Kern County Employees' Retirement Association

Actuarial Valuation and Review as of June 30, 2019

Segal Consulting

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December 4, 2019

Board of Retirement
Kern County Employees' Retirement Association
11125 River Run Blvd.
Bakersfield, CA 93311

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2019. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for July 1, 2020 to June 30, 2021.

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

The actuarial calculations were directed under the supervision of John Monroe, ASA, MAAA and Enrolled Actuary. 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 this 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 Association.

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:

Paul Angelo, FSA, MAAA, FCA, EA	John Monroe, ASA, MAAA, EA
Senior Vice President and Actuary	Vice President and Actuary

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Kern County Employees' Retirement Association Actuarial Valuation and Review as of June 30, 2019

Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal Consulting ("Segal") to present a valuation of the Kern County Employees' Retirement Association ("KCERA" or "the Association") as of June 30, 2019. The valuation was performed to determine whether the assets and contribution rates are sufficient to provide the prescribed benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of current plan assets to cover the estimated cost of settling the plan's accrued benefit obligations.

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; and changes in plan provisions or applicable law.

The contribution requirements presented in this report are based on:

- The benefit provisions of the pension plan, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2019, provided by KCERA;
- The assets of the plan as of June 30, 2019, provided by KCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the June 30, 2019 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the June 30, 2019 valuation; and
- The funding policy adopted by the Board of Retirement.

One of the general goals of an actuarial valuation is to establish contributions which fully fund the Association'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 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 prior year's information.

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 this valuation, we have applied the funding policy last reviewed with the Board of Retirement in 2012. Details of the funding policy are provided in *Section 4, Exhibit I* on pages 106 through 108.

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit H* beginning on page 89. A graphical projection of the Unfunded Actuarial Accrued Liability (UAAL) amortization balances and payments has been included in *Section 3, Exhibit I* on pages 93 and 94.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2020 through June 30, 2021.

Effect of Gain Sharing Provisions

The 7.25% investment return assumption used in this valuation has been developed without taking into consideration any impact of the 50/50 excess earnings allocation between the retirement and Supplemental Retiree Benefits (SRBR) Reserve asset pools. This is based on our understanding that Article 5.5 of the Statute, which authorizes the allocation of 50% allocation of excess earnings to the SRBR, does not allow for the use of a different investment return for funding than is used for interest crediting. This would appear in effect to preclude the prefunding of the SRBR through the use of an assumption lower than the market earnings assumption of 7.25%.

Actuarial Standard of Practice (ASOP) No. 4 ("*Measuring Pension Obligations and Determining Pension Plan Costs or Contributions"*) was revised and adopted in December 2013. The revised ASOP states that some plan provisions, including gain sharing provisions, "may create pension obligations that are difficult to appropriately measure using traditional valuation procedures." ASOP No. 4 now mentions that "for such plan provisions, the actuary should consider using alternative valuation procedures, such as stochastic modeling….to reflect the impact of variations in experience from year to year."

Accordingly, we performed stochastic modeling to estimate the impact of the 50% allocation of future excess earnings to the SRBR. The results of our model indicated that the 50/50 allocation of future excess earnings would have about the same impact as an "outflow" (i.e., assets not available to fund the benefits included in this valuation) that would average approximately 0.3% of assets over time.

For informational purposes only, when we applied the results of our stochastic model to this valuation we have estimated that such an annual outflow would increase the actuarial accrued liability measured in this valuation using a 7.25% investment return assumption from $6.62 billion to $6.87 billion (for a difference of about $244 million) and would increase the employer's contribution rate by about 4.0% of payroll.

Significant Issues

Ref: Pgs. 27-28

1. The Market Value of Assets earned a return of 5.14% for the July 1, 2018 to June 30, 2019 plan year. The Valuation Value of Assets earned a return of 4.57% for the same period due to the deferral of most of the current year investment losses and the recognition of prior investment gains and losses. This resulted in an actuarial loss when measured against the assumed rate of return of 7.25% for the 2018-2019 year. This actuarial investment loss increased the average employer contribution rate by 1.39% of payroll.

Ref: Pg. 55
Ref: Pg. 31

2. The ratio of the Valuation Value of Assets to Actuarial Accrued Liabilities decreased slightly from 65.1% to 64.8%. The ratio of the Market Value of Assets to the Actuarial Accrued Liability increased slightly from 63.6% to 63.7%. The Association's UAAL (which is based on the Valuation Value of Assets) has increased from $2.24 billion to $2.33 billion. The increase in UAAL is primarily due to the investment return (after "smoothing") less than the 7.25% return assumption. A complete reconciliation of the Association's UAAL is provided in *Section 2, Subsection E*.

Ref: Pg. 33

3. The average recommended employer contribution rate calculated in this valuation increased from 46.72% of payroll to 47.09% of payroll. This increase is primarily due to the investment return (after "smoothing") less than the 7.25% return assumption, offset to some extent by changes in member demographics amongst tiers. A complete reconciliation of the Association's average employer rate is provided in *Section 2, Subsection F*.

   The Board of Retirement elected to phase-in the impact of new actuarial assumptions adopted for the June 30, 2017 valuation on the UAAL contribution rate over a three-year period, beginning with the 2018-2019 fiscal year for the County General, Courts, and County Safety groups. For the June 30, 2019 valuation, the phase-in has been completed, and so no adjustment is needed to the results in this report. Note that the June 30, 2018 results shown in this valuation report <u>exclude</u> the effect of the phase-in.

Ref: Pg. 34

4. The average member rate calculated in this valuation has increased from 6.58% of payroll to 6.67% of payroll. This change was due to changes in member demographics amongst the tiers. A complete reconciliation of the Association's average member rate is provided in *Section 2, Subsection F*.

Ref: Pgs. 36-37
Ref: Pg. 43

5. Consistent with recent years, this valuation reflects that members of the San Joaquin Valley Unified Air Pollution Control District (SJVAPCD) in Tier I and Tier IIA pay 50% of the total Normal Cost rate. There are different District Category III Tier I and Tier IIA employer contribution rates shown in this report for SJVAPCD and also for the Buttonwillow Recreation & Park District. Those employers should not use the combined District Category III employer contribution rate and should use their own Tier I and Tier IIA specific employer rate shown in the report along with the Tier IIB employer rate.

Ref: Pgs. 43-44

6. Based on action taken by the Board of Retirement at its August 2019 meeting, this valuation reflects the implementation of the Declining Employer Payroll Policy for Berrenda Mesa Water District and Inyokern Community Services District. Those

employers were the only employers in District Category IV. They have been included in a new "Declining Employers" category and they should contribute based on the dollar contribution amounts (not rates) shown in this report. Unless otherwise noted, all results shown in this report include these declining employers.

Ref: Pg. 21

7. The total unrecognized net investment loss as of June 30, 2019 is about $72 million as compared to an unrecognized net investment loss of $92 million in the previous valuation. This deferred investment loss of $72 million will be recognized in the determination of the Actuarial Value of Assets for funding purposes in the next few years as shown in *Section 2, Subsection B.*

   The net deferred losses of $72 million represent about 1.7% of the Market Value of Assets. Unless offset by future investment gains or other favorable experience, the recognition of the $72 million market losses is expected to have an impact on the Association's future funded ratio and contribution rate requirements. This potential impact may be illustrated as follows:

   a. If the net deferred losses in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the funded ratio would decrease from 64.8% to 63.7%.

      For comparison purposes, if all the net deferred losses in the June 30, 2018 valuation had been recognized immediately in the June 30, 2018 valuation, the funded ratio in last year's valuation would have decreased from 65.1% to 63.6%.

   b. If the net deferred losses in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the average employer contribution rate would increase from 47.09% of payroll to 48.07% of payroll.

      For comparison purposes, if all the net deferred losses in the June 30, 2018 valuation had been recognized immediately in the June 30, 2018 valuation, the average employer contribution rate in last year's valuation would have increased from 46.72% of payroll to 48.02% of payroll.

Ref: Pg. 87

8. During 2018-2019 there were no "excess earnings" credited to the valuation reserves or the SRBR. Also, at June 30, 2019, the COLA Contribution Reserve was zero and therefore not available to offset the 2% COLA contribution rate. Since the Contingency Reserve is still negative as of June 30, 2019, it is not excluded from the valuation value of assets per the Board's Interest Crediting Policy. A complete presentation of the Association's reserves is in *Section 3, Exhibit F*.

9. The actuarial valuation report as of June 30, 2019 is based on financial information as of that date. Changes in the assets subsequent to that date, to the extent that they exist, 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.

Ref: Pg. 59

10. The Actuarial Standards Board approved a new Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment. ASOP 51 is effective with KCERA's June 30, 2019 actuarial valuation. ASOP 51 requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition". Examples of key risks listed that are particularly relevant to KCERA are asset/liability mismatch risk, investment risk, and longevity risk. The standard also requires an actuary to consider if there is any ongoing contribution risk to the plan, however it does not require the actuary to

evaluate the particular ability or willingness of contributing entities to make contributions when due, nor does it require the actuary to assess the likelihood or consequences of future changes in applicable law.

The actuary's initial assessment can be strictly a qualitative discussion about potential adverse experience and the possible effect on future results, but it may also include quantitative numerical demonstrations where informative. The actuary is also encouraged to consider a recommendation as to whether a more detailed assessment or risk report would be significantly beneficial for the intended user in order to examine particular financial risks. When making that recommendation, the actuary will take into account such factors as the plan's design, risk profile, maturity, size, funded status, asset allocation, cash flow, possible insolvency and current market conditions.

Since the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan. We were engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Association's future financial condition based on the June 30, 2018 actuarial valuation. That analysis can be found in our separate risk assessment report dated September 4, 2019.

The risk assessment for the June 30, 2019 actuarial valuation, which includes a discussion of key risks that affect the Association, can be found in *Section 2, Subsection J*.

Summary of Key Valuation Results

		June 30, 2019		June 30, 2018	
		Total Rate	Estimated Annual Dollar Amount[1] ($ in '000s)	Total Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Employer Contribution Rates:[2]	• County General without Courts	38.63%	$155,050	38.87%	$146,467
	• Courts	38.35%	12,412	38.60%	11,653
	• County Safety	73.24%	103,301	70.28%	98,879
	• District Category I	51.61%	3,226	49.41%	3,208
	• District Category II	49.56%	1,173	46.86%	1,121
	• District Category III	43.95%	11,873	41.77%	10,757
	• District Category V	41.43%	520	38.87%	466
	• District Category VI	57.64%	245	55.14%	226
	• Declining Employers[3]	298.14%	480	47.96%	102
	All Categories Combined	47.09%	$288,280	46.72%	$272,879

(1) Based on projected annual compensation for each valuation date.

(2) In practice, these blended employer contribution rates for combined Tier I, Tier IIA, Tier IIB and Tier III (as applicable) are used for each category (with the exception of District Category III). See *Section 2, Subsection F* for the employer contribution rates for each tier separately for these categories. The June 30, 2018 contribution rates are before adjustments to phase-in over three years the UAAL contribution rate impact of new assumptions adopted for the June 30, 2017 valuation.

(3) The two employers that were previously in District Category IV are now declining employers. Those employers will contribute based on the dollar contribution amounts shown (not rates).

Summary of Key Valuation Results (continued)

		June 30, 2019		June 30, 2018	
		Total Rate	Estimated Annual Dollar Amount[(1)] ($ in '000s)	Total Rate	Estimated Annual Dollar Amount[(1)] ($ in '000s)
Average Member Contribution Rates:	• County General Tier I without Courts	5.13%	$8,093	5.06%	$8,586
	• County General Tier IIA without Courts	6.52%	4,544	6.54%	4,564
	• County General Tier IIB without Courts	6.25%	10,871	6.20%	8,516
	• Courts Tier I	8.15%	1,280	8.16%	1,395
	• Courts Tier IIA	6.26%	203	6.33%	178
	• Courts Tier IIB	6.25%	839	6.20%	637
	• County Safety Tier I	6.76%	7,177	6.68%	7,377
	• County Safety Tier IIA	9.27%	688	9.26%	709
	• County Safety Tier IIB	14.00%	3,845	14.15%	3,199
	• District Category I Tier I	3.12%	154	3.14%	166
	• District Category I Tier IIA	6.08%	47	6.02%	44
	• District Category I Tier IIB	6.25%	33	6.20%	30
	• District Category II Tier I	4.94%	88	4.99%	89
	• District Category II Tier IIB	6.25%	37	6.20%	38
	• District Category II Tier III	7.30%	0	7.85%	0
	• District Category III Tier I (Buttonwillow)	8.40%	3	8.40%	7
	• District Category III Tier I (SJVAPCD)	12.21%	2,382	12.24%	2,463
	• District Category III Tier IIA (Buttonwillow)	6.25%	0	6.20%	0
	• District Category III Tier IIA (SJVAPCD)	6.69%	79	6.72%	70
	• District Category III Tier IIB	6.25%	393	6.20%	279
	• District Category V Tier I	5.70%	8	5.87%	8
	• District Category V Tier IIA	5.95%	23	5.88%	22
	• District Category V Tier IIB	6.25%	45	6.20%	42
	• District Category VI Tier I	0.00%	0	0.00%	0
	• District Category VI Tier IIB	6.25%	0	6.20%	0
	• Declining Employers Tier I	5.70%	9	4.36%	9
	• Declining Employers Tier IIB	6.25%	0	6.20%	0
	All Categories Combined	6.67%	$40,841	6.58%	$38,428

(1) Based on projected annual compensation for each valuation date.

Summary of Key Valuation Results (continued)

		June 30, 2019 ($ in '000s)	June 30, 2018 ($ in '000s)
Actuarial Accrued Liability as of June 30:[1]	• Retired members and beneficiaries	$4,307,189	$4,093,801
	• Inactive vested members[2]	206,769	194,674
	• Active members	2,108,537	2,110,339
	• Total Actuarial Accrued Liability	$6,622,495	$6,398,814
	• Normal Cost for plan year beginning June 30	129,299	127,841
Assets as of June 30:	• Market Value of Assets (MVA)[3]	$4,219,235	$4,071,143
	• Valuation Value of Assets (VVA)	4,291,573	4,163,476
Funded status as of June 30:	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	$2,403,260	$2,327,671
	• Funded percentage on MVA basis	63.71%	63.62%
	• Unfunded Actuarial Accrued Liability on Valuation Value of Assets basis	$2,330,922	$2,235,338
	• Funded percentage on VVA basis	64.80%	65.07%
Key assumptions:	• Net investment return	7.25%	7.25%
	• Price inflation	3.00%	3.00%
	• Payroll growth	3.50%	3.50%

(1) Excludes liabilities associated with benefits paid by the Supplemental Retiree Benefits Reserve. These liabilities are included in a separate valuation report.

(2) Includes inactive members due a refund of member contributions.

