁽³⁾	\$867	\$826	5.0%

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and "across the board" salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A (continued)

Table of Plan Coverage

iii. General Tier 2C

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	2,757	2,950	-6.5%
Average age	49.0	48.4	0.6
Average service	14.3	13.5	0.8
Projected total compensation ⁽¹⁾	\$210,167,487	\$215,344,708	-2.4%
Projected average compensation	\$76,230	\$72,998	4.4%
Account balances	\$224,845,410	\$215,746,658	4.2%
Total active vested members	2,640	2,720	-2.9%
Vested terminated members⁽²⁾	1,045	1,040	0.5%
Retired members:			
Number in pay status	1,326	1,189	11.5%
Average age	67.9	67.5	0.4
Average monthly benefit ⁽³⁾	\$1,817	\$1,758	3.4%
Disabled members:			
Number in pay status	85	85	0.0%
Average age	63.0	62.6	0.4
Average monthly benefit ⁽³⁾	\$1,558	\$1,477	5.5%
Beneficiaries:			
Number in pay status	97	92	5.4%
Average age	66.0	65.3	0.7
Average monthly benefit ⁽³⁾	\$976	\$982	-0.6%

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and "across the board" salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A (continued)

Table of Plan Coverage

iv. General PEPRA Tier 1

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	0	0	N/A
Average age	N/A	N/A	N/A
Average service	N/A	N/A	N/A
Projected total compensation ⁽¹⁾	N/A	N/A	N/A
Projected average compensation	N/A	N/A	N/A
Account balances	N/A	N/A	N/A
Total active vested members	0	0	N/A
Vested terminated members⁽²⁾	3	3	0.0%
Retired members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A
Disabled members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and “across the board” salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A (continued)

Table of Plan Coverage

v. General PEPRA Tier 2

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	748	634	18.0%
Average age	41.0	41.0	0.0
Average service	2.4	1.9	0.5
Projected total compensation ⁽¹⁾	\$60,011,431	\$49,408,512	21.5%
Projected average compensation	\$80,229	\$77,931	2.9%
Account balances	\$9,053,431	\$5,832,165	55.2%
Total active vested members	36	12	200.0%
Vested terminated members⁽²⁾	151	118	28.0%
Retired members:			
Number in pay status	2	0	N/A
Average age	73.3	N/A	N/A
Average monthly benefit ⁽³⁾	\$181	N/A	N/A
Disabled members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and "across the board" salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A (continued)

Table of Plan Coverage

vi. General PEPRA Tier 2C

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	1,721	1,577	9.1%
Average age	37.3	36.7	0.6
Average service	2.6	2.0	0.6
Projected total compensation ⁽¹⁾	\$93,581,095	\$81,759,345	14.5%
Projected average compensation	\$54,376	\$51,845	4.9%
Account balances	\$21,101,671	\$14,127,943	49.4%
Total active vested members	87	14	521.4%
Vested terminated members⁽²⁾	409	336	21.7%
Retired members:			
Number in pay status	1	0	N/A
Average age	71.5	N/A	N/A
Average monthly benefit ⁽³⁾	\$10	N/A	N/A
Disabled members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and "across the board" salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A (continued)

Table of Plan Coverage

vii. Safety

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	1,192	1,257	-5.2%
Average age	44.1	43.7	0.4
Average service	17.5	17.1	0.4
Projected total compensation ⁽¹⁾	\$152,611,256	\$156,035,986	-2.2%
Projected average compensation	\$128,030	\$124,134	3.1%
Account balances	\$209,672,135	\$197,710,206	6.1%
Total active vested members	1,182	1,206	-2.0%
Vested terminated members⁽²⁾	291	289	0.7%
Retired members:			
Number in pay status	806	753	7.0%
Average age	66.8	66.7	0.1
Average monthly benefit ⁽³⁾	\$8,014	\$7,713	3.9%
Disabled members:			
Number in pay status	399	398	0.3%
Average age	64.7	64.3	0.4
Average monthly benefit ⁽³⁾	\$5,784	\$5,560	4.0%
Beneficiaries:			
Number in pay status	281	273	2.9%
Average age	67.5	67.6	-0.1
Average monthly benefit ⁽³⁾	\$3,119	\$3,079	1.3%

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and "across the board" salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT A (continued)

Table of Plan Coverage

viii. Safety PEPRA

Category	Year Ended June 30		Change From Prior Year
	2018	2017	
Active members in valuation:			
Number	333	251	32.7%
Average age	30.3	29.7	0.6
Average service	2.5	2.1	0.4
Projected total compensation ⁽¹⁾	\$27,123,466	\$19,934,288	36.1%
Projected average compensation	\$81,452	\$79,419	2.6%
Account balances	\$8,090,226	\$4,934,014	64.0%
Total active vested members	18	1	1700.0%
Vested terminated members⁽²⁾	48	36	33.3%
Retired members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A
Disabled members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit ⁽³⁾	N/A	N/A	N/A

⁽¹⁾ Calculated by increasing annualized bi-weekly compensations as of valuation date by one-half year of inflation and "across the board" salary increases.

⁽²⁾ Includes terminated members with member contributions on deposit.

⁽³⁾ Excludes vested fixed supplemental and supplemental medical benefit amounts.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT B

**Members in Active Service and Projected Average Compensation as of June 30, 2018
By Age and Years of Service**

i. General Tier 1

Age	Total	Years of Service								
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	--	--	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--	--	--
35 - 39	--	--	--	--	--	--	--	--	--	--
40 - 44	--	--	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--	--	--
50 - 54	2	--	--	--	1	1	--	--	--	--
55 - 59	\$246,374	--	--	--	\$222,480	\$270,268	--	--	--	--
60 - 64	8	--	--	--	--	--	2	2	2	2
65 - 69	194,208	--	--	--	--	--	\$286,000	\$240,355	\$115,494	\$134,982
70 & over	16	--	--	--	3	1	1	1	6	4
	164,267	--	--	--	217,037	234,060	306,800	306,801	119,667	102,875
	6	--	--	--	1	--	1	1	1	2
	130,080	--	--	--	164,614	--	240,475	82,252	123,096	85,020
	3	--	--	1	--	--	--	--	--	2
	115,861	--	--	\$227,362	--	--	--	--	--	60,111
Total	35	--	--	1	5	2	4	4	9	10
	\$165,793	--	--	\$227,362	\$207,641	\$252,164	\$279,819	\$217,440	\$119,120	\$97,172

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT B (continued)

**Members in Active Service and Projected Average Compensation as of June 30, 2018
By Age and Years of Service**

ii. General Tier 2

Age	Total	Years of Service								
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	1	1	--	--	--	--	--	--	--	--
	\$46,537	\$46,537	--	--	--	--	--	--	--	--
25 - 29	11	2	9	--	--	--	--	--	--	--
	79,813	50,979	\$86,220	--	--	--	--	--	--	--
30 - 34	83	9	62	12	--	--	--	--	--	--
	105,442	92,783	109,125	\$95,908	--	--	--	--	--	--
35 - 39	202	13	84	80	25	--	--	--	--	--
	108,681	90,857	110,757	112,581	\$98,494	--	--	--	--	--
40 - 44	222	7	47	80	75	13	--	--	--	--
	114,000	110,085	113,235	120,237	108,573	\$111,812	--	--	--	--
45 - 49	336	10	60	99	99	49	19	--	--	--
	114,250	108,355	104,011	119,896	118,258	111,303	\$106,981	--	--	--
50 - 54	313	7	46	72	67	62	46	13	--	--
	123,093	112,322	117,921	119,242	122,792	141,898	112,800	\$116,801	--	--
55 - 59	346	6	49	75	65	55	49	32	15	--
	117,601	112,055	111,614	117,094	115,596	124,905	118,914	121,739	\$110,700	--
60 - 64	231	5	40	45	34	39	36	20	12	--
	120,602	127,290	120,980	109,834	113,682	116,760	128,835	139,478	132,869	--
65 - 69	64	1	10	23	15	4	4	6	1	--
	111,849	152,735	102,220	106,734	114,731	136,091	107,326	122,087	101,336	--
70 & over	16	1	2	3	1	5	--	3	1	--
	122,296	51,037	148,688	119,968	198,351	110,685	--	124,528	123,057	--
Total	1,825	62	409	489	381	227	154	74	29	--
	\$115,900	\$101,897	\$111,150	\$116,096	\$115,061	\$124,345	\$117,634	\$125,807	\$119,977	--

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT B (continued)

**Members in Active Service and Projected Average Compensation as of June 30, 2018
By Age and Years of Service**

iii. General Tier 2C

Age	Total	Years of Service								
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	3	3	--	--	--	--	--	--	--	--
	\$48,015	\$48,015	--	--	--	--	--	--	--	--
25 - 29	30	5	25	--	--	--	--	--	--	--
	65,071	62,866	\$65,512	--	--	--	--	--	--	--
30 - 34	256	24	163	69	--	--	--	--	--	--
	73,493	67,497	76,268	\$69,022	--	--	--	--	--	--
35 - 39	358	23	145	152	38	--	--	--	--	--
	77,865	69,398	80,297	76,314	\$79,911	--	--	--	--	--
40 - 44	388	20	106	138	108	16	--	--	--	--
	77,481	67,451	77,149	77,918	79,577	\$74,295	--	--	--	--
45 - 49	391	15	91	114	98	50	22	1	--	--
	76,979	66,511	78,408	75,857	77,836	80,703	\$72,577	\$58,537	--	--
50 - 54	449	9	80	117	112	63	60	8	--	--
	76,246	65,241	75,766	73,304	76,267	81,934	79,209	69,127	--	--
55 - 59	467	11	74	108	101	62	60	37	14	--
	76,039	54,030	73,506	72,277	79,056	79,666	77,985	80,756	\$77,106	--
60 - 64	293	4	48	70	63	36	42	23	7	--
	76,416	58,994	75,964	73,432	72,765	79,051	81,762	83,946	81,801	--
65 - 69	86	3	26	17	18	10	7	5	--	--
	75,104	50,609	73,828	69,024	83,263	73,168	75,872	90,527	--	--
70 & over	36	1	4	12	9	2	2	2	4	--
	72,967	55,697	81,761	67,921	76,903	73,481	64,328	69,009	80,817	--
Total	2,757	118	762	797	547	239	193	76	25	--
	\$76,230	\$64,798	\$76,665	\$74,371	\$77,807	\$79,705	\$78,353	\$80,539	\$79,015	--

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT B (continued)

Members in Active Service and Projected Average Compensation as of June 30, 2018

By Age and Years of Service

iv. General PEPRA Tier 2

Age	Total	Years of Service								
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	18	18	--	--	--	--	--	--	--	--
	\$60,278	\$60,278	--	--	--	--	--	--	--	--
25 - 29	113	112	1	--	--	--	--	--	--	--
	66,580	66,497	\$75,851	--	--	--	--	--	--	--
30 - 34	146	141	4	1	--	--	--	--	--	--
	75,486	75,344	87,855	\$46,074	--	--	--	--	--	--
35 - 39	120	113	5	2	--	--	--	--	--	--
	82,547	81,343	100,460	105,800	--	--	--	--	--	--
40 - 44	94	85	7	2	--	--	--	--	--	--
	82,094	81,202	81,691	121,388	--	--	--	--	--	--
45 - 49	83	79	3	--	--	1	--	--	--	--
	89,959	88,950	108,322	--	--	\$114,591	--	--	--	--
50 - 54	74	69	3	1	1	--	--	--	--	--
	85,437	83,663	111,955	121,388	\$92,307	--	--	--	--	--
55 - 59	48	47	--	--	--	1	--	--	--	--
	91,487	91,314	--	--	--	99,642	--	--	--	--
60 - 64	37	36	1	--	--	--	--	--	--	--
	89,614	90,839	45,501	--	--	--	--	--	--	--
65 - 69	13	12	--	1	--	--	--	--	--	--
	83,265	81,597	--	103,279	--	--	--	--	--	--
70 & over	2	2	--	--	--	--	--	--	--	--
	90,539	90,540	--	--	--	--	--	--	--	--
Total	748	714	24	7	1	2	--	--	--	--
	\$80,229	\$79,513	\$91,989	\$103,588	\$92,307	\$107,117	--	--	--	--

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT B (continued)

Members in Active Service and Projected Average Compensation as of June 30, 2018

By Age and Years of Service

v. General PEPRA Tier 2C

Age	Total	Years of Service								
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	63	63	--	--	--	--	--	--	--	--
	\$40,778	\$40,778	--	--	--	--	--	--	--	--
25 - 29	437	425	12	--	--	--	--	--	--	--
	48,746	48,759	\$48,293	--	--	--	--	--	--	--
30 - 34	412	397	15	--	--	--	--	--	--	--
	56,752	56,197	71,439	--	--	--	--	--	--	--
35 - 39	270	248	21	1	--	--	--	--	--	--
	58,535	57,205	74,535	\$52,450	--	--	--	--	--	--
40 - 44	170	156	13	--	1	--	--	--	--	--
	58,034	57,866	60,678	--	\$49,752	--	--	--	--	--
45 - 49	124	114	8	--	1	1	--	--	--	--
	54,082	54,266	49,166	--	32,650	\$93,928	--	--	--	--
50 - 54	93	88	5	--	--	--	--	--	--	--
	55,740	55,204	65,185	--	--	--	--	--	--	--
55 - 59	83	82	1	--	--	--	--	--	--	--
	54,722	54,545	69,259	--	--	--	--	--	--	--
60 - 64	53	49	4	--	--	--	--	--	--	--
	62,929	61,491	80,546	--	--	--	--	--	--	--
65 - 69	13	12	1	--	--	--	--	--	--	--
	56,300	51,892	109,198	--	--	--	--	--	--	--
70 & over	3	2	1	--	--	--	--	--	--	--
	53,016	35,978	87,093	--	--	--	--	--	--	--
Total	1,721	1,636	81	1	2	1	--	--	--	--
	\$54,376	\$53,814	\$65,582	\$52,450	\$41,201	\$93,928	--	--	--	--

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT B (continued)

Members in Active Service and Projected Average Compensation as of June 30, 2018

By Age and Years of Service

vi. Safety

Age	Total	Years of Service								
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	--	--	--	--	--	--	--	--	--	--
25 - 29	37	4	33	--	--	--	--	--	--	--
30 - 34	147	1	92	54	--	--	--	--	--	--
35 - 39	211	--	43	131	37	--	--	--	--	--
40 - 44	234	2	17	60	122	32	1	--	--	--
45 - 49	266	2	7	18	89	121	28	1	--	--
50 - 54	208	1	2	8	40	50	72	34	1	--
55 - 59	69	--	4	1	7	11	18	17	11	--
60 - 64	17	--	2	1	4	1	1	3	4	1
65 - 69	3	--	--	1	1	--	--	--	--	1
70 & over	--	--	--	--	--	--	--	--	--	--
Total	1,192	10	200	274	300	215	120	55	16	2
	\$128,030	\$97,659	\$114,591	\$116,454	\$126,067	\$137,774	\$148,224	\$153,851	\$164,546	\$242,574

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT B (continued)

Members in Active Service and Projected Average Compensation as of June 30, 2018

By Age and Years of Service

vii. Safety PEPR

Age	Total	Years of Service								
		0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	51	51	--	--	--	--	--	--	--	--
	\$70,981	\$70,981	--	--	--	--	--	--	--	--
25 - 29	140	136	4	--	--	--	--	--	--	--
	80,185	79,336	\$109,051	--	--	--	--	--	--	--
30 - 34	93	85	8	--	--	--	--	--	--	--
	82,014	79,967	103,761	--	--	--	--	--	--	--
35 - 39	31	28	2	1	--	--	--	--	--	--
	85,463	82,789	107,435	\$116,381	--	--	--	--	--	--
40 - 44	8	5	1	--	2	--	--	--	--	--
	97,738	81,009	116,056	--	\$130,402	--	--	--	--	--
45 - 49	4	4	--	--	--	--	--	--	--	--
	94,311	94,311	--	--	--	--	--	--	--	--
50 - 54	2	2	--	--	--	--	--	--	--	--
	141,409	141,409	--	--	--	--	--	--	--	--
55 - 59	3	3	--	--	--	--	--	--	--	--
	139,164	139,164	--	--	--	--	--	--	--	--
60 - 64	1	1	--	--	--	--	--	--	--	--
	141,409	141,409	--	--	--	--	--	--	--	--
65 - 69	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
Total	333	315	15	1	2	--	--	--	--	--
	\$81,452	\$79,838	\$106,481	\$116,381	\$130,402	--	--	--	--	--

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT C

Reconciliation of Member Data – June 30, 2017 to June 30, 2018

	Active Members	Vested Terminated Members⁽¹⁾	Pensioners	Disableds	Beneficiaries	Total
Number as of June 30, 2017	8,636	2,809	4,966	831	969	18,211
New members	575	59	0	0	70	704
Terminations – with vested rights	-223	223	0	0	0	0
Contributions refunds	-90	-70	0	0	0	-160
Retirements	-293	-84	377	0	0	0
New disabilities	-10	-3	-4	17	0	0
Return to work	25	-24	-1	0	0	0
Died with or without beneficiary	-9	-1	-107	-29	-52	-198
Data adjustments	0	0	3	0	-2	1
Number as of June 30, 2018	8,611	2,909	5,234	819	985	18,558

⁽¹⁾ Includes terminated members with member contributions on deposit.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended June 30, 2018	Year Ended June 30, 2017
Contribution income:		
Employer contributions	\$197,682,857	\$190,759,001
Member contributions	<u>74,044,246</u>	<u>72,394,542</u>
Contribution income	\$271,727,103	\$263,153,543
Investment income:		
Interest, dividends and other income	\$45,365,068	\$44,408,458
Adjustment toward market value ⁽¹⁾	406,186,691	345,055,232
Less investment and administrative fees	(21,253,969)	(20,657,671)
Less other expenses	<u>(2,813,622)</u>	<u>0</u>
Net investment income	<u>\$427,484,168</u>	<u>\$368,806,019</u>
Total income available for benefits	\$699,211,271	\$631,959,562
Less benefit payments	\$(277,718,396)	\$(260,745,073)
Change in reserve for future benefits	\$421,492,875	\$371,214,489

⁽¹⁾ Equals the "non-cash" earnings on investments included in the Actuarial Value of Assets.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT E

Summary Statement of Net Assets

	Year Ended June 30, 2018	Year Ended June 30, 2017
Cash equivalents	\$119,098,426	\$113,845,651
Pension software development cost	13,104,280	14,507,383
Accounts receivable:		
Member and employer contributions	\$10,505,031	\$9,565,843
Accrued interest and dividends	3,593,289	2,832,421
Securities sold	18,440,457	15,863,679
Other	<u>35,561</u>	<u>33,621</u>
Total accounts receivable	32,574,338	28,295,564
Investments:		
Equities	\$3,489,835,458	\$3,090,214,577
Fixed income	942,574,067	945,943,802
Real estate	419,523,044	391,122,352
Investments received on securities lending	47,614,918	44,704,884
Others	<u>431,503,005</u>	<u>413,507,540</u>
Total investments at market value	<u>5,331,050,492</u>	<u>4,885,493,155</u>
Total assets	<u>\$5,495,827,536</u>	<u>\$5,042,141,753</u>
Liabilities:		
Securities lending	\$(47,614,918)	\$(44,704,883)
Security purchases	(45,858,296)	(27,617,313)
Accounts payable	(5,860,796)	(5,546,947)
Prepaid contributions	<u>(31,003)</u>	<u>(25,834)</u>
Total liabilities	\$(99,365,013)	\$(77,894,977)
Net assets at market value	<u>\$5,396,462,523</u>	<u>\$4,964,246,776</u>
Net assets at actuarial value	<u>\$5,385,145,897</u>	<u>\$4,963,653,022</u>
Net assets at valuation value	<u>\$5,382,777,075</u>	<u>\$4,959,070,151</u>

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT F

Actuarial Balance Sheet

An overview of the Plan's funding is given by an Actuarial Balance Sheet. In this approach, we first determine the amount and timing of all future payments that will be made by the Plan for current participants. We then discount these payments at the valuation interest rate to the date of the valuation, thereby determining their present value. In this Exhibit only, we refer to this present value as the "liability" of the Plan.

Second, we determine how this liability will be met. These actuarial "assets" include the net amount of assets already accumulated by the Plan, the present value of future member contributions, the present value of future employer normal cost contributions, and the present value of future employer amortization payments.

Actuarial Balance Sheet (\$ in 000s)

<u>Assets</u>	<u>June 30, 2018</u>	<u>June 30, 2017</u>
1. Total valuation value of assets	\$5,382,777	\$4,959,070
2. Present value of future contributions by members	597,469	545,439
3. Present value of future employer contributions for:		
a. Entry age normal cost	633,425	571,174
b. Unfunded actuarial accrued liability	<u>746,981</u>	<u>744,326</u>
4. Total current and future assets	\$7,360,652	\$6,820,009
<u>Liabilities</u>		
5. Present value of benefits for retirees and beneficiaries	\$3,476,620	\$3,229,255
6. Present value of benefits for vested terminated members	171,131	159,743
7. Present value of benefits for active members	<u>3,712,901</u>	<u>3,431,011</u>
8. Total liabilities	\$7,360,652	\$6,820,009

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT G

Summary of Allocated Reserves

Reserves		
	June 30, 2018	June 30, 2017
Member contributions reserve ⁽¹⁾	\$758,313,620	\$725,090,318
Employer advance reserve ⁽¹⁾	2,819,632,958	2,599,031,479
Offset: Interest crediting shortfall tracking account ⁽¹⁾	(1,123,566,014)	(1,084,273,390)
Retiree reserve ⁽¹⁾	2,768,421,677	2,561,943,002
Supplemental death benefit reserve ⁽¹⁾	15,793,858	15,242,982
Vested fixed supplemental (\$108.44) reserve ⁽¹⁾	144,180,976	142,035,760
Undistributed earnings ⁽¹⁾	0	0
Valuation reserves	\$5,382,777,075	\$4,959,070,151
Supplemental medical (\$27.50) reserve ⁽²⁾	2,368,822	4,582,871
Contingency reserve ⁽²⁾	0	0
Total reserves (actuarial value)	\$5,385,145,897	\$4,963,653,022
Market stabilization reserve ⁽²⁾	11,316,625	593,754
Net market value	\$5,396,462,523	\$4,964,246,776

Note: Results may not add due to rounding

⁽¹⁾ *Included in valuation value of assets.*

⁽²⁾ *Not included in valuation value of assets.*

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT H

Development of Unfunded/(Overfunded) Actuarial Accrued Liability for Year Ended June 30, 2018

1. Unfunded actuarial accrued liability at beginning of year		\$744,326,000
2. Total Normal Cost payable at middle of year		141,658,000
3. Expected employer and member contributions		(274,508,000)
4. Interest (whole year on (1) plus half year on (2) + (3))		<u>51,330,000</u>
5. Expected unfunded actuarial accrued liability at end of year		<u>\$662,806,000</u>
6. Actuarial (gain)/loss due to all changes:		
(a) Gain from investment return on valuation value of assets (8.62% return)	\$ (55,696,000)	
(b) Actual contributions less than expected ⁽¹⁾	2,883,000	
(c) Lower than expected individual salary increases	(4,839,000)	
(d) Other experience gains	(6,683,000)	
(e) Changes in actuarial assumptions	<u>148,510,000</u>	
Total changes		<u>\$84,175,000</u>
7. Unfunded actuarial accrued liability at end of year		<u>\$746,981,000</u>

Note: Net gain from other experience of \$8,639,000 (as shown on page 8) is equal to the sum of items: 6(b) through 6(d).