(3) Excludes non-valuation reserves.

Summary of Key Valuation Results (continued)

		June 30, 2019	June 30, 2018	Change From Prior Year
Demographic data as of June 30:	**Active Members:**			
	• Number of members	9,197	8,867	3.7%
	• Average age	41.9	42.2	-0.3
	• Average service	9.5	9.9	-0.4
	• Total projected compensation	$612,277,277	$584,180,959	4.8%
	• Average projected compensation	$66,574	$65,883	1.0%
	Retired Members and Beneficiaries:			
	• Number of members:			
	– Service retired	6,382	6,172	3.4%
	– Disability retired	893	920	-2.9%
	– Beneficiaries	1,220	1,209	0.9%
	– Total	8,495	8,301	2.3%
	• Average age	69.2	68.9	0.3
	• Average monthly benefit(1)	$3,363	$3,246	3.6%
	Inactive Vested Members:			
	• Number of members(2)	2,877	2,604	10.5%
	• Average Age	42.4	42.5	-0.1
	Total Members:	20,569	19,772	4.0%

(1) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

(2) Includes inactive members due a refund of member contributions.

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 a 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. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our 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 the Association. 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	The valuation is based on the Market Value of Assets as of the valuation date, as provided by the Association. The Association uses a "Valuation Value of Assets" that differs from market value to gradually reflect six-month changes in the Market Value of Assets in determining the contribution requirements.
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, termination, 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 actuarial valuation is prepared at the request of the Association. 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 cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan. 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; and
  - Changes in statutory provisions.
- If the Association 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 Association 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 the plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the plan.

A. Member Data

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive vested 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*.

MEMBER POPULATION: 2010 – 2019

Year Ended June 30	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2010	8,567	1,839	6,170	8,009	0.93	0.72
2011	8,187	1,700	6,570	8,270	1.01	0.80
2012	8,253	1,748	6,890	8,638	1.05	0.83
2013	8,485	1,855	7,171	9,026	1.06	0.85
2014	8,512	1,949	7,397	9,346	1.10	0.87
2015	8,481	2,053	7,599	9,652	1.14	0.90
2016	8,627	2,218	7,847	10,065	1.17	0.91
2017	8,728	2,363	8,093	10,456	1.20	0.93
2018	8,867	2,604	8,301	10,905	1.23	0.94
2019	9,197	2,877	8,495	11,372	1.24	0.92

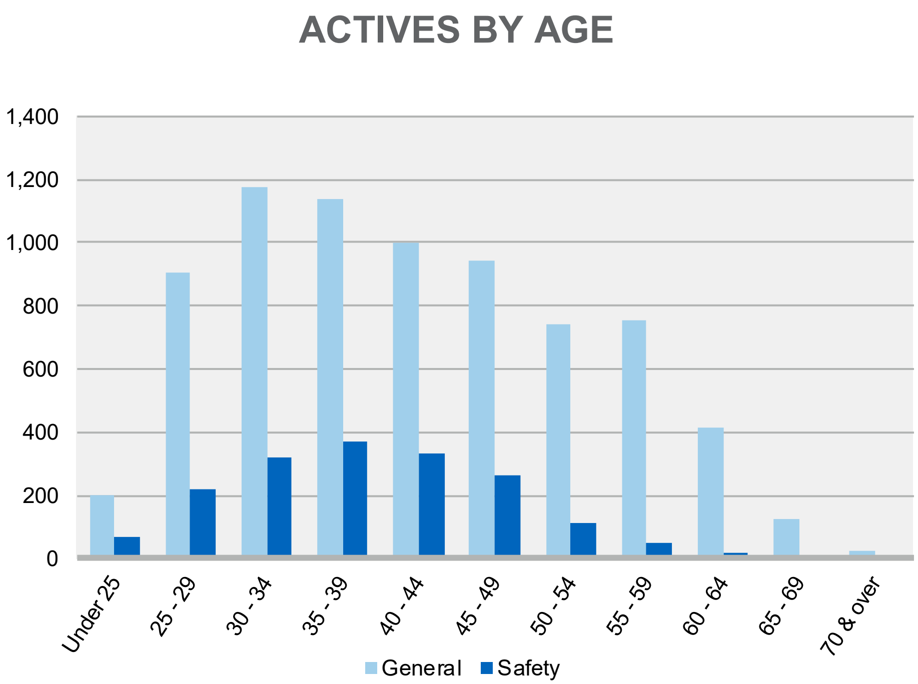
(1) Includes inactive members due a refund of member contributions.

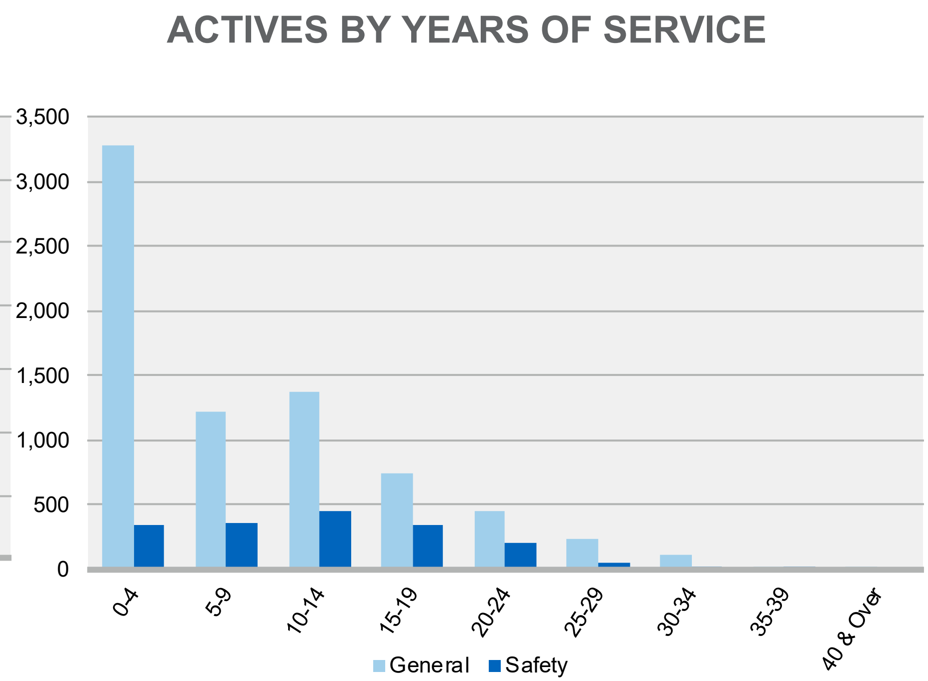
Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 9,197 active members with an average age of 41.9, average years of service of 9.5 years and average compensation of $66,574. The 8,867 active members in the prior valuation had an average age of 42.2, average service of 9.9 years and average compensation of $65,883.

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

Distribution of Active Participants as of June 30, 2019





Inactive Members

In this year's valuation, there were 2,877 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 2,604 in the prior valuation.

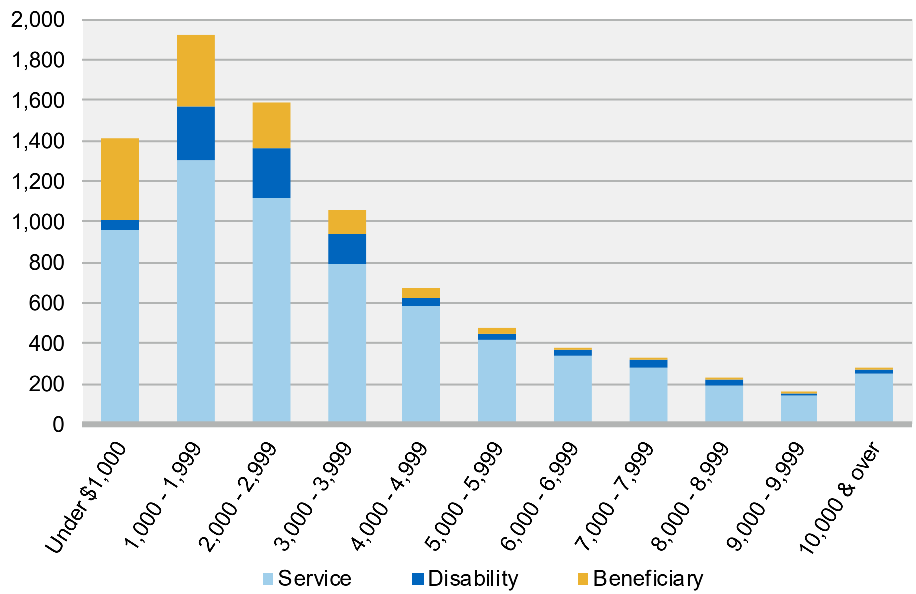
Retired Members and Beneficiaries

As of June 30, 2019, 7,275 retired members and 1,220 beneficiaries were receiving total monthly benefits of $28,572,247. For comparison, in the previous valuation, there were 7,092 retired members and 1,209 beneficiaries receiving monthly benefits of $26,942,826.

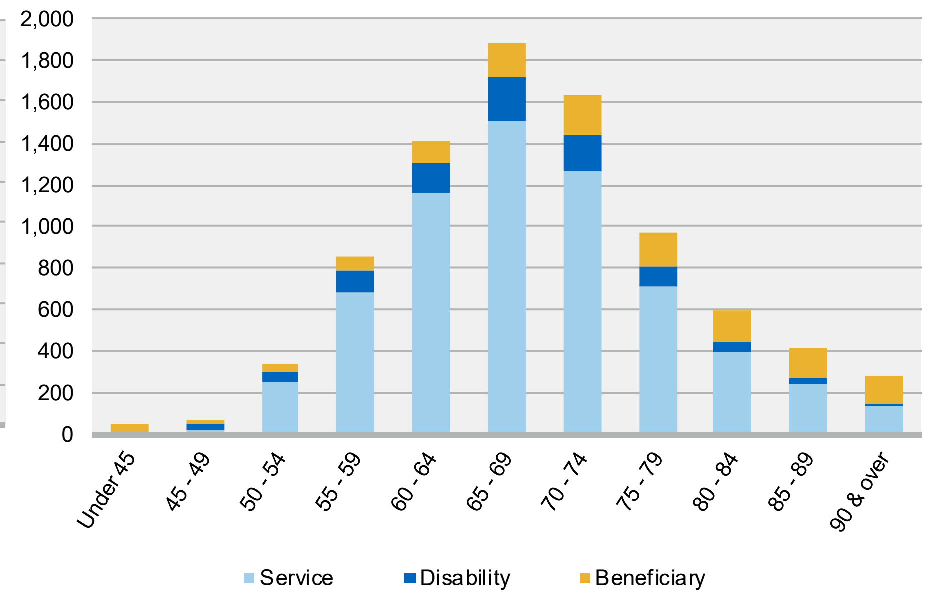
As of June 30, 2019, the average monthly benefit for retired members and beneficiaries is $3,363, compared to $3,246 in the previous valuation. The average age for retired members and beneficiaries is 69.2 in the current valuation, compared with 68.9 in the prior valuation.

Distribution of Retired Members and Beneficiaries as of June 30, 2019

RETIRED MEMBERS AND BENEFICIARIES BY TYPE AND MONTHLY AMOUNT



RETIRED MEMBERS AND BENEFICIARIES BY TYPE AND AGE



Historical Plan Population

The chart below demonstrates the progression of the active population over the last ten years. The chart also shows the growth among the retired population over the same time period.

MEMBER STATISTICS: 2010 – 2019

	Active Participants			Retired Members and Beneficiaries		
Year Ended June 30	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2010	8,567	43.6	10.6	6,170	67.7	$2,435
2011	8,187	43.7	10.8	6,570	67.5	2,584
2012	8,253	43.5	10.6	6,890	67.6	2,721
2013	8,485	42.9	10.2	7,171	67.7	2,827
2014	8,512	42.8	10.3	7,397	68.0	2,914
2015	8,481	42.8	10.4	7,599	68.2	3,000
2016	8,627	42.6	10.2	7,847	68.4	3,065
2017	8,728	42.3	10.0	8,093	68.6	3,157
2018	8,867	42.2	9.9	8,301	68.9	3,246
2019	9,197	41.9	9.5	8,495	69.2	3,363

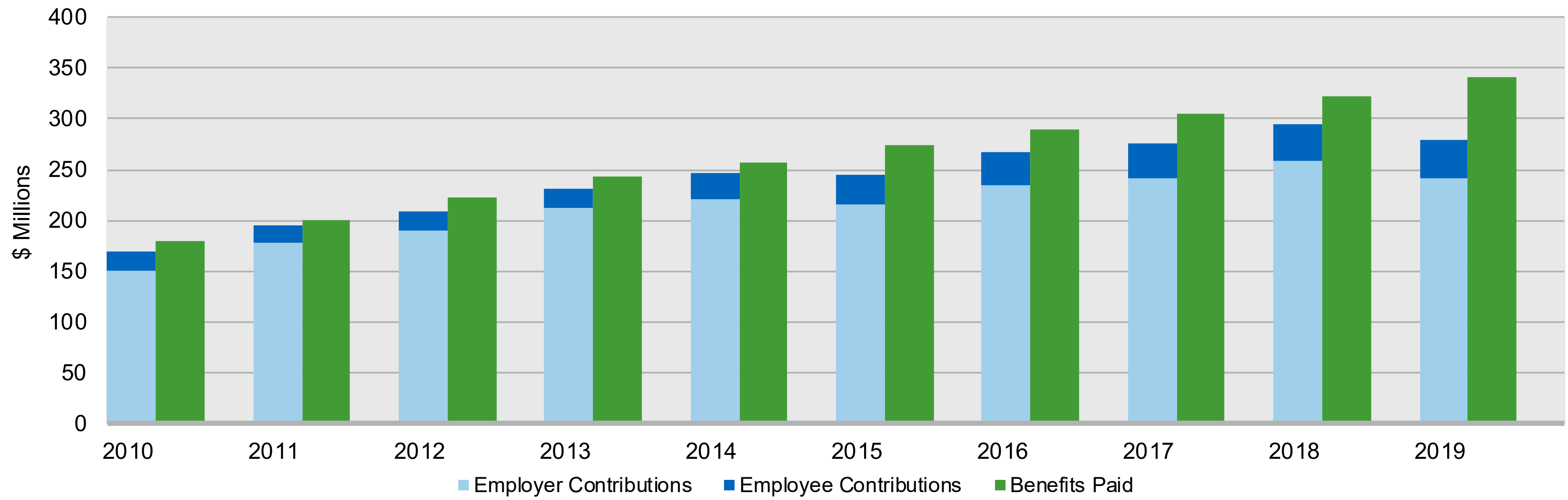
B. Financial Information

Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and investment earnings (less investment fees) 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 transactions for the valuation year, is presented in *Section 3, Exhibits D, E, F and G*.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the valuation asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