⁽¹⁾ *Contribution loss from payroll increase less than expected offset somewhat by the contribution gain from one-year delay in implementing lower contribution rates recommended in June 30, 2017 valuation.*

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT I

Table of Amortization Bases

	Date Established	Source	Initial Amount	Outstanding Balance	Years Remaining	Payment⁽¹⁾
General Tier 1	June 30, 2004	Restart of Amortization	\$63,394,000	\$9,345,000	1	\$9,706,000
	June 30, 2005	Actuarial (Gain)/Loss	22,085,000	6,140,000	2	3,249,000
	June 30, 2006	Actuarial (Gain)/Loss	7,048,000	2,773,000	3	997,000
	June 30, 2006	Assumption Change	41,538,000	16,317,000	3	5,865,000
	June 30, 2007	Actuarial (Gain)/Loss	(19,901,000)	(9,825,000)	4	(2,698,000)
	June 30, 2008	Actuarial (Gain)/Loss	(18,128,000)	(10,551,000)	5	(2,361,000)
	June 30, 2009	Actuarial (Gain)/Loss	55,190,000	36,349,000	6	6,905,000
	June 30, 2009	Assumption Change	18,574,000	12,225,000	6	2,322,000
	June 30, 2010	Actuarial (Gain)/Loss	50,018,000	36,230,000	7	6,007,000
	June 30, 2011	Actuarial (Gain)/Loss	36,225,000	28,290,000	8	4,179,000
	June 30, 2012	Actuarial (Gain)/Loss	29,865,000	24,741,000	9	3,308,000
	June 30, 2012	Demographic Assumption Change	38,104,000	36,723,000	14	3,447,000
	June 30, 2012	Economic Assumption Change	19,517,000	18,808,000	14	1,765,000
	June 30, 2013	Actuarial (Gain)/Loss	31,670,000	27,561,000	10	3,376,000
	June 30, 2014	Actuarial (Gain)/Loss	16,119,000	14,596,000	11	1,655,000
	June 30, 2015	Actuarial (Gain)/Loss	8,457,000	7,891,000	12	835,000
	June 30, 2015	Assumption Change	47,959,000	47,520,000	17	3,867,000
	June 30, 2016	Actuarial (Gain)/Loss	45,451,000	43,680,000	13	4,339,000
	June 30, 2017	Actuarial (Gain)/Loss	53,640,000	52,721,000	14	4,949,000
	June 30, 2018	Actuarial (Gain)/Loss	51,584,000	51,584,000	15	4,598,000
	June 30, 2018	Assumption Change	3,972,000	<u>3,972,000</u>	20	<u>289,000</u>
				\$457,090,000		\$66,599,000

⁽¹⁾ As of middle of year.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT I (continued)

Table of Amortization Bases

	Date Established	Source	Initial Amount	Outstanding Balance	Years Remaining	Payment⁽¹⁾
General Tier 2	June 30, 2004	Restart of Amortization	\$49,731,000	\$7,332,000	1	\$7,615,000
	June 30, 2005	Actuarial (Gain)/Loss	7,622,000	2,120,000	2	1,122,000
	June 30, 2006	Actuarial (Gain)/Loss	(9,108,000)	(3,581,000)	3	(1,287,000)
	June 30, 2006	Assumption Change	19,085,000	7,498,000	3	2,695,000
	June 30, 2006	Plan Provision Change	14,731,000	5,784,000	3	2,079,000
	June 30, 2007	Actuarial (Gain)/Loss	(39,508,000)	(19,511,000)	4	(5,358,000)
	June 30, 2008	Actuarial (Gain)/Loss	(34,794,000)	(20,248,000)	5	(4,531,000)
	June 30, 2009	Actuarial (Gain)/Loss	71,253,000	46,919,000	6	8,912,000
	June 30, 2009	Assumption Change	22,696,000	14,941,000	6	2,838,000
	June 30, 2010	Actuarial (Gain)/Loss	47,615,000	34,497,000	7	5,720,000
	June 30, 2011	Actuarial (Gain)/Loss	(6,949,000)	(5,438,000)	8	(803,000)
	June 30, 2012	Actuarial (Gain)/Loss	(18,106,000)	(15,004,000)	9	(2,006,000)
	June 30, 2012	Demographic Assumption Change	29,420,000	28,338,000	14	2,660,000
	June 30, 2012	Economic Assumption Change	32,874,000	31,688,000	14	2,975,000
	June 30, 2013	Actuarial (Gain)/Loss	(23,823,000)	(20,749,000)	10	(2,542,000)
	June 30, 2014	Actuarial (Gain)/Loss	(49,125,000)	(44,491,000)	11	(5,043,000)
	June 30, 2015	Actuarial (Gain)/Loss	(62,406,000)	(58,319,000)	12	(6,168,000)
	June 30, 2015	Assumption Change	50,090,000	49,643,000	17	4,040,000
	June 30, 2016	Actuarial (Gain)/Loss	(28,842,000)	(27,722,000)	13	(2,754,000)
	June 30, 2017	Actuarial (Gain)/Loss	(41,622,000)	(40,910,000)	14	(3,840,000)
	June 30, 2018	Actuarial (Gain)/Loss	(86,831,000)	(86,831,000)	15	(7,740,000)
	June 30, 2018	Assumption Change	111,232,000	<u>111,232,000</u>	20	<u>8,092,000</u>
				\$ (2,812,000)		\$6,676,000

⁽¹⁾ As of middle of year.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT I (continued)

Table of Amortization Bases

	Date Established	Source	Initial Amount	Outstanding Balance	Years Remaining	Payment⁽¹⁾
Safety	June 30, 2004	Restart of Amortization	\$210,319,000	\$31,002,000	1	\$32,198,000
	June 30, 2005	Actuarial (Gain)/Loss	19,142,000	5,323,000	2	2,817,000
	June 30, 2006	Actuarial (Gain)/Loss	3,418,000	1,340,000	3	482,000
	June 30, 2006	Assumption Change	42,167,000	16,564,000	3	5,954,000
	June 30, 2007	Actuarial (Gain)/Loss	(37,489,000)	(18,510,000)	4	(5,083,000)
	June 30, 2008	Actuarial (Gain)/Loss	(22,443,000)	(13,055,000)	5	(2,922,000)
	June 30, 2009	Actuarial (Gain)/Loss	78,157,000	51,470,000	6	9,777,000
	June 30, 2009	Assumption Change	49,982,000	32,920,000	6	6,253,000
	June 30, 2010	Actuarial (Gain)/Loss	108,448,000	78,578,000	7	13,029,000
	June 30, 2011	Actuarial (Gain)/Loss	8,879,000	6,943,000	8	1,026,000
	June 30, 2012	Actuarial (Gain)/Loss	(7,501,000)	(6,203,000)	9	(829,000)
	June 30, 2012	Demographic Assumption Change	55,513,000	53,503,000	14	5,022,000
	June 30, 2012	Economic Assumption Change	51,887,000	49,988,000	14	4,692,000
	June 30, 2013	Actuarial (Gain)/Loss	7,588,000	6,618,000	10	811,000
	June 30, 2014	Actuarial (Gain)/Loss	(54,478,000)	(49,336,000)	11	(5,593,000)
	June 30, 2015	Actuarial (Gain)/Loss	(55,657,000)	(52,012,000)	12	(5,501,000)
	June 30, 2015	Assumption Change	119,953,000	118,871,000	17	9,674,000
	June 30, 2016	Actuarial (Gain)/Loss	(17,062,000)	(16,396,000)	13	(1,629,000)
	June 30, 2017	Actuarial (Gain)/Loss	(9,288,000)	(9,123,000)	14	(856,000)
	June 30, 2018	Actuarial (Gain)/Loss	(29,088,000)	(29,088,000)	15	(2,593,000)
	June 30, 2018	Assumption Change	33,306,000	<u>33,306,000</u>	20	<u>2,423,000</u>
				\$292,703,000		\$69,152,000

⁽¹⁾ As of middle of year.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT I (continued)

Table of Amortization Bases

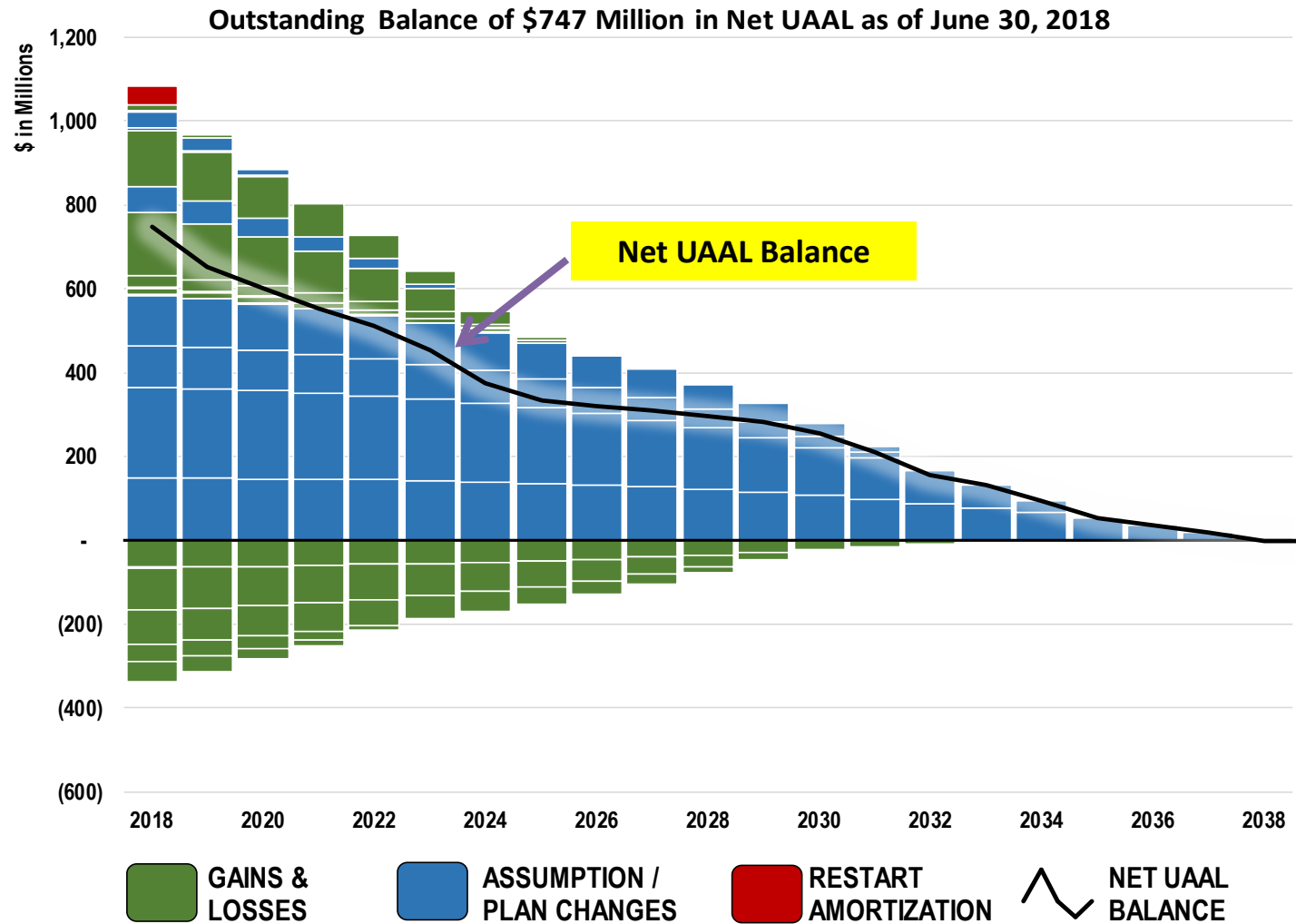
	Date Established	Source	Initial Amount	Outstanding Balance	Years Remaining	Payment⁽¹⁾
Total VCERA	June 30, 2004	Restart of Amortization	\$323,444,000	\$47,679,000	1	\$49,519,000
	June 30, 2005	Actuarial (Gain)/Loss	48,849,000	13,583,000	2	7,188,000
	June 30, 2006	Actuarial (Gain)/Loss	1,358,000	532,000	3	192,000
	June 30, 2006	Assumption Change	102,790,000	40,379,000	3	14,514,000
	June 30, 2006	Plan Provision Change	14,731,000	5,784,000	3	2,079,000
	June 30, 2007	Actuarial (Gain)/Loss	(96,898,000)	(47,846,000)	4	(13,139,000)
	June 30, 2008	Actuarial (Gain)/Loss	(75,365,000)	(43,854,000)	5	(9,814,000)
	June 30, 2009	Actuarial (Gain)/Loss	204,600,000	134,738,000	6	25,594,000
	June 30, 2009	Assumption Change	91,252,000	60,086,000	6	11,413,000
	June 30, 2010	Actuarial (Gain)/Loss	206,081,000	149,305,000	7	24,756,000
	June 30, 2011	Actuarial (Gain)/Loss	38,155,000	29,795,000	8	4,402,000
	June 30, 2012	Actuarial (Gain)/Loss	4,258,000	3,534,000	9	473,000
	June 30, 2012	Demographic Assumption Change	123,037,000	118,564,000	14	11,129,000
	June 30, 2012	Economic Assumption Change	104,278,000	100,484,000	14	9,432,000
	June 30, 2013	Actuarial (Gain)/Loss	15,435,000	13,430,000	10	1,645,000
	June 30, 2014	Actuarial (Gain)/Loss	(87,484,000)	(79,231,000)	11	(8,981,000)
	June 30, 2015	Actuarial (Gain)/Loss	(109,606,000)	(102,440,000)	12	(10,834,000)
	June 30, 2015	Assumption Change	218,002,000	216,034,000	17	17,581,000
	June 30, 2016	Actuarial (Gain)/Loss	(453,000)	(438,000)	13	(44,000)
	June 30, 2017	Actuarial (Gain)/Loss	2,730,000	2,688,000	14	253,000
	June 30, 2018	Actuarial (Gain)/Loss	(64,335,000)	(64,335,000)	15	(5,735,000)
	June 30, 2018	Assumption Change	148,510,000	<u>148,510,000</u>	20	<u>10,804,000</u>
				\$746,981,000		\$142,427,000