COMPARISON OF CONTRIBUTIONS WITH BENEFITS FOR YEARS ENDED JUNE 30, 2010 – 2019



DETERMINATION OF ACTUARIAL VALUE OF ASSETS

		Actual Return	Expected Return	Investment Gain / (Loss)	Percent Deferred	Unrecognized Amount
1	Market Value of Assets					$4,345,780,060
2	Calculation of unrecognized return					
a)	Six-month period ended 6/30/2014	$207,051,913	$132,732,440	$74,319,473	0%	$0
b)	Six-month period ended 12/31/2014	(31,552,640)	135,927,248	(167,479,888)	0	0
c)	Six-month period ended 6/30/2015	113,483,725	134,126,222	(20,642,498)	10	(2,064,250)
d)	Six-month period ended 12/31/2015	(130,277,891)	137,880,456	(268,158,347)	20	(53,631,669)
e)	Six-month period ended 6/30/2016	102,742,734	132,508,089	(29,765,355)	30	(8,929,606)
f)	Six-month period ended 12/31/2016	160,552,179	135,836,079	24,716,100	40	9,886,440
g)	Six-month period ended 6/30/2017	266,054,594	141,194,926	124,859,668	50	62,429,834
h)	Six-month period ended 12/31/2017	253,352,676	148,484,992	104,867,684	60	62,920,610
i)	Six-month period ended 6/30/2018	14,305,836	152,145,120	(137,839,284)	70	(96,487,499)
j)	Six-month period ended 12/31/2018	(133,735,888)	151,819,366	(285,555,254)	80	(228,444,203)
k)	Six-month period ended 6/30/2019	347,954,553	145,751,611	202,202,941	90	181,982,647
l)	Total unrecognized return(1)					$(72,337,696)
3	Preliminary Actuarial Value of Assets 1 – 2l					$4,418,117,756
4	Corridor around Market Value of Assets					
a)	Minimum – 50% of Market Value					$2,172,890,030
b)	Maximum – 150% of Market Value					6,518,670,090
5	Final Actuarial Value of Assets					$4,418,117,756
6	Actuarial Value of Assets as a percentage of Market Value of Assets 5 / 1					101.66%
7	Non-valuation reserves:(2)					
a)	Supplemental Retiree Benefit Reserve (SRBR) Unallocated to 0.5% COLA benefits					$126,544,972
b)	COLA Contribution Reserve					0
c)	Subtotal					$126,544,972
8	Valuation Value of Assets 5 – 7c					$4,291,572,784

Note: Results may not add due to rounding.

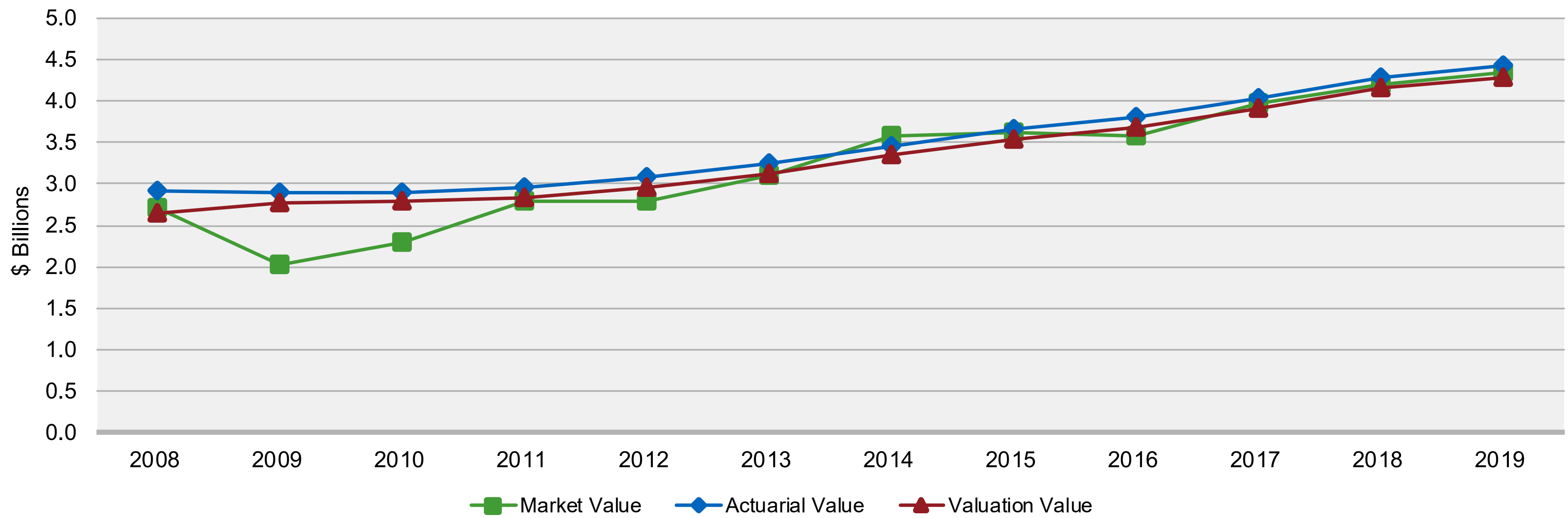
[1] Deferred return as of June 30, 2019 recognized in each of the next five years:

(a) Amount recognized on June 30, 2020	$(54,998,619)
(b) Amount recognized on June 30, 2021	3,673,836
(c) Amount recognized on June 30, 2022	(10,778,816)
(d) Amount recognized on June 30, 2023	(30,454,391)
(e) Amount recognized on June 30, 2024	20,220,294
(f) Subtotal	$(72,337,696)

[2] Because the Contingency Reserve is negative as of June 30, 2019, it is not excluded from the valuation value of assets per the Board's Interest Crediting Policy.

The Market Value, Actuarial Value and Valuation Value of Assets are representations of the plan's financial status. As investment gains and losses are gradually taken into account, the Actuarial Value of Assets tracks the Market Value of Assets. The Valuation Value of Assets is generally the Actuarial Value of Assets, excluding any non-valuation reserves. The Valuation Value of Assets is significant because the plan'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.

MARKET VALUE, ACTUARIAL VALUE, AND VALUATION VALUE OF ASSETS AS OF JUNE 30, 2008 – 2019



ALLOCATION OF VALUATION VALUE OF ASSETS AS OF JUNE 30, 2019

	County General	District[1]	County Safety	Total
Member Deposit Reserves	$258,420,864	$26,755,078	$128,906,425	$414,082,367
Employer Advance Reserves	419,411,182	40,864,461	483,849,540	944,125,182
Cost-of-Living Reserves – 2%	752,625,490	57,478,378	535,881,725	1,345,985,593
Cost-of-Living Reserves – 0.5%[2]	23,479,988	1,793,178	16,718,138	41,991,304
Retired Member Reserves	1,059,724,390[3]	78,413,700[3]	423,604,982	1,561,743,072
Contingency Reserve[4]	(9,546,852)	(780,222)	(6,027,659)	(16,354,734)
Valuation Value of Assets	$2,504,115,061	$204,524,572	$1,582,933,151	$4,291,572,784

Note: Results may not add due to rounding.

(1) Includes Valuation Value of Assets allocated to the declining employers as follows:

Berrenda Mesa	$5,687,000
Inyokern	$139,000

(2) Allocated in proportion to the Cost-of-Living Reserve – 2%.

(3) Allocated in proportion to the retired member and beneficiary Actuarial Accrued Liability for these groups.

(4) Allocated in proportion to the above valuation reserves (excluding Cost-of-Living Reserves – 0.5%).

C. Actuarial Experience

To calculate any actuarially determined 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 actuarially determined contribution will decrease from the previous year. On the other hand, the actuarially determined contribution 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. There are no assumption changes reflected in this report.

The net total loss is \$119.0 million, which includes \$111.0 million from investment losses, a loss of \$33.2 million from contribution experience and \$25.2 in gains from all other sources. The net experience variation from individual sources other than investments and contributions was 0.4% of the Actuarial Accrued Liability. A discussion of the major components of the actuarial experience is on the following pages.

ACTUARIAL EXPERIENCE FOR YEAR ENDED JUNE 30, 2019

1	Net loss from investments[1]	\$(110,973,000)
2	Net loss from contribution experience	(33,216,000)
3	Net gain from other experience[2]	25,214,000
4	Net experience loss: 1 + 2 + 3	\$(118,975,000)

(1) Details on next page.

(2) See *Subsection E* for further details. Does not include the effect of plan or assumption changes, if any.

Investment Experience

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 the plan's investment policy. The rate of return on the Market Value of Assets was 5.14% for the year ended June 30, 2019.

For valuation purposes, the assumed rate of return on the Valuation Value of Assets is 7.25%. The actual rate of return on a valuation basis for the 2018-2019 plan year was 4.57%. Since the actual return for the year was less than the assumed return, the plan experienced an actuarial loss during the year ended June 30, 2019 with regard to its investments.

INVESTMENT EXPERIENCE FOR YEAR ENDED JUNE 30, 2019

		Market Value	Actuarial Value	Valuation Value
1	Net investment income	$214,244,104	$194,249,223	$188,682,583
2	Average value of assets	4,165,199,121	4,257,531,697	4,133,183,024
3	Rate of return: 1 ÷ 2	5.14%	4.56%	4.57%
4	Assumed rate of return	7.25%	7.25%	7.25%
5	Expected investment income: 2 x 4	301,976,936	308,671,048	299,655,769
6	Actuarial gain/(loss): 1 – 5	$(87,732,832)	$(114,421,825)	$(110,973,186)

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 rate of return on an actuarial and valuation basis compared to the actual market value investment return for the last ten years, including averages over select time periods.

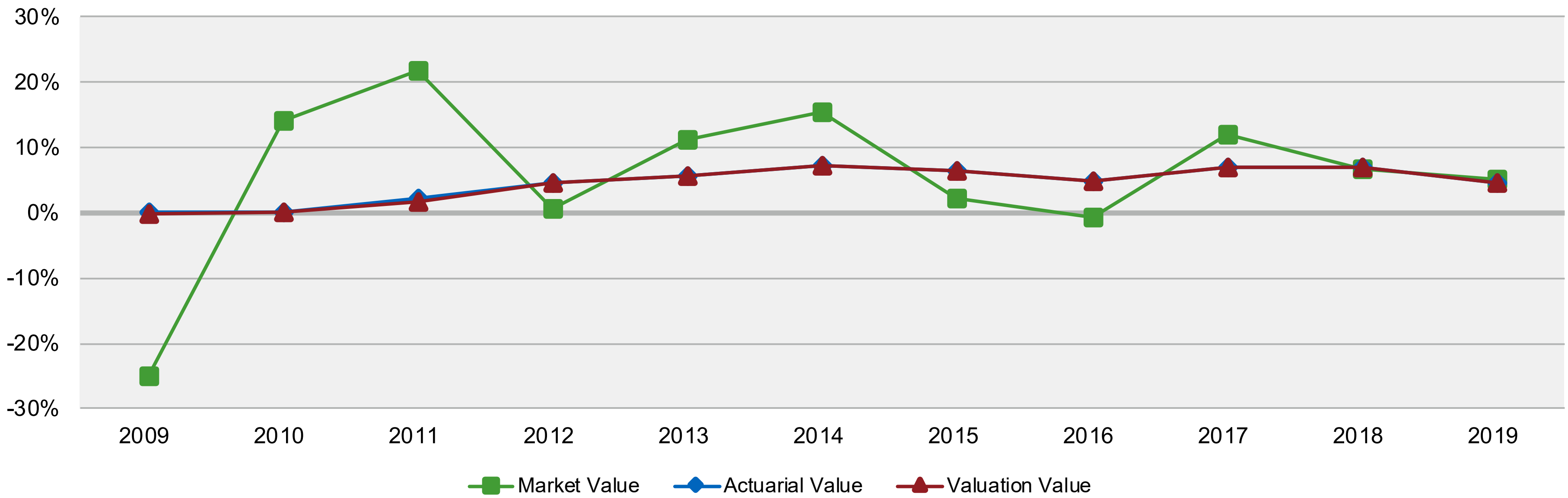
INVESTMENT RETURN – MARKET VALUE, ACTUARIAL VALUE AND VALUATION VALUE: 2010 - 2019

Year Ended June 30	Market Value Investment Return		Actuarial Value Investment Return		Valuation Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent
2010	$287,578,945	14.24%	$6,357,420	0.22%	$(27,057)	0.00%
2011	499,791,014	21.74%	62,849,280	2.17%	43,965,998	1.57%
2012	17,681,865	0.63%	133,360,035	4.52%	128,187,974	4.52%
2013	315,415,541	11.29%	171,131,798	5.57%	164,826,838	5.57%
2014	482,632,857	15.57%	235,294,994	7.28%	227,040,629	7.28%
2015	81,931,170	2.30%	222,215,376	6.45%	214,895,554	6.46%
2016	(27,535,157)	-0.76%	181,835,568	5.00%	176,132,858	5.00%
2017	426,606,857	12.00%	265,683,238	7.01%	257,592,581	7.02%
2018	267,658,596	6.78%	285,584,383	7.10%	277,046,241	7.10%
2019	214,244,104	5.14%	194,249,223	4.56%	188,682,583	4.57%
Most recent five-year geometric average return		**5.11%**		**6.00%**		**6.01%**
Most recent ten-year geometric average return		**8.05%**		**5.14%**		**5.08%**

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

Subsection B described the actuarial asset valuation method that gradually recognizes fluctuations in the market value rate of return. The goal of this is to stabilize the actuarial rate of return and to produce more level pension plan costs.

MARKET, ACTUARIAL AND VALUATION RATES OF RETURN FOR YEARS ENDING JUNE 30, 2009 – 2019



Contributions

Contributions for the year ended June 30, 2019 totaled $279.3 million, compared to the projected amount of $311.3 million. This resulted in a loss of $33.2 million from contribution experience for the year, when adjusted for timing.

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:

- the extent of turnover among participants,
- retirement experience (earlier or later than projected),
- mortality (more or fewer deaths than projected),
- the number of disability retirements (more or fewer than projected),
- salary increases (greater or smaller than projected), and
- cost-of-living adjustments (COLAs) higher or lower than anticipated.

The net gain from this other experience for the year ended June 30, 2019 amounted to $25.2 million, which is 0.4% of the Actuarial Accrued Liability. See *Subsection E* for a detailed development of the Unfunded Actuarial Accrued Liability.

D. Other Changes in the Actuarial Accrued Liability

The Actuarial Accrued Liability as of June 30, 2019 is $6.6 billion, an increase of $0.2 billion, or 3.5%, from the Actuarial Accrued Liability as of the prior valuation date. The liability is expected to grow each year with Normal Cost and interest, and to decline due to benefit payments made. Additional fluctuations can occur due to actual experience that differs from expected (as discussed in the previous subsection).

Actuarial Assumptions

- There are no assumption changes reflected in this valuation report.
- Details on actuarial assumptions and methods are in *Section 4, Exhibit I*.

Plan Provisions

- There were no changes in plan provisions since the prior valuation.
- A summary of plan provisions is in *Section 4, Exhibit II*.

E. Development of Unfunded Actuarial Accrued Liability

DEVELOPMENT FOR YEAR ENDED JUNE 30, 2019 ($ IN '000S)

1	**Unfunded Actuarial Accrued Liability at beginning of year**		**$2,235,338**
2	Total Normal Cost at middle of year[1]		126,557
3	Expected administrative expenses		5,255
4	Expected employer and member contributions[2]		(311,307)
5	Interest		156,104
6	Expected Unfunded Actuarial Accrued Liability at end of year		$2,211,947
7	Changes due to:		
	a) Investment return less than expected (after "smoothing")	$110,973	
	b) Actual contributions less than expected	33,216	
	c) Individual salary increases lower than expected	-34,965	
	d) Other experience loss	9,751	
	Total changes		$118,975
8	**Unfunded Actuarial Accrued Liability at end of year**		**$2,330,922**

Note: The sum of items 7c through 7d equals the "Net gain from other experience" shown in *Subsection C*.

(1) Excludes administrative expense load.

(2) Includes contributions towards administration expenses.

F. Recommended Contribution

The recommended contribution is equal to the employer Normal Cost payment and a payment on the Unfunded Actuarial Accrued Liability. As of June 30, 2019, the average recommended employer contribution is 47.09% of compensation.

The Board sets the funding policy used to calculate the recommended contribution based on layered amortization periods. See *Section 4, Exhibit I* for further details on the funding policy.

The contribution requirement as of June 30, 2019 is based on the data previously described, the actuarial assumptions and plan provisions described in *Section 4*, including all changes affecting future costs adopted at the time of the actuarial valuation, actuarial gains and losses, and changes in the actuarial assumptions.

AVERAGE RECOMMENDED EMPLOYER CONTRIBUTION FOR YEAR ENDING JUNE 30

All Tiers Combined		June 30, 2019		June 30, 2018	
		Amount ($ in '000s)	% of Projected Compensation[1]	Amount ($ in '000s)	% of Projected Compensation[1]
1	Total Normal Cost[2]	$129,299	21.12%	$127,841	21.89%
2	Expected member contributions	-40,841	-6.67%	-38,428	-6.58%
3	Employer Normal Cost: 1 – 2	$88,458	14.45%	$89,413	15.31%
4	Actuarial Accrued Liability	$6,622,495		$6,398,814	
5	Valuation Value of Assets	4,291,573		4,163,476	
6	Unfunded Actuarial Accrued Liability: 4 – 5	$2,330,922		$2,235,338	
7	Payment on Unfunded Actuarial Accrued Liability	$199,822	32.64%	$183,466	31.41%
8	Total average recommended employer contribution: 3 + 7	$288,280	47.09%	$272,879	46.72%
9	Projected compensation	$612,277		$584,180	

(1) Contributions are assumed to be paid at the middle of the year.

(2) Includes administrative expense load.

Reconciliation of Average Recommended Employer Contribution Rate

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

RECONCILIATION OF AVERAGE RECOMMENDED EMPLOYER CONTRIBUTION RATE FROM JUNE 30, 2018 TO JUNE 30, 2019

	Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Average Recommended Employer Contribution as of June 30, 2018	**46.72%**	**$272,879**
• Effect of investment return less than expected (after "smoothing")	1.39%	8,511
• Effect of actual contributions less than expected[2]	0.42%	2,572
• Effect of individual salary increases lower than expected	-0.44%	-2,694
• Effect of amortizing prior year's UAAL over a larger than expected projected total payroll	-0.18%	-1,102
• Effect of changes in demographics of members amongst tiers on Normal Cost	-1.01%	-6,184
• Effect of implementing Declining Employer Payroll Policy on two employers	0.03%	184
• Effect of other experience loss[3]	0.16%	14,114
Total change	0.37%	$15,401
Average Recommended Employer Contribution as of June 30, 2019	**47.09%**	**$288,280**

(1) Based on projected compensation for each valuation date shown.

(2) Includes contribution loss from one-year delay in implementing higher contribution rates recommended in June 30, 2018 valuation and the phase-in of the cost impact of the changes in actuarial assumption calculated in the June 30, 2017 valuation.

(3) Other differences in actuarial versus expected experience. Estimated annual dollar amount also reflects the change in total projected compensation from the prior valuation.

Reconciliation of Average Recommended Member Contribution Rate

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

RECONCILIATION OF AVERAGE RECOMMENDED MEMBER CONTRIBUTION RATE FROM JUNE 30, 2018 TO JUNE 30, 2019

	Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Average Recommended Member Contribution as of June 30, 2018	**6.58%**	**$38,428**
• Effect of changes in member demographics amongst tiers	0.06%	367
• Effect of net other changes[2]	0.03%	2,046
Total change	0.09%	$2,413
Average Recommended Member Contribution as of June 30, 2019	**6.67%**	**$40,841**

(1) Based on projected compensation for each valuation date shown.

(2) Other differences in actuarial versus expected experience. Estimated annual dollar amount also reflects the change in total projected compensation from the prior valuation.

Summary of KCERA Employers, Benefit Formulas and Member Contribution Rates

COUNTY AND COURTS

Plan (Tier I)	Valuation Report Label	Benefit Formula	Member Contribution Code Section	Member Contribution Provides Average Annuity of:	Adopted 1997 MOU	Soc Sec Integration	Pre-Tax	5-yr Contribution Stop
General – County Tier I	County General Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	Yes	Varies[1]
General – County – Court Employees Tier I	Courts Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55 plus supplemental 8.0%[2]	Yes	Yes	Yes	3/12/2011[3]
Safety – County Tier I	County Safety Tier I	31664.1 (3% @ 50)	31639.25	3/200 of FAS1 at age 50[4]	Yes	Yes	Yes	Varies[1]

Plan (Tier IIA)	Valuation Report Label	Benefit Formula	Member Contribution Code Section	Member Contribution Provides Average Annuity of:	Tier Adoption Date	Soc Sec Integration	Pre-Tax
General – County Tier IIA	County General Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	10/27/2007[5]	Yes	Yes
General – County – Court Employees Tier IIA	Courts Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	3/12/2011	Yes	Yes
Safety – County Tier IIA	County Safety Tier IIA	31664 (2% @ 50)	31639.25	1/100 of FAS1 at age 50[4]	3/27/2012	Yes	Yes

Plan (Tier IIB)	Valuation Report Label	Benefit Formula	Member Contribution Code Section	Member Contribution	Tier Adoption Date	Soc Sec Integration	Pre-Tax
General – County Tier IIB	County General Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes
General – County – Court Employees Tier IIB	Courts Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes
Safety – County Tier IIB	County Safety Tier IIB	31664 (2% @ 50)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes

FAS1 = 1-Year Final Average Salary

1 See next page for member contribution rates by employee association and bargaining unit.
2 Court employees in Tier I pay an additional 8% of the base salary for their entire career.
3 Court employees in Tier I hired prior to this date pay the full member contribution rates for only the first five years of service as a result of the 2010 Memorandum of Understanding (MOU).
4 Safety Tier I and Safety Tier IIA members stop paying contributions upon attaining 30 years of continuous county service.
5 KCPA (Prosecutors) employee association adopted Tier IIA effective July 5, 2008.

Summary of KCERA Employers, Benefit Formulas and Member Contribution Rates (continued)

SUMMARY OF KCERA MEMBER CONTRIBUTION RATES – COUNTY BARGAINING UNITS

Plan	Employee Association	Bargaining Unit	5-yr Contribution Stop[1]	1/6th Rate Start[1]	1/3rd Rate Start[1]	"Safety 3" Effective Date
County General	SEIU	1 – Supervisory, 2 – Professional, 3 – Technical Services, 4 – Clerical, 5 – Administrative, 6 – Trade/Crafts/Labor	8/7/2004	5/4/2013	5/3/2014	N/A
County General		D – Mid-management, M – Management, X – Confidential	9/4/2004[2]	7/13/2013	7/12/2014	N/A
County General	KCPA	P – Prosecutors	2/8/2005	8/10/2013	8/9/2014	N/A
County Safety	KCFFU	F – Firefighters, 7 – Supervisors	3/31/2007[3]	5/4/2013	5/3/2014	3/31/2007[4]
County Safety	KLEA	L – Sheriff Law Enforcement, 8 – Supervisors	11/10/2007	5/4/2013	5/3/2014	N/A
County Safety	KCSCA	N – Sheriff Lieutenants, R – Commanders	3/17/2007	5/4/2013	5/3/2014	N/A
County Safety	SEIU-CJU	J – Criminal Justice, S – Supervisors	12/8/2007	5/4/2013	5/3/2014	N/A
County Safety	KCPMA	O – Probation Management	4/7/2004	5/4/2013	5/3/2014	N/A
County Safety	KCPOA	Q – Probation Officers, Y – Supervisors	9/18/2007	8/10/2013	8/9/2014	9/18/2007[4]
County Safety	KCDOA	T – Detention Officers, V – Supervisors	6/23/2007	5/4/2013	5/3/2014	N/A
County Safety	KCSCA II	W – Detention Officers Lieutenants	9/15/2009	5/4/2013	5/3/2014	12/8/2007 to 9/14/2009[5]

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1 Tier I members hired prior to this date pay the full member contributions for only the first five years of service. These members will start paying one-sixth of their full member contributions on the "1/6th Rate Start" date, and will start paying one-third of their full member contributions on the "1/3rd Rate Start" date.

2 Elected officials hired prior to this date do not pay member contributions. These members will start paying one-third of their full member contributions on the first day of the first biweekly payroll period in January 2015.

3 Firefighters hired prior to this date pay 1% of their base salary after the first five years of service. These members will start paying one-sixth of their full member contributions (not to exceed 2% of base salary) on the "1/6th Rate Start" date, and will start paying one-third of their full member contributions (not to exceed 4% of base salary) on the "1/3rd Rate Start" date.

4 Members hired after this date pay a uniform "Safety 3" rate for all entry ages. The uniform rate continues to be integrated with Social Security.

5 Effective December 8, 2007 through September 14, 2009, this flat rate applied to KCSCA II employees.

Summary of KCERA Employers, Benefit Formulas and Member Contribution Rates (continued)

DISTRICTS

Plan (Tier I)	Valuation Report Label	Benefit Formula	Member Contribution Code Section	Member Contribution Provides Average Annuity of:	Adopted 1997 MOU	Soc Sec Integration	Pre-Tax	5-yr Contribution Stop[1]
District – Berrenda Mesa Water Tier I	Declining Employers Tier I	31676.17 (3% @ 60)[2]	31621.8	1/100 of FAS1 at age 55	Yes	No	Yes	1/1/2004
District – Buttonwillow Recreation & Park Tier I	District Category III Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55 (Member pays 50%)[3]	No	No	No	N/A
District – East Kern Cemetery Tier I	District Category II Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	Yes	1/1/2004
District – Inyokern Community Services Tier I	Declining Employers Tier I	31676.17 (3% @ 60)[2]	31621.8	1/100 of FAS1 at age 55	Yes	No	No	1/1/2004
District – Kern County Water Agency Tier I	District Category I Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55 (100% employer pickup if hired prior to 8/22/2004)[4]	Yes	Yes	Yes	N/A
District – Kern Mosquito & Vector Control Tier I	District Category II Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	Yes	1/8/2005
District – North of River Sanitation Tier I	District Category V Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	Yes	8/7/2004
District – San Joaquin Valley Unified Air Pollution Control Tier I	District Category III Tier I	31676.17 (3% @ 60)	31621.8	Member pays 50% of Normal Cost rate[5]	No	No	Yes	N/A
District – Shafter Recreation & Park Tier I	District Category II Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	Yes	1/1/2004
District – West Side Cemetery Tier I	District Category VI Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	No	N/A[6]
District – West Side Mosquito Abatement Tier I	District Category II Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	No	1/1/2004
District – West Side Recreation & Park Tier I	District Category II Tier I	31676.17 (3% @ 60)	31621.8	1/100 of FAS1 at age 55	Yes	Yes	No	8/7/2004

FAS1 = 1-Year Final Average Salary

[1] Tier I Members hired prior to this date pay the full member contribution rates for only the first five years of service as a result of the 1997 Memorandum of Understanding (MOU).
[2] District Category IV adopted the 3% @ 60 Formula on a prospective basis only. Member contribution rates are the same as General Tier I.
[3] Buttonwillow District Tier I (District Category III) did not adopt the 1997 MOU. Members in those districts pay 50% of the full rates, regardless of hire date.
[4] For Kern County Water Agency (District Category I) employees hired prior to August 22, 2004, the employer picks up 100% of all member contributions.
[5] Effective July 11, 2015, San Joaquin Valley Unified Air Pollution Control District Tier I members pay 28% of the total Normal Cost rate. That percent increases to 39% effective 2016-2017 and 50% effective 2017-2018.
[6] West Side Cemetery (District Category VI) employees pay the full member contribution rates for only the first five years of service, regardless of hire date.

Summary of KCERA Employers, Benefit Formulas and Member Contribution Rates (continued)

DISTRICTS (CONTINUED)

Plan (Tier IIA)	Valuation Report Label	Benefit Formula	Member Contribution Code Section	Member Contribution Provides Average Annuity of:	Tier Adoption Date	Soc Sec Integration	Pre-Tax
District – Berrenda Mesa Water Tier IIA[1]	Declining Employers Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	1/12/2010	No	Yes
District – Buttonwillow Recreation & Park Tier IIA[1]	District Category III Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	12/17/2012	No	No
District – East Kern Cemetery Tier IIA[1]	District Category II Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	12/17/2012	Yes	Yes
District – Inyokern Community Services Tier IIA[1]	Declining Employers Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	12/13/2012	No	No
District – Kern County Water Agency Tier IIA	District Category I Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	1/1/2010	Yes	Yes
District – Kern Mosquito & Vector Control Tier IIA[1]	District Category II Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	12/12/2012	Yes	Yes
District – North of River Sanitation Tier IIA	District Category V Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	10/29/2007	Yes	Yes
District – San Joaquin Valley Unified Air Pollution Control Tier IIA	District Category III Tier IIA	31676.01 (1.62% @ 65)	31621	Member pays 50% of Normal Cost rate[2]	7/31/2012	No	Yes
District – Shafter Recreation & Park Tier IIA[1]	District Category II Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	12/19/2012	Yes	Yes
District – West Side Cemetery Tier IIA[1]	District Category VI Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	12/18/2012	Yes	No
District – West Side Mosquito Abatement Tier IIA[1]	District Category II Tier IIA	31676.01 (1.62% @ 65)	31621	1/120 of FAS1 at age 60	11/15/2012	Yes	No

FAS1 = 1-Year Final Average Salary

[1] These districts adopted Tier IIA, but had no Tier IIA employees as of the valuation date.