⁽¹⁾ As of middle of year.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT J

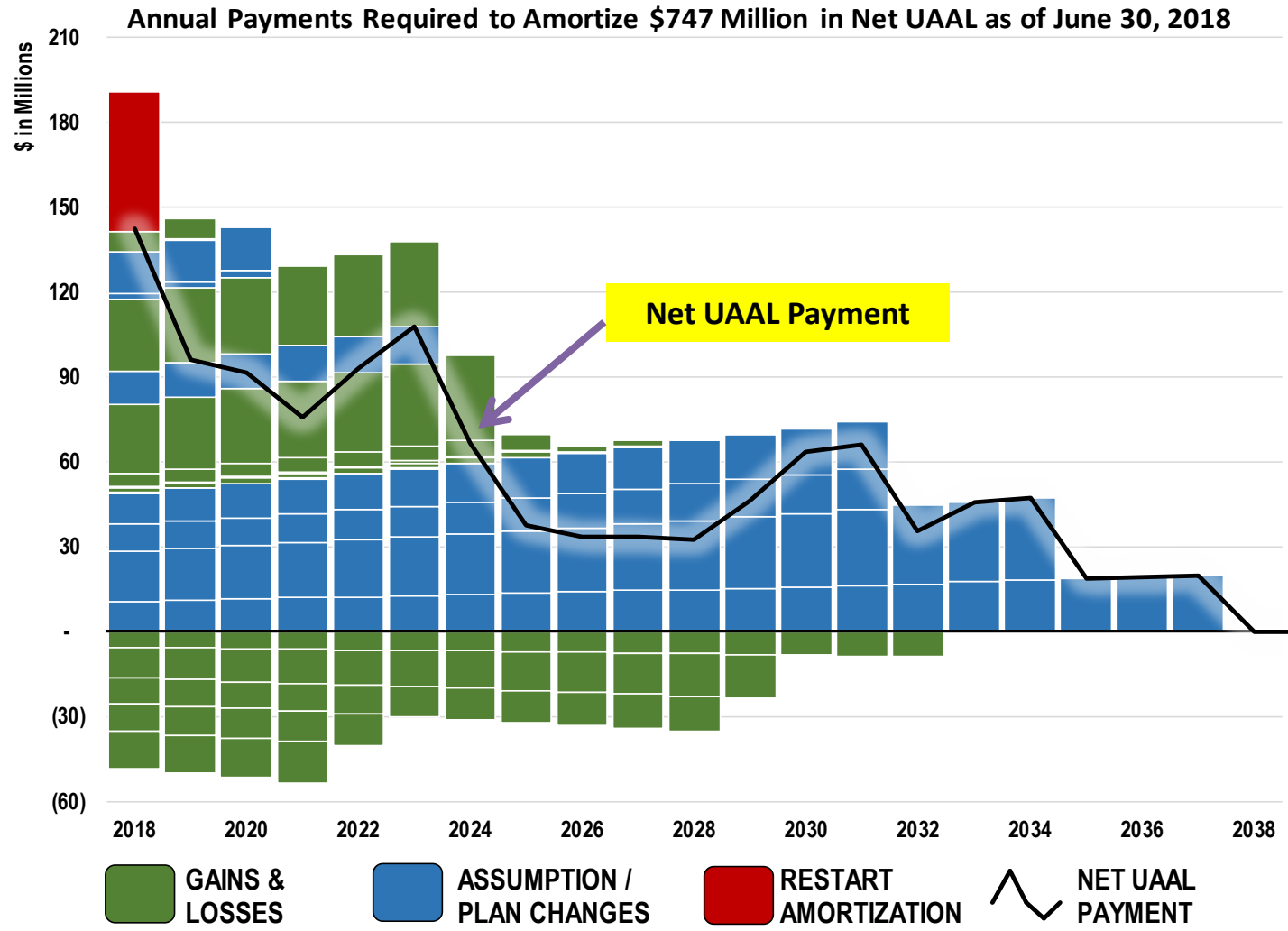
Projection of UAAL Balances and Payments



SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT J (continued)

Projection of UAAL Balances and Payments



SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT K

Section 415 Limitations

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of \$160,000 indexed for inflation. That limit is \$220,000 for 2018. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions. Limits are also affected by the "grandfather" election under Section 415(b)(10).

For non-PEPRA members, benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Contribution rates determined in this valuation have not been reduced for the Section 415 limitations. Actual limitations will result in gains as they occur.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

EXHIBIT L

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of members and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age; and
- (d) Turnover rates — the rates at which members of various years of service are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the determined cost allocated to the current year of service, as a level % of payroll over the members' career.

Actuarial Accrued Liability for Actives:

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability for Pensioners:

The single sum value of lifetime benefits to benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

SECTION 3: Supplemental Information for the Ventura County Employees' Retirement Association

**Unfunded/(Overfunded) Actuarial
Accrued Liability:**

The extent to which the actuarial accrued liability of the Plan exceeds (or is exceeded by) the assets of the Plan. There are many approaches to paying off the unfunded or overfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

**Amortization of the Unfunded/
(Overfunded) Actuarial
Accrued Liability:**

Payments made over a period of years equal in value to the Plan's unfunded or overfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the market gains and losses to avoid significant swings in the value of assets from one year to the next.

Payroll or Compensation:

Compensation Earnable and Pensionable Compensation expected to be paid to active members during the twelve months following the valuation date. Only Compensation Earnable and Pensionable Compensation that would possibly go into the determination of retirement benefits are included.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired members as of the valuation date (including 985 beneficiaries in pay status)	7,038
2. Members inactive during year ended June 30, 2018 with vested rights ⁽¹⁾	2,909
3. Members active during the year ended June 30, 2018	8,611

The actuarial factors as of the valuation date are as follows (amounts in 000s):

1. Normal cost	\$150,769
2. Present value of future benefits	7,360,652
3. Present value of future normal costs (employer and member)	1,230,894
4. Actuarial accrued liability ⁽²⁾	6,129,758
Retired members and beneficiaries	\$3,476,620
Inactive members with vested rights ⁽¹⁾	171,131
Active members	2,482,007
5. Valuation value of assets ⁽²⁾ (\$5,396,463 at market value as reported by VCERA)	5,382,777
6. Unfunded actuarial accrued liability	\$746,981

⁽¹⁾ Includes terminated members with member contributions on deposit.

⁽²⁾ Excludes liabilities and assets held for supplemental medical benefit reserve and statutory contingency reserve.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

The determination of the recommended average employer contribution is as follows	Dollar Amount (in 000s)	% of Payroll
1. Total normal cost	\$150,769	19.82%
2. Expected employee contributions	<u>(76,429)</u>	<u>(10.05%)</u>
3. Employer normal cost: (1) + (2)	\$74,340	9.77%
4. Amortization of unfunded actuarial accrued liability	<u>142,410</u>	<u>18.72%</u>
5. Total recommended average employer contribution: (3) + (4)	\$216,750	28.49%
6. Projected compensation	\$760,815	

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

EXHIBIT II

Actuarial Assumptions and Methods

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2014 through June 30, 2017 Actuarial Experience Study report dated May 24, 2018. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both PEPRA and Non-PEPRA members.
<u>Economic Assumptions</u>	
Net Investment Return:	7.25%, net of investment and administrative expenses.
Member Contribution Crediting Rate:	2.75% (actual increase is based on projected long term ten-year Treasury rate).
Consumer Price Index:	Increase of 2.75% per year; retiree COLA increases due to CPI are subject to a 3.00% maximum change per year for both PEPRA and Non-PEPRA General Tier 1 and both PEPRA and Non-PEPRA Safety. For both PEPRA and non-PEPRA General Tier 2, SEIU members receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI, that applies to future service after March 2003.
Payroll Growth:	Inflation of 2.75% per year plus “across the board” real salary increases of 0.50% per year.
Increase in the Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 2.75% per year from the valuation date.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.75% per year from the valuation date.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Individual Salary Increases:

Annual Rate of Compensation Increase (%)

Inflation: 2.75% per year; plus “across the board” real salary increases of 0.50% per year; plus the following promotional and merit increases:

Years of Service	General	Safety
Less than 1	7.00	8.50
1	5.25	6.50
2	4.00	5.00
3	3.50	4.25
4	2.75	3.75
5	2.25	3.50
6	2.00	2.50
7	1.75	1.50
8	1.50	1.25
9	1.25	1.00
10	1.00	0.95
11	0.95	0.90
12	0.90	0.85
13	0.85	0.80
14	0.80	0.70
15	0.75	0.70
16	0.70	0.70
17	0.65	0.70
18	0.60	0.70
19	0.55	0.70
20 and Over	0.50	0.70

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Demographic Assumptions

Mortality Rates:

<i>Healthy:</i>	<p>For General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) times 90% for males and 100% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017</p> <p>For Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) times 75% for males and 85% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017</p>
<i>Disabled:</i>	<p>For General Members: Headcount-Weighted RP-2014 Disabled Retiree Mortality Table (separate tables for males and females) times 85% for males and 100% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017</p> <p>For Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) times 100% for males and 115% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017</p>
<i>Beneficiaries:</i>	<p>Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who has taken a service (non-disability) retirement</p>
<i>Pre-Retirement:</i>	<p>For General and Safety Members: Headcount-Weighted RP-2014 Employee Mortality Table (separate tables for males and females) times 80%, projected generationally with the two-dimensional scale MP-2017</p>

The RP-2014 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Member Contribution Rates:

For General Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) times 90% for males and 100% for females, projected 20 years with the two-dimensional mortality improvement scale MP-2017, weighted one-third male and two-thirds female

For Safety Members: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) times 75% for males and 85% for females, projected 20 years with the two-dimensional mortality improvement scale MP-2017, weighted 80% male and 20% female

Termination Rates Before Retirement:

Age	Rate (%)	
	Mortality	
	Male	Female
25	0.05	0.02
30	0.05	0.02
35	0.05	0.03
40	0.06	0.04
45	0.10	0.07
50	0.17	0.11
55	0.27	0.17
60	0.45	0.24
65	0.78	0.36
70	1.27	0.59

Note that generational projections beyond the base year (2014) are not reflected in the above mortality rates. All pre-retirement deaths are assumed to be non-service connected related.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Termination Rates Before Retirement (continued):

Age	Rate (%)	
	Disability	
	General ⁽¹⁾	Safety ⁽²⁾
20	0.01	0.05
25	0.02	0.11
30	0.03	0.24
35	0.06	0.36
40	0.11	0.52
45	0.17	0.84
50	0.23	1.30
55	0.31	2.76
60	0.41	5.64
65	0.54	2.80
70	0.69	0.00

⁽¹⁾ 25% of General disabilities are assumed to be service connected disabilities and the other 75% are assumed to be non-service connected disabilities.

⁽²⁾ 90% of Safety disabilities are assumed to be service connected disabilities and the other 10% are assumed to be non-service connected disabilities.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Termination Rates Before Retirement (continued):

Years of Service	Rate (%)	
	Withdrawal ⁽¹⁾	
	General	Safety
Less than 1	14.00	11.00
1	10.00	6.00
2	8.25	5.75
3	7.25	4.50
4	6.00	4.25
5	5.00	3.00
6	4.00	2.50
7	3.50	2.25
8	3.50	1.80
9	3.25	1.60
10	3.25	1.40
11	3.00	1.20
12	3.00	1.00
13	2.75	0.95
14	2.75	0.90
15	2.50	0.85
16	2.50	0.80
17	2.25	0.75
18	2.00	0.70
19	2.00	0.65
20 or more	2.00	0.60

⁽¹⁾ The greater of a refund of member contributions and a deferred annuity is valued when a member withdraws.