[2] Effective July 8, 2017, San Joaquin Valley Unified Air Pollution Control District Tier IIA members pay 50% of the total Normal Cost rate.

Summary of KCERA Employers, Benefit Formulas and Member Contribution Rates (continued)

DISTRICTS (CONTINUED)

Plan (Tier IIB and Tier III)	Valuation Report Label	Benefit Formula	Member Contribution Code Section	Member Contribution Provides Average Annuity of:	Tier Adoption Date	Soc Sec Integration	Pre-Tax
District – Berrenda Mesa Water Tier IIB[1]	Declining Employers Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	No	Yes
District – Buttonwillow Recreation & Park Tier IIB[1]	District Category III Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	No	No
District – East Kern Cemetery Tier IIB	District Category II Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes
District – Inyokern Community Services Tier IIB[1]	Declining Employers Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	No	No
District – Kern County Water Agency Tier IIB	District Category I Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes
District – Kern Mosquito & Vector Control Tier IIB	District Category II Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes
District – North of River Sanitation Tier IIB	District Category V Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes
District – San Joaquin Valley Unified Air Pollution Control Tier IIB	District Category III Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	No	Yes
District – Shafter Recreation & Park Tier IIB	District Category II Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	Yes
District – West Side Cemetery Tier IIB[1]	District Category VI Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	No
District – West Side Mosquito Abatement Tier IIB	District Category II Tier IIB	31676.01 (1.62% @ 65)	7522.30(a)	50% of Normal Cost rate	1/1/2013	Yes	No
District – West Side Recreation & Park Tier III[1]	District Category II Tier III	7522.20(a) (2.50% @ 67)	7522.30(a)	50% of Normal Cost rate	1/1/2013	No	No

FAS1 = 1-Year Final Average Salary

[1] These districts adopted Tier IIB or Tier III, but had no employees in those tiers as of the valuation date.

Recommended Employer Contribution Rates – Current Valuation

	June 30, 2019 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)
County General Tier I without Courts								
Normal Cost	13.76%	$21,706	4.20%	$6,625	1.30%	$2,051	19.26%	$30,382
UAAL	19.98%	31,518	2.88%	4,543	4.30%	6,784	27.16%	42,845
Total Contributions	33.74%	$53,224	7.08%	$11,168	5.60%	$8,835	46.42%	$73,227
County General Tier IIA without Courts								
Normal Cost	4.08%	$2,844	2.13%	$1,485	0.65%	$452	6.86%	$4,781
UAAL	19.98%	13,926	2.88%	2,007	4.30%	2,997	27.16%	18,930
Total Contributions	24.06%	$16,770	5.01%	$3,492	4.95%	$3,449	34.02%	$23,711
County General Tier IIB without Courts								
Normal Cost	4.88%	$8,488	1.05%	$1,826	0.32%	$557	6.25%	$10,871
UAAL	19.98%	34,753	2.88%	5,009	4.30%	7,479	27.16%	47,241
Total Contributions	24.86%	$43,241	3.93%	$6,835	4.62%	$8,036	33.41%	$58,112
County General without Courts – Combined								
Normal Cost	8.23%	$33,038	2.48%	$9,936	0.76%	$3,060	11.47%	$46,034
UAAL	19.98%	80,197	2.88%	11,559	4.30%	17,260	27.16%	109,016
Total Contributions	28.21%	$113,235	5.36%	$21,495	5.06%	$20,320	38.63%	$155,050
Courts Tier I								
Normal Cost	10.74%	$1,687	4.20%	$660	1.30%	$204	16.24%	$2,551
UAAL	19.98%	3,138	2.88%	452	4.30%	676	27.16%	4,266
Total Contributions	30.72%	$4,825	7.08%	$1,112	5.60%	$880	43.40%	$6,817
Courts Tier IIA								
Normal Cost	4.34%	$140	2.13%	$69	0.65%	$21	7.12%	$230
UAAL	19.98%	646	2.88%	93	4.30%	140	27.16%	879
Total Contributions	24.32%	$786	5.01%	$162	4.95%	$161	34.28%	$1,109
Courts Tier IIB								
Normal Cost	4.88%	$655	1.05%	$141	0.32%	$43	6.25%	$839
UAAL	19.98%	2,683	2.88%	387	4.30%	577	27.16%	3,647
Total Contributions	24.86%	$3,338	3.93%	$528	4.62%	$620	33.41%	$4,486

Note: Applicable footnotes are shown on page 46.

Recommended Employer Contribution Rates – Current Valuation (continued)

	June 30, 2019 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)
Courts – Combined								
Normal Cost	7.67%	$2,482	2.69%	$870	0.83%	$268	11.19%	$3,620
UAAL	19.98%	6,467	2.88%	932	4.30%	1,393	27.16%	8,792
Total Contributions	27.65%	$8,949	5.57%	$1,802	5.13%	$1,661	38.35%	$12,412
County Safety Tier I								
Normal Cost	18.47%	$19,609	6.63%	$7,039	2.12%	$2,250	27.22%	$28,898
UAAL	32.18%	34,164	6.94%	7,368	9.88%	10,489	49.00%	52,021
Total Contributions	50.65%	$53,773	13.57%	$14,407	12.00%	$12,739	76.22%	$80,919
County Safety Tier IIA								
Normal Cost	12.27%	$911	5.44%	$404	1.74%	$129	19.45%	$1,444
UAAL	32.18%	2,388	6.94%	515	9.88%	734	49.00%	3,637
Total Contributions	44.45%	$3,299	12.38%	$919	11.62%	$863	68.45%	$5,081
County Safety Tier IIB								
Normal Cost	10.49%	$2,881	2.66%	$730	0.85%	$234	14.00%	$3,845
UAAL	32.18%	8,837	6.94%	1,906	9.88%	2,713	49.00%	13,456
Total Contributions	42.67%	$11,718	9.60%	$2,636	10.73%	$2,947	63.00%	$17,301
County Safety – Combined								
Normal Cost	16.59%	$23,401	5.79%	$8,173	1.86%	$2,613	24.24%	$34,187
UAAL	32.18%	45,389	6.94%	9,789	9.88%	13,936	49.00%	69,114
Total Contributions	48.77%	$68,790	12.73%	$17,962	11.74%	$16,549	73.24%	$103,301
All County with Courts – Combined								
Normal Cost	10.25%	$58,921	3.30%	$18,979	1.04%	$5,941	14.59%	$83,841
UAAL	22.97%	132,053	3.88%	22,280	5.67%	32,589	32.52%	186,922
Total Contributions	33.22%	$190,974	7.18%	$41,259	6.71%	$38,530	47.11%	$270,763
District Category I Tier I								
Normal Cost	15.77%	$780	4.20%	$208	1.30%	$64	21.27%	$1,052
UAAL	24.81%	1,227	4.17%	206	4.38%	217	33.36%	1,650
Total Contributions	40.58%	$2,007	8.37%	$414	5.68%	$281	54.63%	$2,702

Note: Applicable footnotes are shown on page 46.

Recommended Employer Contribution Rates – Current Valuation (continued)

	June 30, 2019 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)
District Category I Tier IIA								
Normal Cost	4.52%	$35	2.13%	$16	0.65%	$5	7.30%	$56
UAAL	24.81%	191	4.17%	32	4.38%	34	33.36%	257
Total Contributions	29.33%	$226	6.30%	$48	5.03%	$39	40.66%	$313
District Category I Tier IIB								
Normal Cost	4.88%	$26	1.05%	$6	0.32%	$1	6.25%	$33
UAAL	24.81%	132	4.17%	22	4.38%	24	33.36%	178
Total Contributions	29.69%	$158	5.22%	$28	4.70%	$25	39.61%	$211
District Category I – Combined								
Normal Cost	13.44%	$841	3.67%	$230	1.14%	$70	18.25%	$1,141
UAAL	24.81%	1,550	4.17%	260	4.38%	275	33.36%	2,085
Total Contributions	38.25%	$2,391	7.84%	$490	5.52%	$345	51.61%	$3,226
District Category II Tier I								
Normal Cost	13.95%	$249	4.20%	$75	1.30%	$23	19.45%	$347
UAAL	24.81%	442	4.17%	74	4.38%	78	33.36%	594
Total Contributions	38.76%	$691	8.37%	$149	5.68%	$101	52.81%	$941
District Category II Tier IIB								
Normal Cost	4.88%	$29	1.05%	$6	0.32%	$2	6.25%	$37
UAAL	24.81%	145	4.17%	24	4.38%	26	33.36%	195
Total Contributions	29.69%	$174	5.22%	$30	4.70%	$28	39.61%	$232
District Category II Tier III								
Normal Cost	5.75%	$0	1.18%	$0	0.37%	$0	7.30%	$0
UAAL	24.81%	0	4.17%	0	4.38%	0	33.36%	0
Total Contributions	30.56%	$0	5.35%	$0	4.75%	$0	40.66%	$0
District Category II – Combined								
Normal Cost	11.73%	$278	3.39%	$81	1.08%	$25	16.20%	$384
UAAL	24.81%	587	4.17%	98	4.38%	104	33.36%	789
Total Contributions	36.54%	$865	7.56%	$179	5.46%	$129	49.56%	$1,173

Note: Applicable footnotes are shown on page 46.

Recommended Employer Contribution Rates – Current Valuation (continued)

	June 30, 2019 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)
District Category III Tier I (Buttonwillow)								
Normal Cost	10.49%	$4	4.20%	$2	1.30%	$0	15.99%	$6
UAAL	24.81%	9	4.17%	2	4.38%	1	33.36%	12
Total Contributions	35.30%	$13	8.37%	$4	5.68%	$1	49.35%	$18
District Category III Tier I (SJVAPCD)								
Normal Cost	9.45%	$1,844	2.10%	$410	0.66%	$128	12.21%	$2,382
UAAL	24.81%	4,841	4.17%	814	4.38%	854	33.36%	6,509
Total Contributions	34.26%	$6,685	6.27%	$1,224	5.04%	$982	45.57%	$8,891
District Category III Tier IIA (Buttonwillow)								
Normal Cost	4.02%	$0	2.13%	$0	0.65%	$0	6.80%	$0
UAAL	24.81%	0	4.17%	0	4.38%	0	33.36%	0
Total Contributions	28.83%	$0	6.30%	$0	5.03%	$0	40.16%	$0
District Category III Tier IIA (SJVAPCD)								
Normal Cost	5.29%	$62	1.07%	$13	0.33%	$4	6.69%	$79
UAAL	24.81%	291	4.17%	49	4.38%	52	33.36%	392
Total Contributions	30.10%	$353	5.24%	$62	4.71%	$56	40.05%	$471
District Category III Tier IIB								
Normal Cost	4.88%	$307	1.05%	$66	0.32%	$20	6.25%	$393
UAAL	24.81%	1,562	4.17%	263	4.38%	275	33.36%	2,100
Total Contributions	29.69%	$1,869	5.22%	$329	4.70%	$295	39.61%	$2,493
District Category III – Combined								
Normal Cost	8.21%	$2,217	1.82%	$491	0.56%	$152	10.59%	$2,860
UAAL	24.81%	6,703	4.17%	1,128	4.38%	1,182	33.36%	9,013
Total Contributions	33.02%	$8,920	5.99%	$1,619	4.94%	$1,334	43.95%	$11,873
District Category V Tier I								
Normal Cost	13.19%	$19	4.20%	$6	1.30%	$2	18.69%	$27
UAAL	24.81%	35	4.17%	6	4.38%	7	33.36%	48
Total Contributions	38.00%	$54	8.37%	$12	5.68%	$9	52.05%	$75

Note: Applicable footnotes are shown on page 46.

Recommended Employer Contribution Rates – Current Valuation (continued)

	June 30, 2019 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)
District Category V Tier IIA								
Normal Cost	4.65%	$18	2.13%	$8	0.65%	$3	7.43%	$29
UAAL	24.81%	98	4.17%	16	4.38%	17	33.36%	131
Total Contributions	29.46%	$116	6.30%	$24	5.03%	$20	40.79%	$160
District Category V Tier IIB								
Normal Cost	4.88%	$35	1.05%	$8	0.32%	$2	6.25%	$45
UAAL	24.81%	178	4.17%	30	4.38%	32	33.36%	240
Total Contributions	29.69%	$213	5.22%	$38	4.70%	$34	39.61%	$285
District Category V – Combined								
Normal Cost	5.71%	$72	1.73%	$22	0.63%	$7	8.07%	$101
UAAL	24.81%	311	4.17%	52	4.38%	56	33.36%	419
Total Contributions	30.52%	$383	5.90%	$74	5.01%	$63	41.43%	$520
District Category VI Tier I								
Normal Cost	18.78%	$80	4.20%	$18	1.30%	$5	24.28%	$103
UAAL	24.81%	106	4.17%	18	4.38%	18	33.36%	142
Total Contributions	43.59%	$186	8.37%	$36	5.68%	$23	57.64%	$245
District Category VI Tier IIB								
Normal Cost	4.88%	$0	1.05%	$0	0.32%	$0	6.25%	$0
UAAL	24.81%	0	4.17%	0	4.38%	0	33.36%	0
Total Contributions	29.69%	$0	5.22%	$0	4.70%	$0	39.61%	$0
District Category VI – Combined								
Normal Cost	18.78%	$80	4.20%	$18	1.30%	$5	24.28%	$103
UAAL	24.81%	106	4.17%	18	4.38%	18	33.36%	142
Total Contributions	43.59%	$186	8.37%	$36	5.68%	$23	57.64%	$245
Declining Employers Tier 1 (Berrenda)								
Normal Cost	11.91%	$19	4.35%	$7	1.24%	$2	17.50%	$28
UAAL	184.16%	296	49.32%	79	40.41%	66	273.89%	441
Total Contributions[2]	196.07%	$315	53.67%	$86	41.65%	$68	291.39%	$469

Note: Applicable footnotes are shown on page 46.

Recommended Employer Contribution Rates – Current Valuation (continued)

	June 30, 2019 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)
Declining Employers Tier 1 (Inyokern)								
Normal Cost	N/A	$0	N/A	$0	N/A	$0	N/A	$0
UAAL	N/A	9	N/A	1	N/A	1	N/A	11
Total Contributions[2]	N/A	$9	N/A	$1	N/A	$1	N/A	$11
Declining Employers – Combined								
Normal Cost	11.80%	$19	4.35%	$7	1.24%	$2	17.39%	$28
UAAL	189.44%	305	49.69%	80	41.62%	67	280.75%	452
Total Contributions	201.24%	$324	54.04%	$87	42.86%	$69	298.14%	$480
All Districts – Combined								
Normal Cost	9.36%	$3,507	2.27%	$849	0.69%	$261	12.32%	$4,617
UAAL	25.51%	9,562	4.37%	1,636	4.54%	1,702	34.42%	12,900
Total Contributions	34.87%	$13,069	6.64%	$2,485	5.23%	$1,963	46.74%	$17,517
All Employers – Combined								
Normal Cost	10.20%	$62,428	3.24%	$19,828	1.01%	$6,202	14.45%	$88,458
UAAL	23.13%	141,615	3.91%	23,916	5.60%	34,291	32.64%	199,822
Total Contributions	33.33%	$204,043	7.15%	$43,744	6.61%	$40,493	47.09%	$288,280

Note: Applicable footnotes are shown on page 46.

Recommended Employer Contribution Rates – Current Valuation (continued)

(1) Based on June 30, 2019 projected compensation.

	June 30, 2019 Projected Compensation ($ in '000s)		June 30, 2019 Projected Compensation ($ in '000s)
County General Tier I without Courts	$157,749	District Category I Tier I	$4,947
County General Tier IIA without Courts	69,698	District Category I Tier IIA	770
County General Tier IIB without Courts	173,937	District Category I Tier IIB	534
Courts Tier I	15,706	District Category II Tier I	1,782
Courts Tier IIA	3,235	District Category II Tier IIB	585
Courts Tier IIB	13,427	District Category II Tier III	0
County Safety Tier I	106,165	District Category III Tier I (Buttonwillow)	37
County Safety Tier IIA	7,422	District Category III Tier I (SJVAPCD)	19,511
County Safety Tier IIB	27,461	District Category III Tier IIA (Buttonwillow)	0
		District Category III Tier IIA (SJVAPCD)	1,174
		District Category III Tier IIB	6,295
		District Category V Tier I	143
		District Category V Tier IIA	394
		District Category V Tier IIB	718
		District Category VI Tier I	426
		District Category VI Tier IIB	0
		Declining Employers Tier I (Berrenda)	161
		Declining Employers Tier I (Inyokern)	0
		All Districts	$37,477
All County with Courts	$574,800	Total	$612,277

(2) These Districts are declining employers and they should contribute based on dollar contribution amounts shown (not rates).

Note: As of June 30, 2019, the COLA Contribution Reserve was zero and, therefore, not available to offset the 2% COLA contribution rate.

Recommended Employer Contribution Rates – Prior Valuation

	June 30, 2018 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)
County General Tier I without Courts								
Normal Cost	13.89%	$23,570	4.20%	$7,127	1.30%	$2,206	19.39%	$32,903
UAAL	19.76%	33,531	2.79%	4,734	4.05%	6,873	26.60%	45,138
Total Contributions	33.65%	$57,101	6.99%	$11,861	5.35%	$9,079	45.99%	$78,041
County General Tier IIA without Courts								
Normal Cost	4.10%	$2,861	2.14%	$1,494	0.65%	$454	6.89%	$4,809
UAAL	19.76%	13,791	2.79%	1,947	4.05%	2,827	26.60%	18,565
Total Contributions	23.86%	$16,652	4.93%	$3,441	4.70%	$3,281	33.49%	$23,374
County General Tier IIB without Courts								
Normal Cost	4.85%	$6,662	1.04%	$1,428	0.31%	$426	6.20%	$8,516
UAAL	19.76%	27,141	2.79%	3,832	4.05%	5,563	26.60%	36,536
Total Contributions	24.61%	$33,803	3.83%	$5,260	4.36%	$5,989	32.80%	$45,052
County General without Courts – Combined								
Normal Cost	8.78%	$33,093	2.67%	$10,049	0.82%	$3,086	12.27%	$46,228
UAAL	19.76%	74,463	2.79%	10,513	4.05%	15,263	26.60%	100,239
Total Contributions	28.54%	$107,556	5.46%	$20,562	4.87%	$18,349	38.87%	$146,467
Courts Tier I								
Normal Cost	10.79%	$1,845	4.20%	$718	1.30%	$223	16.29%	$2,786
UAAL	19.76%	3,379	2.79%	477	4.05%	693	26.60%	4,549
Total Contributions	30.55%	$5,224	6.99%	$1,195	5.35%	$916	42.89%	$7,335
Courts Tier IIA								
Normal Cost	4.31%	$121	2.14%	$60	0.65%	$19	7.10%	$200
UAAL	19.76%	556	2.79%	78	4.05%	114	26.60%	748
Total Contributions	24.07%	$677	4.93%	$138	4.70%	$133	33.70%	$948
Courts Tier IIB								
Normal Cost	4.85%	$498	1.04%	$107	0.31%	$32	6.20%	$637
UAAL	19.76%	2,031	2.79%	287	4.05%	415	26.60%	2,733
Total Contributions	24.61%	$2,529	3.83%	$394	4.36%	$447	32.80%	$3,370

Note: Applicable footnotes are shown on page 53.

Recommended Employer Contribution Rates – Prior Valuation (continued)

	June 30, 2018 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)
Courts – Combined								
Normal Cost	8.16%	$2,464	2.93%	$885	0.91%	$274	12.00%	$3,623
UAAL	19.76%	5,966	2.79%	842	4.05%	1,222	26.60%	8,030
Total Contributions	27.92%	$8,430	5.72%	$1,727	4.96%	$1,496	38.60%	$11,653
County Safety Tier I								
Normal Cost	18.58%	$20,518	6.64%	$7,332	2.12%	$2,341	27.34%	$30,191
UAAL	30.06%	33,195	6.58%	7,266	8.83%	9,751	45.47%	50,212
Total Contributions	48.64%	$53,713	13.22%	$14,598	10.95%	$12,092	72.81%	$80,403
County Safety Tier IIA								
Normal Cost	12.55%	$961	5.47%	$419	1.74%	$134	19.76%	$1,514
UAAL	30.06%	2,303	6.58%	504	8.83%	676	45.47%	3,483
Total Contributions	42.61%	$3,264	12.05%	$923	10.57%	$810	65.23%	$4,997
County Safety Tier IIB								
Normal Cost	10.62%	$2,401	2.68%	$606	0.85%	$192	14.15%	$3,199
UAAL	30.06%	6,796	6.58%	1,488	8.83%	1,996	45.47%	10,280
Total Contributions	40.68%	$9,197	9.26%	$2,094	9.68%	$2,188	59.62%	$13,479
County Safety – Combined								
Normal Cost	16.97%	$23,880	5.94%	$8,357	1.90%	$2,667	24.81%	$34,904
UAAL	30.06%	42,294	6.58%	9,258	8.83%	12,423	45.47%	63,975
Total Contributions	47.03%	$66,174	12.52%	$17,615	10.73%	$15,090	70.28%	$98,879
All County with Courts – Combined								
Normal Cost	10.85%	$59,437	3.52%	$19,291	1.10%	$6,027	15.47%	$84,755
UAAL	22.41%	122,723	3.76%	20,613	5.28%	28,908	31.45%	172,244
Total Contributions	33.26%	$182,160	7.28%	$39,904	6.38%	$34,935	46.92%	$256,999
District Category I Tier I								
Normal Cost	15.81%	$834	4.20%	$222	1.30%	$68	21.31%	$1,124
UAAL	22.86%	1,206	3.94%	208	4.00%	211	30.80%	1,625
Total Contributions	38.67%	$2,040	8.14%	$430	5.30%	$279	52.11%	$2,749

Note: Applicable footnotes are shown on page 53.

Recommended Employer Contribution Rates – Prior Valuation (continued)

	June 30, 2018 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)
District Category I Tier IIA								
Normal Cost	4.62%	$34	2.14%	$16	0.65%	$4	7.41%	$54
UAAL	22.86%	166	3.94%	29	4.00%	29	30.80%	224
Total Contributions	27.48%	$200	6.08%	$45	4.65%	$33	38.21%	$278
District Category I Tier IIB								
Normal Cost	4.85%	$24	1.04%	$5	0.31%	$1	6.20%	$30
UAAL	22.86%	112	3.94%	19	4.00%	20	30.80%	151
Total Contributions	27.71%	$136	4.98%	$24	4.31%	$21	37.00%	$181
District Category I – Combined								
Normal Cost	13.73%	$892	3.75%	$243	1.13%	$73	18.61%	$1,208
UAAL	22.86%	1,484	3.94%	256	4.00%	260	30.80%	2,000
Total Contributions	36.59%	$2,376	7.69%	$499	5.13%	$333	49.41%	$3,208
District Category II Tier I								
Normal Cost	13.96%	$249	4.20%	$75	1.30%	$23	19.46%	$347
UAAL	22.86%	408	3.94%	70	4.00%	71	30.80%	549
Total Contributions	36.82%	$657	8.14%	$145	5.30%	$94	50.26%	$896
District Category II Tier IIB								
Normal Cost	4.85%	$29	1.04%	$6	0.31%	$3	6.20%	$38
UAAL	22.86%	139	3.94%	24	4.00%	24	30.80%	187
Total Contributions	27.71%	$168	4.98%	$30	4.31%	$27	37.00%	$225
District Category II Tier III								
Normal Cost	6.21%	$0	1.25%	$0	0.39%	$0	7.85%	$0
UAAL	22.86%	0	3.94%	0	4.00%	0	30.80%	0
Total Contributions	29.07%	$0	5.19%	$0	4.39%	$0	38.65%	$0
District Category II – Combined								
Normal Cost	11.63%	$278	3.38%	$81	1.05%	$26	16.06%	$385
UAAL	22.86%	547	3.94%	94	4.00%	95	30.80%	736
Total Contributions	34.49%	$825	7.32%	$175	5.05%	$121	46.86%	$1,121

Note: Applicable footnotes are shown on page 53.

Recommended Employer Contribution Rates – Prior Valuation (continued)

	June 30, 2018 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)
District Category III Tier I (Buttonwillow)								
Normal Cost	10.55%	$8	4.20%	$3	1.30%	$2	16.05%	$13
UAAL	22.86%	18	3.94%	3	4.00%	4	30.80%	25
Total Contributions	33.41%	$26	8.14%	$6	5.30%	$6	46.85%	$38
District Category III Tier I (SJVAPCD)								
Normal Cost	9.48%	$1,908	2.11%	$425	0.65%	$130	12.24%	$2,463
UAAL	22.86%	4,601	3.94%	793	4.00%	805	30.80%	6,199
Total Contributions	32.34%	$6,509	6.05%	$1,218	4.65%	$935	43.04%	$8,662
District Category III Tier IIA (Buttonwillow)								
Normal Cost	3.99%	$0	2.14%	$0	0.65%	$0	6.78%	$0
UAAL	22.86%	0	3.94%	0	4.00%	0	30.80%	0
Total Contributions	26.85%	$0	6.08%	$0	4.65%	$0	37.58%	$0
District Category III Tier IIA (SJVAPCD)								
Normal Cost	5.31%	$55	1.08%	$11	0.33%	$4	6.72%	$70
UAAL	22.86%	238	3.94%	41	4.00%	41	30.80%	320
Total Contributions	28.17%	$293	5.02%	$52	4.33%	$45	37.52%	$390
District Category III Tier IIB								
Normal Cost	4.85%	$219	1.04%	$47	0.31%	$13	6.20%	$279
UAAL	22.86%	1,030	3.94%	178	4.00%	180	30.80%	1,388
Total Contributions	27.71%	$1,249	4.98%	$225	4.31%	$193	37.00%	$1,667
District Category III – Combined								
Normal Cost	8.50%	$2,190	1.89%	$486	0.58%	$149	10.97%	$2,825
UAAL	22.86%	5,887	3.94%	1,015	4.00%	1,030	30.80%	7,932
Total Contributions	31.36%	$8,077	5.83%	$1,501	4.58%	$1,179	41.77%	$10,757
District Category IV Tier 1 (Berrenda)								
Normal Cost	14.59%	$31	4.20%	$9	1.30%	$3	20.09%	$43
UAAL	20.54%	44	3.46%	7	3.87%	8	27.87%	59
Total Contributions	35.13%	$75	7.66%	$16	5.17%	$11	47.96%	$102

Note: Applicable footnotes are shown on page 53.

Recommended Employer Contribution Rates – Prior Valuation (continued)

	June 30, 2018 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)
District Category IV Tier 1 (Inyokern)								
Normal Cost	14.59%	$0	4.20%	$0	1.30%	$0	20.09%	$0
UAAL	20.54%	0	3.46%	0	3.87%	0	27.87%	0
Total Contributions	35.13%	$0	7.66%	$0	5.17%	$0	47.96%	$0
District Category IV – Combined								
Normal Cost	14.59%	$31	4.20%	$9	1.30%	$3	20.09%	$43
UAAL	20.54%	44	3.46%	7	3.87%	8	27.87%	59
Total Contributions	35.13%	$75	7.66%	$16	5.17%	$11	47.96%	$102
District Category V Tier I								
Normal Cost	13.08%	$18	4.20%	$6	1.30%	$2	18.58%	$26
UAAL	22.86%	32	3.94%	5	4.00%	6	30.80%	43
Total Contributions	35.94%	$50	8.14%	$11	5.30%	$8	49.38%	$69
District Category V Tier IIA								
Normal Cost	4.76%	$18	2.14%	$8	0.65%	$3	7.55%	$29
UAAL	22.86%	87	3.94%	15	4.00%	15	30.80%	117
Total Contributions	27.62%	$105	6.08%	$23	4.65%	$18	38.35%	$146
District Category V Tier IIB								
Normal Cost	4.85%	$33	1.04%	$7	0.31%	$2	6.20%	$42
UAAL	22.86%	155	3.94%	27	4.00%	27	30.80%	209
Total Contributions	27.71%	$188	4.98%	$34	4.31%	$29	37.00%	$251
District Category V – Combined								
Normal Cost	5.75%	$69	1.73%	$21	0.59%	$7	8.07%	$97
UAAL	22.86%	274	3.94%	47	4.00%	48	30.80%	369
Total Contributions	28.61%	$343	5.67%	$68	4.59%	$55	38.87%	$466
District Category VI Tier I								
Normal Cost	18.84%	$77	4.20%	$17	1.30%	$6	24.34%	$100
UAAL	22.86%	93	3.94%	16	4.00%	17	30.80%	126
Total Contributions	41.70%	$170	8.14%	$33	5.30%	$23	55.14%	$226

Note: Applicable footnotes are shown on page 53.