No withdrawal is assumed after a member is first assumed to retire.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Retirement Rates:

Rate (%)				
	General Tier 1 and 2		Safety Non-PEPRA	
Age	Less than 30 Years of Service	30 or More Years of Service	Less than 30 Years of Service	30 or More Years of Service
Under 50	0.00	50.00	1.00	1.00
50	2.00	2.00	2.00	2.00
51	2.00	2.00	2.25	2.25
52	2.50	2.50	2.50	2.50
53	3.00	3.00	3.50	3.50
54	3.25	3.25	13.00	13.00
55	4.75	4.75	20.00	30.00
56	5.00	5.00	20.00	30.00
57	5.50	5.50	18.00	27.00
58	7.00	7.00	22.00	33.00
59	7.50	7.50	22.00	33.00
60	10.50	15.75	25.00	37.50
61	14.00	21.00	28.00	42.00
62	25.00	37.50	35.00	45.00
63	20.00	30.00	35.00	45.00
64	20.00	30.00	35.00	45.00
65	28.00	42.00	100.00	100.00
66	35.00	52.50	100.00	100.00
67	30.00	45.00	100.00	100.00
68	30.00	45.00	100.00	100.00
69	22.50	22.50	100.00	100.00
70	22.50	22.50	100.00	100.00
71	20.00	20.00	100.00	100.00
72	20.00	20.00	100.00	100.00
73	20.00	20.00	100.00	100.00
74	20.00	20.00	100.00	100.00
75	100.00	100.00	100.00	100.00

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Retirement Rates (continued):

Age	Rate (%)	
	General PEPR Tier 1 and 2	Safety PEPR
50	0.00	4.00
51	0.00	2.25
52	1.50	3.50
53	1.50	5.50
54	2.00	13.00
55	4.00	20.00
56	4.50	20.00
57	5.00	18.00
58	5.50	18.00
59	6.00	25.00
60	9.00	25.00
61	11.00	25.00
62	22.50	40.00
63	20.00	40.00
64	18.00	40.00
65	20.00	100.00
66	30.00	100.00
67	30.00	100.00
68	25.00	100.00
69	35.00	100.00
70	50.00	100.00
71	50.00	100.00
72	50.00	100.00
73	50.00	100.00
74	50.00	100.00
75	100.00	100.00

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

**Retirement Age and Benefit for
Deferred Vested Members:**

For current and future deferred vested members, retirement age assumptions are as follows:

General Age:	59
Safety Age:	53

We assume that 45% and 60% of future General and Safety deferred vested members, respectively, will continue to work for a reciprocal employer. For reciprocals, we assume 3.75% and 3.95% compensation increases per annum for General and Safety deferred vested members, respectively.

Future Benefit Accruals:

1.0 year of service per year.

Unknown Data for Members:

Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Definition of Active Members:

All active members of VCERA as of the valuation date.

Form of Payment:

All members are assumed to elect the unmodified option at retirement.

Percent Married:

70% of male members and 55% of female members are assumed to be married at pre-retirement death or retirement. There is no explicit assumption for children's benefits.

Age of Spouse:

Male retirees are 3 years older than their spouses, and female retirees are 2 years younger than their spouses.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

In-Service Redemptions:

Non-PEPRA Formulas

The following assumptions for in-service redemptions pay as a percentage of final average compensation are used:

General Tier 1	7.50%
General Tier 2	3.50%
Safety	7.00%

For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect member contribution rates.

PEPRA Formulas

None

**Average Entry Age for
Member Contribution Rates:**

For non-PEPRA members hired after November 1974 who are not contributing fifty percent of Normal Cost, they will pay a contribution corresponding to a General and Safety member hired at entry age 35 and 27, respectively.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Actuarial Methods

- Actuarial Cost Method:** Entry Age Actuarial Cost Method. Entry Age is the current age minus years of service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formulas for each individual have always been in effect (i.e., “replacement life within each tier”).
- Actuarial Value of Assets:** Market value of assets less unrecognized returns in each of the last ten semi-annual accounting periods. Unrecognized returns are equal to the difference between the actual market return and the expected return on market value and are recognized over a five-year period.
- Valuation Value of Assets:** Actuarial Value of Assets, reduced by the value of the supplemental medical benefit reserve and statutory contingency reserve.
- Amortization Policy:** The UAAL, (i.e., the difference between the Actuarial Accrued Liability and the Valuation Value of Assets), as of June 30, 2011 shall continue to be amortized over separate 15-year period amortization layers based on the valuations during which each separate layer was previously established.
- Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 will be amortized over a period of 15 years.
- Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period of 20 years.
- Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis:
- i) with the exception noted in ii., below, the increase in UAAL as a result of any plan amendments will be amortized over a period of 15 years;
 - ii) the increase in UAAL resulting from a temporary retirement incentive, including the impact of benefits resulting from additional service permitted in Section 31641.04 of the 1937 CERL (Golden Handshake), will be funded over a period of up to 5 years.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

The UAAL will be amortized over “closed” amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation.

The UAAL will be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase.

If an overfunding exists (i.e., the total of all UAAL becomes negative so that there is a surplus), such surplus and any subsequent surpluses will be amortized over an “open” amortization period of 30 years. Any prior UAAL amortization layers will be considered fully amortized, and any subsequent UAAL, will be amortized over 15 years as the first of a new series of amortization layers.

These amortization policy components will apply separately to each of VCERA’s UAAL cost groups.

Basic UAAL contribution rates have been calculated on a combined basis for all General Tiers. COLA UAAL contribution rates have been calculated on a combined basis for all General Tiers that have a COLA.

Changes in Actuarial Assumptions and Methods:

Based on the Actuarial Experience Study, the following assumptions were changed. Previously, these assumptions were as follows:

Economic Assumptions

Net Investment Return:

7.50%, net of investment and administration expenses.

Member Contribution Crediting Rate:

3.00% (actual increase is based on projected long term ten-year Treasury rate).

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

Consumer Price Index:	Increase of 3.00% per year; retiree COLA increases due to CPI are subject to a 3.00% maximum change per year for both PEPRA and Non-PEPRA General Tier 1 and both PEPRA and Non-PEPRA Safety. For both PEPRA and non-PEPRA General Tier 2, SEIU members receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI, that applies to future service after March 2003.
Payroll Growth:	Inflation of 3.00% per year plus “across the board” real salary increases of 0.50% per year.
Increase in the Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 3.00% per year from the valuation date.
Increase in Section 7522.10 Compensation Limit:	Increase of 3.00% per year from the valuation date.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

Individual Salary Increases:

Annual Rate of Compensation Increase (%)		
Inflation: 3.00% per year; plus “across the board” real salary increases of 0.50% per year; plus the following promotional and merit increases:		
Years of Service	General	Safety
Less than 1	6.00	8.00
1	4.25	6.25
2	3.25	4.75
3	2.75	4.00
4	2.25	3.25
5	1.75	3.00
6	1.25	2.25
7	1.00	1.50
8	0.75	1.25
9	0.50	1.00
10	0.50	0.75
11	0.50	0.75
12	0.50	0.75
13	0.50	0.75
14	0.50	0.75
15	0.50	0.75
16	0.50	0.50
17	0.50	0.50
18	0.50	0.50
19	0.50	0.50
20 and Over	0.50	0.50

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

Demographic Assumptions

Mortality Rates:

Healthy: For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2035 set back one year for males and set forward one year for females.

For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2035 set back three years.

Disabled: For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2035 set forward six years for males and eight years for females.

For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2035 set forward two years.

Beneficiaries: Beneficiaries are assumed to have the same mortality as a General Member of the opposite sex who has taken a service (non-disability) retirement.

The above mortality tables contain about a 10% margin, based on actual to expected deaths, as a provision appropriate to reasonably anticipate future mortality improvement, based on a review of mortality experience as of the measurement date.

Member Contribution Rates: For General Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2035 set back one year for males and set forward one year for females weighted one-third male and two-thirds female.

For Safety Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2035 set back three years weighted 80% male and 20% female.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

Termination Rates Before Retirement:

Rate (%)				
Mortality				
Age	General		Safety	
	Male	Female	Male	Female
25	0.03	0.02	0.03	0.02
30	0.04	0.03	0.03	0.02
35	0.06	0.05	0.05	0.03
40	0.09	0.07	0.08	0.05
45	0.13	0.11	0.11	0.08
50	0.18	0.17	0.16	0.12
55	0.29	0.25	0.24	0.18
60	0.48	0.39	0.41	0.27
65	0.77	0.72	0.64	0.44

All pre-retirement deaths are assumed to be non-duty related.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

Termination Rates Before Retirement (continued):

<u>Age</u>	<u>Rate (%)</u>	
	<u>Disability</u>	
	<u>General⁽¹⁾</u>	<u>Safety⁽²⁾</u>
25	0.02	0.11
30	0.04	0.24
35	0.08	0.36
40	0.13	0.58
45	0.21	0.88
50	0.31	1.48
55	0.41	2.88
60	0.54	5.04
65	0.69	0.00
70	0.90	0.00

⁽¹⁾ 35% of General disabilities are assumed to be duty disabilities and the other 65% are assumed to be ordinary disabilities.

⁽²⁾ 90% of Safety disabilities are assumed to be duty disabilities and the other 10% are assumed to be ordinary disabilities.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

Termination Rates Before Retirement (continued):

Years of Service	Rate (%)	
	Withdrawal ⁽¹⁾	
	General	Safety
Less than 1	14.00	10.00
1	10.00	6.00
2	8.00	5.50
3	7.00	5.00
4	6.00	4.00
5	4.00	2.75
6	3.75	2.50
7	3.50	2.00
8	3.50	1.80
9	3.25	1.60
10	3.25	1.40
11	3.00	1.20
12	3.00	1.00
13	2.75	0.95
14	2.75	0.90
15	2.50	0.85
16	2.50	0.80
17	2.25	0.75
18	2.00	0.70
19	2.00	0.65
20 or more	2.00	0.60

⁽¹⁾ The greater of a refund of member contributions and a deferred annuity is valued when a member withdraws.
No withdrawal is assumed after a member is first assumed to retire.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

Retirement Rates (%):

Age	PEPRA			
	General Tier 1 and 2	General Tier 1 and 2	Safety	Safety PEPRA
40	0.00	0.00	1.00	0.00
41	0.00	0.00	1.00	0.00
42	0.00	0.00	1.00	0.00
43	0.00	0.00	1.00	0.00
44	0.00	0.00	1.00	0.00
45	0.00	0.00	1.00	0.00
46	0.00	0.00	1.00	0.00
47	0.00	0.00	1.00	0.00
48	0.00	0.00	1.00	0.00
49	0.00	0.00	1.50	0.00
50	2.50	0.00	2.50	5.00
51	2.50	0.00	2.00	2.00
52	3.00	2.00	3.00	4.00
53	3.50	2.00	4.00	6.00
54	4.00	2.50	17.00	16.00
55	4.50	4.00	22.00	20.00
56	5.00	4.50	22.00	20.00
57	6.00	5.00	20.00	18.00
58	8.00	6.00	19.00	18.00
59	8.00	7.00	22.00	25.00
60	12.00	9.00	22.00	25.00
61	15.00	11.00	25.00	25.00
62	22.00	20.00	35.00	40.00
63	20.00	20.00	40.00	40.00
64	22.00	18.00	40.00	40.00
65	30.00	20.00	100.00	100.00
66	35.00	30.00	100.00	100.00
67	35.00	30.00	100.00	100.00
68	35.00	30.00	100.00	100.00
69	20.00	30.00	100.00	100.00
70	20.00	50.00	100.00	100.00
71	20.00	50.00	100.00	100.00
72	20.00	50.00	100.00	100.00
73	20.00	50.00	100.00	100.00
74	30.00	50.00	100.00	100.00
75	100.00	100.00	100.00	100.00

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Changes in Actuarial Assumptions and Methods (previous assumptions continued):

**Retirement Age and Benefit for
Deferred Vested Members:**

For current and future deferred vested members, retirement age assumptions are as follows:

General Age: 59
Safety Age: 54

We assume that 50% and 60% of future General and Safety deferred vested members, respectively, will continue to work for a reciprocal employer. For reciprocals, we assume 4.00% compensation increases per annum.

Age of Spouse:

Female (or male) spouses are 3 years younger (or older) than their spouses.

In-Service Redemptions:

Non-PEPRA Formulas

The following assumptions for in-service redemptions pay as a percentage of final average compensation are used:

General Tier 1 7.50%
General Tier 2 3.50%
Safety 7.25%

For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect member contribution rates.

PEPRA Formulas

None

Actuarial Methods

Actuarial Cost Method:

Entry Age Actuarial Cost Method. Entry Age is the age at the member's hire date. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formulas for each individual have always been in effect (i.e., "replacement life within each tier").

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

EXHIBIT III

Summary of Plan Provisions

This exhibit summarizes the major provisions of the VCERA included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Membership Eligibility:	All regular employees of the County of Ventura or contracting district, scheduled to work 64 or more hours biweekly, are eligible to become a member of the Retirement Association subject to classification below:
<i>General Tier 1</i>	All General members with membership dates before June 30, 1979, plus Deputy Sheriff trainees and certain executive management with membership dates before January 1, 2013.
<i>General Tier 2</i>	All General members with membership dates on or after June 30, 1979 and before January 1, 2013, except as noted above for General Tier 1.
<i>Safety</i>	All Safety members with membership dates before January 1, 2013.
<i>General PEPR Tier 1</i>	Deputy Sheriff trainees with membership dates on or after January 1, 2013 and before April 17, 2014.
<i>General PEPR Tier 2</i>	All General members with membership dates on or after January 1, 2013, except as noted above for General PEPR Tier 1.
<i>Safety PEPR</i>	All Safety members with membership dates on or after January 1, 2013.
<hr/>	
Final Compensation for Benefit Determination:	
<i>General Tier 1 and Safety</i>	Highest consecutive twelve months of compensation earnable (§31462.1)(FAC1).
<i>General Tier 2</i>	Highest consecutive thirty-six months of compensation earnable (§31462)(FAC3).
<i>General PEPR Tier 1, General PEPR Tier 2 and Safety PEPR</i>	Highest consecutive thirty-six months of pensionable compensation (§7522.32) (FAS3).

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Compensation Limit:

General Tier 1, General Tier 2 and Safety

For members with membership dates on or after July 1, 1996, Compensation Earnable is limited to Internal Revenue Code Section 401(a)(17). The limit as of July 1, 2018 is \$275,000. The limit is indexed for inflation on an annual basis.

General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA

Pensionable Compensation is limited to \$121,388 for 2018 (\$145,666, if not enrolled in Social Security). The limit is indexed for inflation on an annual basis.

Service:

Years of service. (Yrs)

Service Retirement Eligibility:

General

Age 50 with 10 years of service, or age 70 regardless of service, or after 30 years, regardless of age (§31672).

Safety

Age 50 with 10 years of service, or age 70 regardless of service, or after 20 years, regardless of age (§31663.25).

General PEPRA

Age 52 with 5 years of service (§7522.20(a)) or age 70 regardless of service (§31672.3).

Safety PEPRA

Age 50 with 5 years of service (§7522.25(d)) or age 70 regardless of service (§31672.3).

Benefit Formula:

	Retirement Age	Benefit Formula
<i>General Tier 1 (§31676.11)</i>	50	$(1.24\% \times \text{FAC1} - 1/3 \times 1.24\% \times \$350 \times 12) \times \text{Yrs}$
	55	$(1.67\% \times \text{FAC1} - 1/3 \times 1.67\% \times \$350 \times 12) \times \text{Yrs}$
	60	$(2.18\% \times \text{FAC1} - 1/3 \times 2.18\% \times \$350 \times 12) \times \text{Yrs}$
	62	$(2.35\% \times \text{FAC1} - 1/3 \times 2.35\% \times \$350 \times 12) \times \text{Yrs}$
	65 or later	$(2.61\% \times \text{FAC1} - 1/3 \times 2.61\% \times \$350 \times 12) \times \text{Yrs}$

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

	Retirement Age	Benefit Formula
<i>General Tier 2 (§31676.1)</i>	50	$(1.18\% \times \text{FAC3} - 1/3 \times 1.18\% \times \$350 \times 12) \times \text{Yrs}$
	55	$(1.49\% \times \text{FAC3} - 1/3 \times 1.49\% \times \$350 \times 12) \times \text{Yrs}$
	60	$(1.92\% \times \text{FAC3} - 1/3 \times 1.92\% \times \$350 \times 12) \times \text{Yrs}$
	62	$(2.09\% \times \text{FAC3} - 1/3 \times 2.09\% \times \$350 \times 12) \times \text{Yrs}$
	65 or later	$(2.43\% \times \text{FAC3} - 1/3 \times 2.43\% \times \$350 \times 12) \times \text{Yrs}$

	Retirement Age	Benefit Formula
<i>General PEPPRA Tier 1 and General PEPPRA Tier 2 (§7522.20(a))</i>	52	$(1.00\% \times \text{FAS3} \times \text{Yrs})$
	55	$(1.30\% \times \text{FAS3} \times \text{Yrs})$
	60	$(1.80\% \times \text{FAS3} \times \text{Yrs})$
	62	$(2.00\% \times \text{FAS3} \times \text{Yrs})$
	65	$(2.30\% \times \text{FAS3} \times \text{Yrs})$
	67 or later	$(2.50\% \times \text{FAS3} \times \text{Yrs})$

	Retirement Age	Benefit Formula
<i>Safety (Non-Integrated) (§31664)</i>	50	$(2.00\% \times \text{FAC1} \times \text{Yrs})$
	55	$(2.62\% \times \text{FAC1} \times \text{Yrs})$
	60 or later	$(2.62\% \times \text{FAC1} \times \text{Yrs})$

	Retirement Age	Benefit Formula
<i>Safety PEPPRA (§7522.25(d))</i>	50	$(2.00\% \times \text{FAS3} \times \text{Yrs})$
	55	$(2.50\% \times \text{FAS3} \times \text{Yrs})$
	57 or later	$(2.70\% \times \text{FAS3} \times \text{Yrs})$

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Maximum Benefit:

<i>General Tier 1, General Tier 2 and Safety</i>	100% of Highest Average Compensation (§31676.1, §31676.11, §31664)
<i>General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA</i>	None

Ordinary Disability:

<i>General Tier 1, General Tier 2, General PEPRA Tier 1 and General PEPRA Tier 2 Eligibility</i>	Five years of service (§31720).
<i>Benefit Formula</i>	1.5% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 65, but total benefit cannot be more than one-third of Final Compensation (§31727).
<i>Safety and Safety PEPRA Eligibility</i>	Five years of service (§31720).
<i>Benefit Formula</i>	1.8% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 55, but total benefit cannot be more than one-third of Final Compensation (§31727.2).

Line-of-Duty Disability:

<i>All Members Eligibility</i>	No age or service requirements (§31720).
<i>Benefit Formula</i>	50% of the Final Compensation or 100% of Service Retirement benefit, if larger (§31727.4).

Pre-Retirement Death:

<i>All Members</i>	
<i>Less than Five Years of Service</i>	Refund of employee contributions with interest, plus one month's compensation for each year of service to a maximum of six month's compensation (§31781). 50% of Final Compensation or 100% of Service Retirement benefit, if larger, payable to spouse if Line-of-Duty death (§31787).

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Five or More Years of Service An additional lump sum benefit of one-year of compensation is paid if Line-of-Duty death for Safety member (§31787.6).
OR
60% of the greater of Service Retirement or Ordinary Disability Retirement benefit payable to surviving eligible spouse (§31765.1, §31781.1), in lieu of above.
An additional lump sum benefit of one-year of compensation is paid if Line-of-Duty death for Safety member (§31787.6).

Death After Retirement:

All Members
Service Retirement or Ordinary Disability Retirement 60% of member's unmodified allowance continued to eligible spouse (§31760.1). In addition, there is a \$5,000 lump sum benefit payable to member's beneficiary (§31789.3). An eligible spouse is a surviving spouse who was married to the member one year prior to the effective retirement date or at least two years prior to the date of death and has attained age 55 on or prior to the date of death (§31760.2, §31785.1).
Line-of-Duty Disability 100% of member's allowance continued to eligible spouse (§31786). In addition, there is a \$5,000 lump sum benefit payable to member's beneficiary (§31789.3). An eligible spouse is a surviving spouse who was married to the member one year prior to the effective retirement date or at least two years prior to the date of death and has attained age 55 on or prior to the date of death (§31786.1).

Withdrawal Benefits:

Less than Five Years of Service Refund of accumulated employee contributions with interest (§31628) or entitled to earned benefits commencing at anytime after eligible to retire (§31629.5).
Five or More Years of Service If contributions left on deposit, entitled to earned benefits commencing at any time after eligible to retire (§31700).

Post-retirement

Cost-of-Living Benefits:

General Tier 1, Safety, General PEPRA Tier 1 and Safety PEPRA Future changes based on Consumer Price Index to a maximum of 3% per year, excess "banked" (§31870.1).

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

<i>General Tier 2 and General PEPRA Tier 2</i>	SEIU members receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI, that applies to future service after March, 2003. This benefit has been valued consistent with the methodologies described in our October 9, 2006 report entitled “Funding Policies and Procedures for General Tier II COLA Benefit”.
Supplemental Benefit:	A supplemental benefit in the amount of \$108.44 per month is paid to retirees and their survivors.
Member Contributions:	Please refer to Appendix A for the specific rates.
<i>General Tier 1 and Safety</i>	Provide for 50% of total Normal Cost.
<i>General Tier 2</i>	Provide for 50% of total basic Normal Cost. In addition, for General Tier 2 with COLA members, the current member COLA contribution rate of 2.63% of compensation has been reflected.
<i>General PEPRA Tier 2</i>	Provide for 50% of total basic Normal Cost. In addition, for General Tier 2 with COLA members, the current member COLA contribution rate of 2.63% of compensation has been reflected.
<i>Safety PEPRA</i>	Provide for 50% of total Normal Cost.
Other Information:	For Non-PEPRA members hired after November 1974, they will pay a contribution corresponding to a General and Safety member hired at entry age 35 and 27, respectively. Safety Non-PEPRA members with 30 or more years of service are exempt from paying member contributions. The same applies for Non-General PEPRA members hired on or before March 7, 1973.
Plan Provisions Not Valued:	The Board of Retirement has approved a Supplemental Medical Benefit. This benefit is funded from Undistributed Excess Earnings, paid from a reserve that is not included in the Valuation Value of Assets and is subject at all times to the availability of funds. The Supplemental Medical Benefit is \$27.50 per month and is payable to virtually all retirees and beneficiaries.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Plan Changes: There have been no changes in plan provisions since the previous actuarial valuation.

NOTE: *The summary of major plan provisions is designed to outline principle plan benefits as interpreted for purposes of the actuarial valuation. If the Association should find the plan summary not in accordance with the actual provisions, the Association should alert Segal, to ensure the proper provisions are valued.*

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix A

Member Contribution Rates Based on 50/50 Sharing of Normal Cost for Non-PEPRA Tiers

	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
General Tier 1	5.22%	7.83%	1.67%	2.50%	6.89%	10.33%
General Tier 2 without COLA	5.05%	7.57%	0.00%	0.00%	5.05%	7.57%
General Tier 2 COLA	5.05%	7.57%	2.63% ⁽¹⁾	2.63% ⁽¹⁾	7.68%	10.20%
Safety	10.96%	10.96%	4.29%	4.29%	15.25%	15.25%

⁽¹⁾ General Tier 2 members with COLA are required to pay COLA contributions of 2.63% of compensation based on current bargaining agreements.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix B

Member Contribution Rates for PEPRA Members

	<u>Basic</u>	<u>COLA</u>	<u>Total</u>
General Tier 2 without COLA	7.50%	0.00%	7.50%
General Tier 2 with COLA	7.50%	2.63% ⁽¹⁾	10.13%
Safety	10.34%	4.08%	14.42%

The PEPRA member contribution rate is 50% of the Normal Cost.

⁽¹⁾ *General Tier 2 members with COLA are required to pay COLA contributions of 2.63% of compensation based on current bargaining agreements.*

Note: It is our understanding that in the determination of pension benefits under the PEPRA tier formulas, the compensation that can be taken into account for 2018 is \$121,388. (For an employer that is not enrolled in Social Security, the maximum amount is \$145,666) (reference Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2018 (reference Section 7522.10(d)).