Recommended Employer Contribution Rates – Prior Valuation (continued)

	June 30, 2018 Actuarial Valuation							
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)	Rate	Estimated Annual Amount(1) ($ in '000s)
District Category VI Tier IIB								
Normal Cost	4.85%	$0	1.04%	$0	0.31%	$0	6.20%	$0
UAAL	22.86%	0	3.94%	0	4.00%	0	30.80%	0
Total Contributions	27.71%	$0	4.98%	$0	4.31%	$0	37.00%	$0
District Category VI – Combined								
Normal Cost	18.84%	$77	4.20%	$17	1.30%	$6	24.34%	$100
UAAL	22.86%	93	3.94%	16	4.00%	17	30.80%	126
Total Contributions	41.70%	$170	8.14%	$33	5.30%	$23	55.14%	$226
All Districts – Combined								
Normal Cost	9.70%	$3,537	2.35%	$857	0.73%	$264	12.78%	$4,658
UAAL	22.85%	8,329	3.94%	1,435	3.99%	1,458	30.78%	11,222
Total Contributions	32.55%	$11,866	6.29%	$2,292	4.72%	$1,722	43.56%	$15,880
All Employers – Combined								
Normal Cost	10.78%	$62,974	3.45%	$20,148	1.08%	$6,291	15.31%	$89,413
UAAL	22.43%	131,052	3.77%	22,048	5.21%	30,366	31.41%	183,466
Total Contributions	33.21%	$194,026	7.22%	$42,196	6.29%	$36,657	46.72%	$272,879

Note: Applicable footnotes are shown on page 53.

Recommended Employer Contribution Rates – Prior Valuation (continued)

(1) Based on June 30, 2018 projected compensation.

	June 30, 2018 Projected Compensation ($ in '000s)		June 30, 2018 Projected Compensation ($ in '000s)
County General Tier I without Courts	$169,691	District Category I Tier I	$5,275
County General Tier IIA without Courts	69,792	District Category I Tier IIA	728
County General Tier IIB without Courts	137,352	District Category I Tier IIB	490
Courts Tier I	17,100	District Category II Tier I	1,784
Courts Tier IIA	2,813	District Category II Tier IIB	608
Courts Tier IIB	10,276	District Category II Tier III	0
County Safety Tier I	110,429	District Category III Tier I (Buttonwillow)	80
County Safety Tier IIA	7,661	District Category III Tier I (SJVAPCD)	20,126
County Safety Tier IIB	22,608	District Category III Tier IIA (Buttonwillow)	0
		District Category III Tier IIA (SJVAPCD)	1,040
		District Category III Tier IIB	4,507
		District Category IV Tier I (Berrenda)	212
		District Category IV Tier I (Inyokern)	0
		District Category V Tier I	139
		District Category V Tier IIA	381
		District Category V Tier IIB	679
		District Category VI Tier I	409
		District Category VI Tier IIB	0
		All Districts	$36,458
All County with Courts	$547,722	Total	$584,180

Note: As of June 30, 2018, the COLA Contribution Reserve was zero and, therefore, not available to offset the 2% COLA contribution rate.

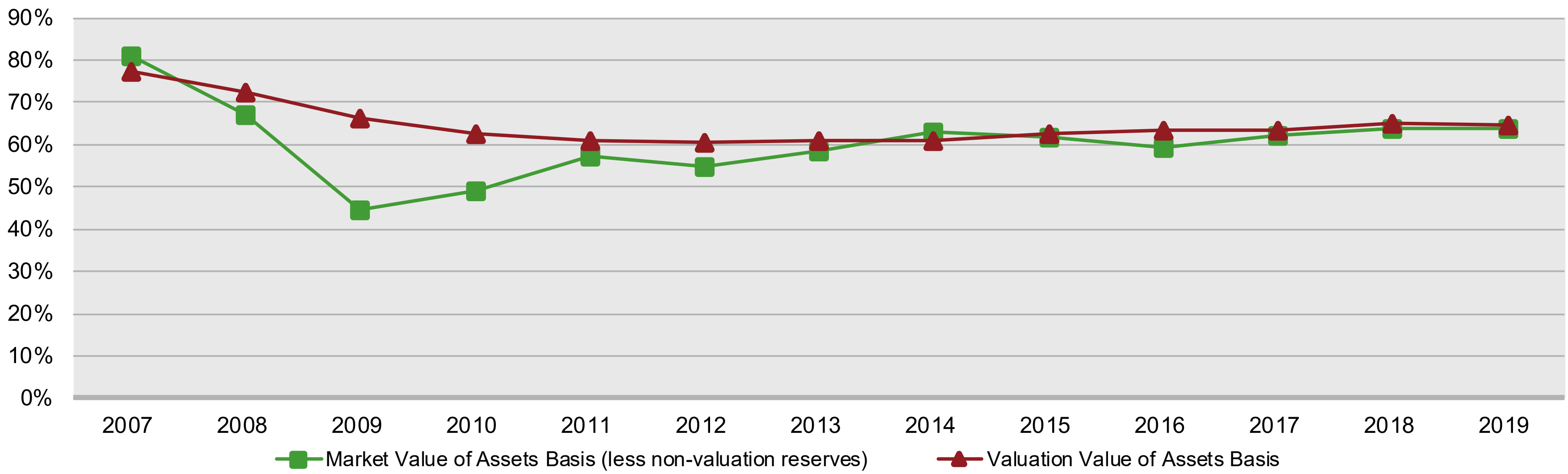
G. Funded Status

A commonly reported piece of information regarding the plan's financial status is the funded ratio. These ratios compare the Market and Valuation Value of Assets to the Actuarial Accrued Liability of the plan. Higher ratios indicate a relatively well-funded plan while lower ratios may indicate recent changes to actuarial assumptions, funding of the plan below actuarial requirements, poor asset performance, or a variety of other causes.

The chart below depicts a history of the funded ratio for the plan. The chart 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 Market or Valuation Value of Assets is used.

FUNDED RATIO FOR PLAN YEARS ENDING JUNE 30, 2007 – 2019



SCHEDULE OF FUNDING PROGRESS
FOR PLAN YEARS ENDING JUNE 30, 2010 - 2019

Actuarial Valuation Date as of June 30	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)
2010	$2,794,644,000	$4,457,038,000	$1,662,395,000	62.7%	$559,380,000	297.2%
2011	2,839,747,000	4,672,348,000	1,832,601,000	60.8%	539,836,000	339.5%
2012	2,960,507,000	4,894,990,000	1,934,483,000	60.5%	543,558,000	355.9%
2013	3,120,632,000	5,108,619,000	1,987,987,000	61.1%	555,752,000	357.7%
2014	3,342,122,000	5,492,440,000	2,150,318,000	60.8%	555,634,000	387.0%
2015	3,529,786,000	5,657,173,000	2,127,387,000	62.4%	556,824,000	382.1%
2016	3,685,447,000	5,813,092,000	2,127,645,000	63.4%	567,261,000	375.1%
2017	3,913,073,000	6,191,433,000	2,278,360,000	63.2%	572,081,000	398.3%
2018	4,163,476,000	6,398,814,000	2,235,338,000	65.1%	584,180,000	382.6%
2019	4,291,573,000	6,622,495,000	2,330,922,000	64.8%	612,277,000	380.7%

(1) Includes assets for SRBR Reserves Unallocated to 0.5% COLA benefits and COLA Contribution Reserve. Excludes assets for Contingency Reserve (unless the Contingency Reserve is negative).

(2) Excludes liabilities held for SRBR Reserves Unallocated to 0.5% COLA benefits.

H. Actuarial Balance Sheet

An overview of the plan's funding is given by an Actuarial Balance Sheet. In this approach, first the amount and timing of all future payments that will be made by the plan for current participants is determined. Then these payments are discounted at the valuation interest rate to the date of the valuation, thereby determining the present value, referred to as the Actuarial Present Value of Future Benefits of the plan.

Second, this Actuarial Present Value of Future Benefits is compared to the assets. The "assets" for this purpose 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 for the Unfunded Actuarial Accrued Liability.

ACTUARIAL BALANCE SHEET

	Year Ended	
	June 30, 2019 ($ in '000s)	**June 30, 2018 ($ in '000s)**
Actuarial Present Value of Future Benefits		
• Present value of benefits for retired members and beneficiaries	$4,307,189	$4,093,801
• Present value of benefits for inactive vested members[1]	206,769	194,674
• Present value of benefits for active members	3,133,629	3,120,519
Total Actuarial Present Value of Future Benefits	**$7,647,587**	**$7,408,994**
Current and future assets		
• Total Valuation Value of Assets	$4,291,573	$4,163,476
• Present value of future contributions by members	363,761	339,485
• Present value of future employer contributions for:		
» Entry age Normal Cost	661,331	670,695
» Unfunded Actuarial Accrued Liability	2,330,922	2,235,338
Total of current and future assets	**$7,647,587**	**$7,408,994**

(1) Includes terminated members due a refund of member contributions.

I. 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 measurement since it is based on the current level of assets.

The current AVR is about 7.1. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 7.1% of one year's payroll. Since actuarial gains and losses are amortized over 18 years, there would be a 0.5% 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.

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. The current total plan LVR is about 10.8, but is 9.0 for General compared to 16.9 for Safety. This means, for example, that assumption changes will have a greater impact on employer contribution rates for Safety than for General.

The chart on the next page shows how the asset and liability volatility ratios have varied over time.

VOLATILITY RATIOS FOR YEARS ENDED JUNE 30, 2010 – 2019

Year Ended June 30	Asset Volatility Ratio			Liability Volatility Ratio		
	General	Safety	Total	General	Safety	Total
2010	3.4	6.4	4.1	6.7	11.7	7.9
2011	4.3	7.9	5.2	7.4	12.5	8.7
2012	4.3	7.7	5.2	7.7	12.8	9.0
2013	4.7	8.0	5.6	8.0	12.7	9.2
2014	5.5	9.1	6.4	8.5	13.7	9.9
2015	5.6	9.2	6.5	8.8	14.1	10.2
2016	5.4	9.0	6.3	8.8	14.4	10.3
2017	5.8	10.4	6.9	9.2	16.0	10.8
2018	6.0	11.0	7.2	9.2	16.4	11.0
2019	5.8	11.4	7.1	9.0	16.9	10.8

J. Risk Assessment

Since the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

Our separate risk assessment report dated September 4, 2019 based on the June 30, 2018 actuarial valuation contained a detailed analysis of the potential range of future measurements. This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the plan's financial health, as well as a discussion of historical trends and maturity measures.

Risk Assessments

- Asset/Liability Mismatch Risk (the potential that future plan experience does not affect asset and liability values in the same way, causing them to diverge)

  The most significant asset/liability mismatch risk to the plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first mismatch is evident in annual valuations: when asset values deviate from assumptions, they are typically independent from liability changes. The second mismatch can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any changes in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by demographic assumption risk such as longevity, which affects liabilities but have no impact on asset levels. This risk is also discussed below.

- Investment Risk (the risk that investment returns will be different than expected)

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial condition of the plan, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through the Actuarial Value of Assets, however investment experience can still have a sizable impact. As discussed in *Section 2, Subsection I, Volatility Ratios,* on page 57, a 1% asset gain or loss (relative to the assumed investment return) translates to about 7.1% of one-year's payroll. Since actuarial gains and losses are amortized over 18 years, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain or loss.

  The single year market value rate of return over the last 10 years has ranged from a low of -0.76% to a high of 21.74%.

- Longevity Risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. This risk can be reduced by using tables appropriate for the plan (public experience tables) that are weighted by benefit levels, and by using generational mortality projections.

- Other Risks

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. One example is projected salary scales over time. As salary is central to the determination of benefits paid in retirement, deviations from the projected salary scales could have a material impact on the benefits anticipated for each member. Examples of demographic assumptions include retirement, termination and disability assumptions, and will likely vary in significance for different groups (for example, disability assumptions are typically more significant for safety groups).

Some plans also carry significant contribution risk, defined as the potential for actual future contributions deviating from expected future contributions. However, the employers have a proven track-record of making the Actuarially Determined Contributions based on the Board's Actuarial Funding Policy, so contribution risk is minimal.

Evaluation of Historical Trends

Past experience can help demonstrate the sensitivity of key results to the plan's actual experience. Over the past ten years:

- The funded percentage on the Valuation Value of Assets basis has increased from 62.7% to 65.1%. For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 55.
- The geometric average investment return on the Valuation Value of Assets over the last 10 years was 5.08%. This includes a high of a 7.28% return and a low of 0.00%. The average over the last 5 years 6.01%. For more details see the Investment Return table in *Section 2, Subsection C* on page 27.
- The primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2014 changed the discount rate from 7.75% to 7.50% and updated mortality tables adding $204 million in unfunded liability. The assumption changes in 2017 changed the discount rate from 7.50% to 7.25% and updated mortality tables adding $213 million in unfunded liability. For more details on the unfunded liability changes see *Section 3, Exhibit H, Table of Amortization Bases* starting on page 89.

- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in *Section 3, Exhibit I, Projection of UAAL Balances and Payments* provided on pages 93 and 94.

Maturity Measures

In the last 10 years the ratio of members in pay status to active participants has increased from 0.72 to 0.92. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative for understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on page 16.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the plan's asset allocation is aligned to meet emerging pension liabilities. For the prior year benefits paid were $67 million more than contributions received (net of administrative expenses). Please note that plans with high levels of negative cash flows may have a need for a larger allocation to income generating assets, which can create a drag on investment return. For more details on historical cash flows see the Comparison of Contributions with Benefits in *Section 2, Subsection B, Financial Information* on page 20.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection I, Volatility Ratios* starting on page 57.