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix C

Employer Contribution Rates (Dollar Amounts in Thousands) Without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers – Current Valuation with Combined General UAAL Rates

	June 30, 2018 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
General Tier 1 Members						
Normal Cost	8.31%	\$482	2.49%	\$145	10.80%	\$627
UAAL ⁽²⁾	<u>9.59%</u>	<u>557</u>	<u>5.66%</u>	<u>328</u>	<u>15.25%</u>	<u>885</u>
Total Contribution	17.90%	\$1,039	8.15%	\$473	26.05%	\$1,512
General Tier 2 Members w/o COLA						
Normal Cost	8.81%	\$18,635	0.00%	\$0	8.81%	\$18,635
UAAL ⁽²⁾	<u>9.59%</u>	<u>20,296</u>	<u>0.00%</u>	<u>0</u>	<u>9.59%</u>	<u>20,296</u>
Total Contribution	18.40%	\$38,931	0.00%	\$0	18.40%	\$38,931
General PEPRA Tier 2 Members w/o COLA						
Normal Cost	7.50%	\$4,501	0.00%	\$0	7.50%	\$4,501
UAAL ⁽²⁾	<u>9.59%</u>	<u>5,755</u>	<u>0.00%</u>	<u>0</u>	<u>9.59%</u>	<u>5,755</u>
Total Contribution	17.09%	\$10,256	0.00%	\$0	17.09%	\$10,256
General Tier 2 Members w/COLA						
Normal Cost ⁽³⁾	8.81%	\$18,516	0.43%	\$903	9.24%	\$19,419
UAAL ⁽²⁾⁽⁴⁾	<u>9.59%</u>	<u>20,165</u>	<u>5.66%</u>	<u>11,894</u>	<u>15.25%</u>	<u>32,059</u>
Total Contribution	18.40%	\$38,681	6.09%	\$12,797	24.49%	\$51,478
General PEPRA Tier 2 Members w/COLA						
Normal Cost ⁽³⁾	7.50%	\$7,019	0.48%	\$449	7.98%	\$7,468
UAAL ⁽²⁾⁽⁴⁾	<u>9.59%</u>	<u>8,973</u>	<u>5.66%</u>	<u>5,299</u>	<u>15.25%</u>	<u>14,272</u>
Total Contribution	17.09%	\$15,992	6.14%	\$5,748	23.23%	\$21,740
All General Members⁽⁵⁾						
Normal Cost	8.46%	\$49,153	0.26%	\$1,497	8.72%	\$50,650
UAAL	<u>9.59%</u>	<u>55,746</u>	<u>3.02%</u>	<u>17,521</u>	<u>12.61%</u>	<u>73,267</u>
Total Contribution	18.05%	\$104,899	3.28%	\$19,018	21.33%	\$123,917

Applicable footnotes are shown on next page.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix C (continued)

Employer Contribution Rates (Dollar Amounts in Thousands) Without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers – Current Valuation with Combined General UAAL Rates

	June 30, 2018 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
Safety Members						
Normal Cost	13.87%	\$21,167	4.16%	\$6,349	18.03%	\$27,516
UAAL	<u>55.68%</u>	<u>84,974</u>	<u>(17.21%)</u>	<u>(26,265)</u>	<u>38.47%</u>	<u>58,709</u>
Total Contribution	69.55%	\$106,141	(13.05%)	\$(19,916)	56.50%	\$86,225
Safety PEPRA Members						
Normal Cost	10.34%	\$2,805	4.08%	\$1,106	14.42%	\$3,911
UAAL	<u>55.68%</u>	<u>15,102</u>	<u>(17.21%)</u>	<u>(4,668)</u>	<u>38.47%</u>	<u>10,434</u>
Total Contribution	66.02%	\$17,907	(13.13%)	\$(3,562)	52.89%	\$14,345
All Safety Members⁽⁵⁾						
Normal Cost	13.34%	\$23,972	4.15%	\$7,455	17.49%	\$31,427
UAAL	<u>55.68%</u>	<u>100,076</u>	<u>(17.21%)</u>	<u>(30,933)</u>	<u>38.47%</u>	<u>69,143</u>
Total Contribution	69.02%	\$124,048	(13.06%)	\$(23,478)	55.96%	\$100,570
All Categories Combined⁽⁵⁾						
Normal Cost	9.61%	\$73,125	1.18%	\$8,952	10.79%	\$82,077
UAAL	<u>20.48%</u>	<u>155,822</u>	<u>(1.76%)</u>	<u>(13,412)</u>	<u>18.72%</u>	<u>142,410</u>
Total Contribution	30.09%	\$228,947	(0.58%)	\$(4,460)	29.51%	\$224,487

⁽¹⁾ Amounts are in thousands, assumed to be paid throughout the year, and are based on June 30, 2018 annual payroll (also in thousands) shown below:

General Tier 1	\$5,803
General Tier 2	211,518
General PEPRA Tier 2	60,012
General Tier 2C	210,167
General PEPRA Tier 2C	93,581
Safety	152,611
Safety PEPRA	<u>27,123</u>
Total	\$760,815

⁽²⁾ Basic UAAL rates have been calculated on a combined basis for all General Tiers. COLA UAAL rates have been calculated on a combined basis for all General Tiers that have a COLA (excludes General Tier 2 without COLA and General PEPRA Tier 2 without COLA).

⁽³⁾ Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.

⁽⁴⁾ Includes 0.66% in COLA UAAL costs attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627.

⁽⁵⁾ These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix D

Member Contribution Rates Without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers

**General Tier 1 Members' Contribution Rates from the June 30, 2018 Actuarial Valuation
(Expressed as a Percentage of Monthly Payroll)**

Calculated Under Recommended Assumptions

Entry Age	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
15	3.37%	5.06%	1.15%	1.73%	4.52%	6.79%
16	3.37%	5.06%	1.15%	1.73%	4.52%	6.79%
17	3.44%	5.16%	1.17%	1.76%	4.61%	6.92%
18	3.51%	5.27%	1.20%	1.80%	4.71%	7.07%
19	3.59%	5.38%	1.22%	1.84%	4.81%	7.22%
20	3.66%	5.49%	1.25%	1.88%	4.91%	7.37%
21	3.74%	5.61%	1.28%	1.92%	5.02%	7.53%
22	3.81%	5.72%	1.31%	1.96%	5.12%	7.68%
23	3.89%	5.84%	1.34%	2.00%	5.23%	7.84%
24	3.97%	5.96%	1.36%	2.04%	5.33%	8.00%
25	4.06%	6.08%	1.38%	2.08%	5.44%	8.16%
26	4.14%	6.21%	1.41%	2.12%	5.55%	8.33%
27	4.22%	6.34%	1.45%	2.17%	5.67%	8.51%
28	4.31%	6.47%	1.48%	2.21%	5.79%	8.68%
29	4.40%	6.60%	1.51%	2.26%	5.91%	8.86%
30	4.49%	6.74%	1.54%	2.30%	6.03%	9.04%
31	4.59%	6.88%	1.56%	2.35%	6.15%	9.23%
32	4.68%	7.02%	1.60%	2.40%	6.28%	9.42%
33	4.78%	7.17%	1.63%	2.45%	6.41%	9.62%
34	4.88%	7.32%	1.67%	2.50%	6.55%	9.82%
35	4.98%	7.47%	1.70%	2.55%	6.68%	10.02%
36	5.08%	7.63%	1.74%	2.61%	6.82%	10.24%
37	5.19%	7.78%	1.77%	2.66%	6.96%	10.44%
38	5.29%	7.94%	1.81%	2.71%	7.10%	10.65%

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

**General Tier 1 Members' Contribution Rates from the June 30, 2018 Actuarial Valuation
(Expressed as a Percentage of Monthly Payroll)**

Calculated Under Recommended Assumptions

Entry Age	Basic		COLA		Total	
	First \$350	Over \$350	First \$350	Over \$350	First \$350	Over \$350
39	5.40%	8.09%	1.84%	2.77%	7.24%	10.86%
40	5.50%	8.25%	1.88%	2.82%	7.38%	11.07%
41	5.61%	8.41%	1.91%	2.87%	7.52%	11.28%
42	5.72%	8.58%	1.95%	2.93%	7.67%	11.51%
43	5.83%	8.74%	1.99%	2.99%	7.82%	11.73%
44	5.94%	8.92%	2.04%	3.05%	7.98%	11.97%
45	6.05%	9.08%	2.07%	3.10%	8.12%	12.18%
46	6.16%	9.23%	2.10%	3.15%	8.26%	12.38%
47	6.25%	9.38%	2.13%	3.20%	8.38%	12.58%
48	6.34%	9.51%	2.17%	3.25%	8.51%	12.76%
49	6.43%	9.64%	2.19%	3.29%	8.62%	12.93%
50	6.50%	9.75%	2.22%	3.33%	8.72%	13.08%
51	6.54%	9.81%	2.23%	3.35%	8.77%	13.16%
52	6.57%	9.85%	2.24%	3.36%	8.81%	13.21%
53	6.54%	9.82%	2.24%	3.35%	8.78%	13.17%
54 & Over	6.46%	9.68%	2.20%	3.31%	8.66%	12.99%
Interest:	7.25%					
COLA:	2.75%					
COLA Loading:	34.17%					
Salary Increase:	See Exhibit II, page 58.					
Mortality:	See Exhibit II, page 60.					

Note: All members hired after November 1974, will pay a contribution corresponding to entry age 35. These rates are determined before any pickups by the employer.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

**General Tier 2 Members' Contribution Rates from the June 30, 2018 Actuarial Valuation
(Expressed as a Percentage of Monthly Payroll)**

Calculated Under Recommended Assumptions

Entry Age	Basic Only		Entry Age	Basic Only	
	First \$350	Over \$350		First \$350	Over \$350
16	2.78%	4.17%	38	4.37%	6.56%
17	2.84%	4.26%	39	4.46%	6.69%
18	2.90%	4.35%	40	4.55%	6.83%
19	2.96%	4.44%	41	4.64%	6.97%
20	3.02%	4.53%	42	4.74%	7.10%
21	3.08%	4.63%	43	4.83%	7.24%
22	3.15%	4.72%	44	4.92%	7.38%
23	3.21%	4.82%	45	5.02%	7.52%
24	3.28%	4.92%	46	5.11%	7.67%
25	3.35%	5.02%	47	5.21%	7.81%
26	3.42%	5.13%	48	5.30%	7.96%
27	3.49%	5.23%	49	5.40%	8.09%
28	3.56%	5.34%	50	5.48%	8.22%
29	3.64%	5.45%	51	5.56%	8.34%
30	3.71%	5.57%	52	5.64%	8.45%
31	3.79%	5.68%	53	5.70%	8.55%
32	3.87%	5.80%	54	5.75%	8.62%
33	3.95%	5.92%	55	5.77%	8.66%
34	4.03%	6.04%	56	5.77%	8.66%
35	4.11%	6.17%	57	5.73%	8.59%
36	4.20%	6.29%	58	5.92%	8.88%
37	4.28%	6.42%	59 & over	6.12%	9.19%

Interest: 7.25%

COLA: SEIU members contribute a negotiated 2.63% for a fixed 2% COLA pursuant to Government Code 31627.

Salary Increase: See Exhibit II, page 58.

Mortality: See Exhibit II, page 60.

Note: All members hired after November 1974, will pay a contribution corresponding to entry age 35. These rates are determined before any pickups by the employer.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

**Safety Members' Contribution Rates from the June 30, 2018 Actuarial Valuation
(Expressed as a Percentage of Monthly Payroll)**

Calculated Under Recommended Assumptions

Entry Age	Basic	COLA	Total
15	7.24%	3.96%	11.20%
16	7.24%	3.96%	11.20%
17	7.38%	4.04%	11.42%
18	7.53%	4.12%	11.65%
19	7.67%	4.20%	11.87%
20	7.82%	4.28%	12.10%
21	7.97%	4.36%	12.33%
22	8.12%	4.44%	12.56%
23	8.28%	4.53%	12.81%
24	8.44%	4.62%	13.06%
25	8.60%	4.70%	13.30%
26	8.76%	4.79%	13.55%
27	8.93%	4.89%	13.82%
28	9.11%	4.98%	14.09%
29	9.29%	5.08%	14.37%
30	9.47%	5.18%	14.65%
31	9.66%	5.28%	14.94%
32	9.85%	5.39%	15.24%
33	10.05%	5.50%	15.55%
34	10.26%	5.61%	15.87%
35	10.48%	5.73%	16.21%
36	10.69%	5.85%	16.54%
37	10.91%	5.97%	16.88%
38	11.14%	6.10%	17.24%
39	11.38%	6.23%	17.61%
40	11.64%	6.37%	18.01%
41	11.89%	6.50%	18.39%
42	12.14%	6.64%	18.78%

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

**Safety Members' Contribution Rates from the June 30, 2018 Actuarial Valuation
(Expressed as a Percentage of Monthly Payroll)**

Calculated Under Recommended Assumptions

Entry Age	Basic	COLA	Total
43	12.30%	6.73%	19.03%
44	12.39%	6.78%	19.17%
45	12.46%	6.82%	19.28%
46	12.51%	6.84%	19.35%
47	12.51%	6.85%	19.36%
48	12.41%	6.79%	19.20%
49 & Over	12.16%	6.65%	18.81%

Interest: 7.25%
 COLA: 2.75%
 COLA Loading: 54.71%
 Salary Increase: See Exhibit II, page 58.
 Mortality: See Exhibit II, page 60.

Note: All members hired after November 1974, will pay a contribution corresponding to entry age 27. These rates are determined before any pickups by the employers.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix E

Employer Contribution Rates (Dollar Amounts in Thousands) For Reference Purposes Only – Current Valuation Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) with Non-Combined General UAAL Rates

	June 30, 2018 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
General Tier 1 Members						
Normal Cost ⁽²⁾	7.95%	\$461	2.55%	\$148	10.50%	\$609
UAAL ⁽³⁾	<u>919.01%</u>	<u>53,330</u>	<u>228.66%</u>	<u>13,269</u>	<u>1147.67%</u>	<u>66,599</u>
Total Contribution	926.96%	\$53,791	231.21%	\$13,417	1158.17%	\$67,208
General Tier 2 Members w/o COLA						
Normal Cost	7.45%	\$15,758	0.00%	\$0	7.45%	\$15,758
UAAL ⁽³⁾	<u>0.42%</u>	<u>888</u>	<u>0.00%</u>	<u>0</u>	<u>0.42%</u>	<u>888</u>
Total Contribution	7.87%	\$16,646	0.00%	\$0	7.87%	\$16,646
General PEPRA Tier 2 Members w/o COLA						
Normal Cost	7.50%	\$4,501	0.00%	\$0	7.50%	\$4,501
UAAL ⁽³⁾	<u>0.42%</u>	<u>252</u>	<u>0.00%</u>	<u>0</u>	<u>0.42%</u>	<u>252</u>
Total Contribution	7.92%	\$4,753	0.00%	\$0	7.92%	\$4,753
General Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.45%	\$15,657	0.43%	\$904	7.88%	\$16,561
UAAL ⁽³⁾⁽⁵⁾	<u>0.42%</u>	<u>883</u>	<u>1.40%</u>	<u>2,942</u>	<u>1.82%</u>	<u>3,825</u>
Total Contribution	7.87%	\$16,540	1.83%	\$3,846	9.70%	\$20,386
General PEPRA Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.50%	\$7,019	0.48%	\$449	7.98%	\$7,468
UAAL ⁽³⁾⁽⁵⁾	<u>0.42%</u>	<u>393</u>	<u>1.40%</u>	<u>1,310</u>	<u>1.82%</u>	<u>1,703</u>
Total Contribution	7.92%	\$7,412	1.88%	\$1,759	9.80%	\$9,171
All General Members⁽⁶⁾						
Normal Cost	7.47%	\$43,396	0.26%	\$1,501	7.73%	\$44,897
UAAL	<u>9.59%</u>	<u>55,746</u>	<u>3.02%</u>	<u>17,521</u>	<u>12.61%</u>	<u>73,267</u>
Total Contribution	17.06%	\$99,142	3.28%	\$19,022	20.34%	\$118,164

Applicable footnotes are shown on next page.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix E (continued)

Employer Contribution Rates (Dollar Amounts in Thousands) For Reference Purposes Only – Current Valuation Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) with Non-Combined General UAAL Rates

	June 30, 2018 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
Safety Members						
Normal Cost ⁽⁷⁾	12.03%	\$18,359	4.70%	\$7,173	16.73%	\$25,532
UAAL	<u>55.68%</u>	<u>84,974</u>	<u>(17.21%)</u>	<u>(26,265)</u>	<u>38.47%</u>	<u>58,709</u>
Total Contribution	67.71%	\$103,333	(12.51%)	\$(19,092)	55.20%	\$84,241
Safety PEPRA Members						
Normal Cost	10.34%	\$2,805	4.08%	\$1,106	14.42%	\$3,911
UAAL	<u>55.68%</u>	<u>15,102</u>	<u>(17.21%)</u>	<u>(4,668)</u>	<u>38.47%</u>	<u>10,434</u>
Total Contribution	66.02%	\$17,907	(13.13%)	\$(3,562)	52.89%	\$14,345
All Safety Members⁽⁶⁾						
Normal Cost	11.78%	\$21,164	4.60%	\$8,279	16.38%	\$29,443
UAAL	<u>55.68%</u>	<u>100,076</u>	<u>(17.21%)</u>	<u>(30,933)</u>	<u>38.47%</u>	<u>69,143</u>
Total Contribution	67.46%	\$121,240	(12.61%)	\$(22,654)	54.85%	\$98,586
All Categories Combined⁽⁶⁾						
Normal Cost	8.49%	\$64,560	1.28%	\$9,780	9.77%	\$74,340
UAAL	<u>20.48%</u>	<u>155,822</u>	<u>(1.76%)</u>	<u>(13,412)</u>	<u>18.72%</u>	<u>142,410</u>
Total Contribution	28.97%	\$220,382	(0.48%)	\$(3,632)	28.49%	\$216,750

⁽¹⁾ Amounts are in thousands, assumed to be paid throughout the year, and are based on June 30, 2018 annual payroll (also in thousands) shown below:

General Tier 1	\$5,803
General Tier 2	211,518
General PEPRA Tier 2	60,012
General Tier 2C	210,167
General PEPRA Tier 2C	93,581
Safety	152,611
Safety PEPRA	<u>27,123</u>
Total	\$760,815

⁽²⁾ The total employer rate has been adjusted by 0.26% to account for the cost associated with the cessation of member contributions after 30 years of service.

⁽³⁾ Basic UAAL rates have not been calculated on a combined basis for all General Tiers.

⁽⁴⁾ Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.

⁽⁵⁾ Includes 0.66% in COLA UAAL costs attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627.

⁽⁶⁾ These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

⁽⁷⁾ The total employer rate has been adjusted by 1.48% to account for the cost associated with the cessation of member contributions after 30 years of service.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix E (continued)

Employer Contribution Rates (Dollar Amounts in Thousands) For Reference Purposes Only – Prior Valuation Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) with Non-Combined General UAAL Rates

	June 30, 2017 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
General Tier 1 Members						
Normal Cost ⁽²⁾	8.20%	\$580	2.75%	\$195	10.95%	\$775
UAAL ⁽³⁾	<u>692.43%</u>	<u>48,996</u>	<u>151.01%</u>	<u>10,686</u>	<u>843.44%</u>	<u>59,682</u>
Total Contribution	700.63%	\$49,576	153.76%	\$10,881	854.39%	\$60,457
General Tier 2 Members w/o COLA						
Normal Cost	7.03%	\$15,140	0.00%	\$0	7.03%	\$15,140
UAAL ⁽³⁾	<u>0.45%</u>	<u>969</u>	<u>0.00%</u>	<u>0</u>	<u>0.45%</u>	<u>969</u>
Total Contribution	7.48%	\$16,109	0.00%	\$0	7.48%	\$16,109
General PEPRA Tier 2 Members w/o COLA						
Normal Cost	7.06%	\$3,488	0.00%	\$0	7.06%	\$3,488
UAAL ⁽³⁾	<u>0.45%</u>	<u>222</u>	<u>0.00%</u>	<u>0</u>	<u>0.45%</u>	<u>222</u>
Total Contribution	7.51%	\$3,710	0.00%	\$0	7.51%	\$3,710
General Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.03%	\$15,139	0.06%	\$129	7.09%	\$15,268
UAAL ⁽³⁾⁽⁵⁾	<u>0.45%</u>	<u>969</u>	<u>1.21%</u>	<u>2,606</u>	<u>1.66%</u>	<u>3,575</u>
Total Contribution	7.48%	\$16,108	1.27%	\$2,735	8.75%	\$18,843
General PEPRA Tier 2 Members w/COLA						
Normal Cost ⁽⁴⁾	7.06%	\$5,772	0.02%	\$17	7.08%	\$5,789
UAAL ⁽³⁾⁽⁵⁾	<u>0.45%</u>	<u>368</u>	<u>1.21%</u>	<u>989</u>	<u>1.66%</u>	<u>1,357</u>
Total Contribution	7.51%	\$6,140	1.23%	\$1,006	8.74%	\$7,146
All General Members⁽⁶⁾						
Normal Cost	7.05%	\$40,119	0.06%	\$341	7.11%	\$40,460
UAAL	<u>9.06%</u>	<u>51,524</u>	<u>2.51%</u>	<u>14,281</u>	<u>11.57%</u>	<u>65,805</u>
Total Contribution	16.11%	\$91,643	2.57%	\$14,622	18.68%	\$106,265

Applicable footnotes are shown on next page.

SECTION 4: Reporting Information for the Ventura County Employees' Retirement Association

Appendix E (continued)

Employer Contribution Rates (Dollar Amounts in Thousands) For Reference Purposes Only – Prior Valuation Based on 50/50 Sharing of Normal Cost for All Tiers (PEPRA and Non-PEPRA) with Non-Combined General UAAL Rates

	June 30, 2017 Actuarial Valuation					
	BASIC		COLA		TOTAL	
	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾	Rate	Estimated Annual Amount ⁽¹⁾
Safety Members						
Normal Cost ⁽⁷⁾	11.65%	\$18,178	4.85%	\$7,568	16.50%	\$25,746
UAAL	<u>52.74%</u>	<u>82,293</u>	<u>(14.64%)</u>	<u>(22,843)</u>	<u>38.10%</u>	<u>59,450</u>
Total Contribution	64.39%	\$100,471	(9.79%)	\$(15,275)	54.60%	\$85,196
Safety PEPRA Members						
Normal Cost	9.96%	\$1,985	4.13%	\$824	14.09%	\$2,809
UAAL	<u>52.74%</u>	<u>10,513</u>	<u>(14.64%)</u>	<u>(2,918)</u>	<u>38.10%</u>	<u>7,595</u>
Total Contribution	62.70%	\$12,498	(10.51%)	\$(2,094)	52.19%	\$10,404
All Safety Members⁽⁶⁾						
Normal Cost	11.46%	\$20,163	4.77%	\$8,392	16.23%	\$28,555
UAAL	<u>52.74%</u>	<u>92,806</u>	<u>(14.64%)</u>	<u>(25,761)</u>	<u>38.10%</u>	<u>67,045</u>
Total Contribution	64.20%	\$112,969	(9.87%)	\$(17,369)	54.33%	\$95,600
All Categories Combined⁽⁶⁾						
Normal Cost	8.09%	\$60,282	1.17%	\$8,733	9.26%	\$69,015
UAAL	<u>19.38%</u>	<u>144,330</u>	<u>(1.55%)</u>	<u>(11,480)</u>	<u>17.83%</u>	<u>132,850</u>
Total Contribution	27.47%	\$204,612	(0.38%)	\$(2,747)	27.09%	\$201,865

⁽¹⁾ Amounts are in thousands, assumed to be paid throughout the year, and are based on June 30, 2017 annual payroll (also in thousands) shown below:

General Tier 1	\$7,076
General Tier 2	215,358
General PEPRA Tier 2	49,409
General Tier 2C	215,345
General PEPRA Tier 2C	81,759
Safety	156,036
Safety PEPRA	<u>19,934</u>
Total	\$744,917

⁽²⁾ The total employer rate has been adjusted by 0.31% to account for the cost associated with the cessation of member contributions after 30 years of service.

⁽³⁾ Basic UAAL rates have not been calculated on a combined basis for all General Tiers.

⁽⁴⁾ Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.

⁽⁵⁾ Includes 0.55% in COLA UAAL costs attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627.

⁽⁶⁾ These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

⁽⁷⁾ The total employer rate has been adjusted by 1.28% to account for the cost associated with the cessation of member contributions after 30 years of service.

5551518v4/05325.002