Section 3: Supplemental Information

EXHIBIT A – TABLE OF PLAN COVERAGE
TOTAL PLAN

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
• Number	9,197	8,867	3.7%
• Average age	41.9	42.2	-0.3
• Average years of service	9.5	9.9	-0.4
• Total projected compensation	$612,277,277	$584,180,959	4.8%
• Average projected compensation	$66,574	$65,883	1.0%
• Account balances	$348,829,754	$323,594,921	7.8%
• Total active vested members	5,607	5,574	0.6%
Inactive vested members:[1]			
• Number	2,877	2,604	10.5%
• Average age	42.4	42.5	-0.1
Retired members:			
• Number in pay status	6,382	6,172	3.4%
• Average age	68.7	68.4	0.3
• Average monthly benefit[2]	$3,653	$3,535	3.3%
Disabled members:			
• Number in pay status	893	920	-2.9%
• Average age	67.0	66.5	0.5
• Average monthly benefit[2]	$3,235	$3,134	3.2%
Beneficiaries:			
• Number in pay status	1,220	1,209	0.9%
• Average age	73.4	73.2	0.2
• Average monthly benefit[2]	$1,941	$1,856	4.6%

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
GENERAL TIER I COUNTY WITH COURTS

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
• Number	2,425	2,670	-9.2%
• Average age	50.6	50.2	0.4
• Average years of service	18.1	17.5	0.6
• Total projected compensation	$173,455,102	$186,791,332	-7.1%
• Average projected compensation	$71,528	$69,959	2.2%
• Account balances	$142,797,480	$142,201,155	0.4%
• Total active vested members	2,421	2,668	-9.3%
Inactive vested members:[1]			
• Number	993	1,008	-1.5%
• Average age	48.2	47.7	0.5
Retired members:			
• Number in pay status	4,882	4,748	2.8%
• Average age	69.4	69.1	0.3
• Average monthly benefit[2]	$3,097	$2,974	4.1%
Disabled members:			
• Number in pay status	462	475	-2.7%
• Average age	68.1	67.3	0.8
• Average monthly benefit[2]	$1,976	$1,915	3.2%
Beneficiaries:			
• Number in pay status	787	796	-1.1%
• Average age	74.5	74.4	0.1
• Average monthly benefit[2]	$1,618	$1,545	4.7%

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
GENERAL TIER IIA COUNTY WITH COURTS

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
• Number	1,073	1,125	-4.6%
• Average age	44.4	43.6	0.8
• Average years of service	8.4	7.6	0.8
• Total projected compensation	$72,932,791	$72,605,006	0.5%
• Average projected compensation	$67,971	$64,538	5.3%
• Account balances	$38,319,883	$34,744,854	10.3%
• Total active vested members	968	1,009	-4.1%
Inactive vested members:[1]			
• Number	500	476	5.0%
• Average age	42.6	41.6	1.0
Retired members:			
• Number in pay status	43	27	59.3%
• Average age	66.1	66.8	-0.7
• Average monthly benefit[2]	$718	$630	14.0%
Disabled members:			
• Number in pay status	1	2	-50.0%
• Average age	57.9	60.6	-2.7
• Average monthly benefit[2]	$2,482	$1,763	40.8%
Beneficiaries:			
• Number in pay status	5	3	66.7%
• Average age	60.8	56.2	4.6
• Average monthly benefit[2]	$633	$564	12.2%

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
GENERAL TIER IIB COUNTY WITH COURTS

Category	Year Ended June 30 2019	Year Ended June 30 2018	Change From Prior Year
Active members in valuation:			
• Number	3,527	2,907	21.3%
• Average age	36.4	35.9	0.5
• Average years of service	2.5	2.3	0.2
• Total projected compensation	$187,364,283	$147,627,701	26.9%
• Average projected compensation	$53,123	$50,784	4.6%
• Account balances	$28,227,226	$19,957,287	41.4%
• Total active vested members	496	171	190.1%
Inactive vested members:(1)			
• Number	884	635	39.2%
• Average age	36.1	35.7	0.4
Retired members:			
• Number in pay status	2	0	N/A
• Average age	66.6	N/A	N/A
• Average monthly benefit(2)	$613	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(2)	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(2)	N/A	N/A	N/A

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
DISTRICTS TIER I

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
• Number	252	273	-7.7%
• Average age	47.2	46.8	0.4
• Average years of service	15.7	15.1	0.6
• Total projected compensation	$27,006,392	$28,026,329	-3.6%
• Average projected compensation	$107,168	$102,661	4.4%
• Account balances	$20,469,943	$19,351,009	5.8%
• Total active vested members	252	272	-7.4%
Inactive vested members:[1]			
• Number	147	153	-3.9%
• Average age	49.1	48.8	0.3
Retired members:			
• Number in pay status	280	257	8.9%
• Average age	67.1	66.8	0.3
• Average monthly benefit[2]	$3,877	$3,639	6.5%
Disabled members:			
• Number in pay status	11	11	0.0%
• Average age	64.8	63.8	1.0
• Average monthly benefit[2]	$2,360	$2,426	-2.7%
Beneficiaries:			
• Number in pay status	37	35	5.7%
• Average age	73.7	73.1	0.6
• Average monthly benefit[2]	$2,186	$2,143	2.0%

Note: Information shown includes two declining employers.

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
DISTRICTS TIER IIA

Category	Year Ended June 30 2019	Year Ended June 30 2018	Change From Prior Year
Active members in valuation:			
• Number	25	24	4.2%
• Average age	40.7	39.8	0.9
• Average years of service	8.4	7.2	1.2
• Total projected compensation	$2,338,376	$2,149,461	8.8%
• Average projected compensation	$93,535	$89,561	4.4%
• Account balances	$948,895	$763,994	24.2%
• Total active vested members	25	23	8.7%
Inactive vested members:[1]			
• Number	5	5	0.0%
• Average age	32.6	31.6	1.0
Retired members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[2]	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[2]	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[2]	N/A	N/A	N/A

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
DISTRICTS TIER IIB

Category	Year Ended June 30 2019	Year Ended June 30 2018	Change From Prior Year
Active members in valuation:			
• Number	131	107	22.4%
• Average age	34.2	34.9	-0.7
• Average years of service	2.4	2.2	0.2
• Total projected compensation	$8,131,917	$6,282,809	29.4%
• Average projected compensation	$62,076	$58,718	5.7%
• Account balances	$1,204,940	$823,313	46.4%
• Total active vested members	15	2	650.0%
Inactive vested members:[1]			
• Number	15	14	7.1%
• Average age	31.3	32.1	-0.8
Retired members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[2]	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[2]	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[2]	N/A	N/A	N/A

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
DISTRICTS TIER III

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
• Number	0	0	N/A
• Average age	N/A	N/A	N/A
• Average years of service	N/A	N/A	N/A
• Total projected compensation	N/A	N/A	N/A
• Average projected compensation	N/A	N/A	N/A
• Account balances	N/A	N/A	N/A
• Total active vested members	N/A	N/A	N/A
Inactive vested members:(1)			
• Number	0	0	N/A
• Average age	N/A	N/A	N/A
Retired members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit(2)	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(2)	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(2)	N/A	N/A	N/A

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
SAFETY TIER I

Category	Year Ended June 30 2019	Year Ended June 30 2018	Change From Prior Year
Active members in valuation:			
• Number	1,194	1,258	-5.1%
• Average age	42.8	42.1	0.7
• Average years of service	16.1	15.4	0.7
• Total projected compensation	$106,164,961	$110,428,901	-3.9%
• Average projected compensation	$88,915	$87,781	1.3%
• Account balances	$100,346,006	$92,986,290	7.9%
• Total active vested members	1,194	1,258	-5.1%
Inactive vested members:[1]			
• Number	239	235	1.7%
• Average age	41.6	41.3	0.3
Retired members:			
• Number in pay status	1,174	1,140	3.0%
• Average age	66.1	65.7	0.4
• Average monthly benefit[2]	$6,030	$5,918	1.9%
Disabled members:			
• Number in pay status	419	432	-3.0%
• Average age	66.0	65.6	0.4
• Average monthly benefit[2]	$4,647	$4,498	3.3%
Beneficiaries:			
• Number in pay status	391	375	4.3%
• Average age	71.4	70.8	0.6
• Average monthly benefit[2]	$2,584	$2,499	3.4%

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
SAFETY TIER IIA

Category	Year Ended June 30 2019	Year Ended June 30 2018	Change From Prior Year
Active members in valuation:			
• Number	100	108	-7.4%
• Average age	35.3	34.5	0.8
• Average years of service	7.4	6.4	1.0
• Total projected compensation	$7,422,341	$7,661,486	-3.1%
• Average projected compensation	$74,223	$70,940	4.6%
• Account balances	$4,344,382	$3,781,686	14.9%
• Total active vested members	96	103	-6.8%
Inactive vested members:[1]			
• Number	20	20	0.0%
• Average age	34.2	32.7	1.5
Retired members:			
• Number in pay status	1	0	N/A
• Average age	64.9	N/A	N/A
• Average monthly benefit[2]	$960	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[2]	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[2]	N/A	N/A	N/A

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT A – TABLE OF PLAN COVERAGE (CONTINUED)
SAFETY TIER IIB

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
• Number	470	395	19.0%
• Average age	31.0	30.8	0.2
• Average years of service	3.2	2.9	0.3
• Total projected compensation	$27,461,115	$22,607,934	21.5%
• Average projected compensation	$58,428	$57,235	2.1%
• Account balances	$12,170,999	$8,985,334	35.5%
• Total active vested members	140	68	105.9%
Inactive vested members:[(1)]			
• Number	74	58	27.6%
• Average age	32.2	30.3	1.9
Retired members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[(2)]	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[(2)]	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[(2)]	N/A	N/A	N/A

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
TOTAL PLAN

		Years of Service								
Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	271	270	1	- -	- -	- -	- -	- -	- -	- -
	$45,983	$45,946	$56,096	- -	- -	- -	- -	- -	- -	- -
25 - 29	1,122	984	137	1	- -	- -	- -	- -	- -	- -
	$52,043	$50,288	$64,322	$96,583	- -	- -	- -	- -	- -	- -
30 - 34	1,501	876	448	177	- -	- -	- -	- -	- -	- -
	$59,804	$52,341	$68,106	$75,724	- -	- -	- -	- -	- -	- -
35 - 39	1,512	536	332	516	123	5	- -	- -	- -	- -
	$68,459	$55,131	$66,893	$79,029	$85,770	$84,555	- -	- -	- -	- -
40 - 44	1,332	353	206	412	288	73	- -	- -	- -	- -
	$71,121	$53,232	$65,890	$75,432	$87,193	$84,649	- -	- -	- -	- -
45 - 49	1,206	220	178	265	307	191	44	1	- -	- -
	$76,458	$60,880	$66,915	$75,918	$84,846	$87,974	$87,007	$106,495	- -	- -
50 - 54	852	152	100	178	148	154	89	29	2	- -
	$71,541	$57,584	$65,852	$67,095	$74,918	$80,166	$84,769	$86,872	$87,452	- -
55 - 59	806	123	89	148	127	130	108	69	12	- -
	$72,666	$60,809	$68,908	$68,728	$76,464	$74,634	$83,481	$77,924	$81,526	- -
60 - 64	435	69	80	88	68	75	32	13	9	1
	$68,862	$63,784	$58,471	$68,065	$68,285	$72,794	$81,543	$94,584	$97,955	$62,977
65 - 69	134	23	12	33	24	23	12	5	1	1
	$72,912	$68,575	$65,716	$72,663	$78,216	$69,882	$69,973	$93,000	$98,756	$118,549
70 & over	26	4	3	6	5	2	4	2	- -	- -
	$75,375	$63,042	$51,676	$75,878	$90,253	$117,069	$81,079	$43,787	- -	- -
Total	**9,197**	**3,610**	**1,586**	**1,824**	**1,090**	**653**	**289**	**119**	**24**	**2**
	$66,574	**$53,168**	**$66,464**	**$74,799**	**$82,091**	**$80,787**	**$83,606**	**$82,224**	**$88,899**	**$90,763**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
GENERAL TIER I COUNTY WITH COURTS

		Years of Service								
Age	**Total**	**0 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	1	- -	1	- -	- -	- -	- -	- -	- -	- -
	$60,007	- -	$60,007	- -	- -	- -	- -	- -	- -	- -
30 - 34	45	- -	2	43	- -	- -	- -	- -	- -	- -
	$60,611	- -	$71,766	$60,092	- -	- -	- -	- -	- -	- -
35 - 39	253	2	5	203	41	2	- -	- -	- -	- -
	$68,508	$112,601	$61,355	$68,666	$67,258	$51,905	- -	- -	- -	- -
40 - 44	374	- -	6	215	126	27	- -	- -	- -	- -
	$70,227	- -	$65,586	$67,655	$75,090	$69,046	- -	- -	- -	- -
45 - 49	498	- -	9	167	201	99	22	- -	- -	- -
	$76,759	- -	$69,764	$71,952	$77,995	$83,026	$76,609	- -	- -	- -
50 - 54	432	- -	4	114	118	103	70	22	1	- -
	$70,586	- -	$85,944	$64,367	$69,389	$74,180	$76,093	$72,555	$60,201	- -
55 - 59	482	2	4	101	107	109	87	63	9	- -
	$71,028	$76,381	$59,798	$62,969	$70,041	$72,302	$76,203	$76,654	$72,171	- -
60 - 64	241	1	7	62	63	63	27	12	5	1
	$70,111	$79,862	$53,142	$64,563	$67,225	$69,599	$79,024	$93,285	$101,202	$62,977
65 - 69	83	- -	- -	27	20	19	10	5	1	1
	$71,916	- -	- -	$66,976	$80,363	$67,748	$58,390	$93,000	$98,756	$118,549
70 & over	16	- -	- -	4	4	2	4	2	- -	- -
	$78,153	- -	- -	$65,264	$85,842	$117,069	$81,079	$43,787	- -	- -
Total	**2,425**	**5**	**38**	**936**	**680**	**424**	**220**	**104**	**16**	**2**
	$71,528	**$91,565**	**$65,439**	**$67,152**	**$73,182**	**$74,564**	**$75,834**	**$77,859**	**$82,157**	**$90,763**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
GENERAL TIER IIA COUNTY WITH COURTS

	Years of Service									
Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	23	5	18	- -	- -	- -	- -	- -	- -	- -
	$52,031	$55,224	$51,144	- -	- -	- -	- -	- -	- -	- -
30 - 34	171	12	120	39	- -	- -	- -	- -	- -	- -
	$62,052	$65,251	$62,284	$60,355	- -	- -	- -	- -	- -	- -
35 - 39	247	40	115	91	1	- -	- -	- -	- -	- -
	$72,240	$64,591	$67,473	$81,820	$54,545	- -	- -	- -	- -	- -
40 - 44	176	22	98	55	1	- -	- -	- -	- -	- -
	$66,410	$53,112	$65,489	$73,644	$51,311	- -	- -	- -	- -	- -
45 - 49	155	15	96	44	- -	- -	- -	- -	- -	- -
	$72,955	$88,284	$65,634	$83,704	- -	- -	- -	- -	- -	- -
50 - 54	111	9	61	39	1	1	- -	- -	- -	- -
	$64,927	$51,604	$66,023	$67,439	$40,460	$44,548	- -	- -	- -	- -
55 - 59	91	11	50	28	- -	2	- -	- -	- -	- -
	$69,826	$57,177	$70,186	$76,249	- -	$40,453	- -	- -	- -	- -
60 - 64	77	8	45	23	- -	1	- -	- -	- -	- -
	$66,233	$94,626	$57,146	$73,615	- -	$78,249	- -	- -	- -	- -
65 - 69	18	4	8	6	- -	- -	- -	- -	- -	- -
	$80,839	$84,213	$66,089	$98,256	- -	- -	- -	- -	- -	- -
70 & over	4	2	2	- -	- -	- -	- -	- -	- -	- -
	$42,403	$39,094	$45,712	- -	- -	- -	- -	- -	- -	- -
Total	**1,073**	**128**	**613**	**325**	**3**	**4**	**- -**	**- -**	**- -**	**- -**
	$67,971	**$65,632**	**$64,602**	**$75,633**	**$48,772**	**$50,925**	**- -**	**- -**	**- -**	**- -**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
GENERAL TIER IIB COUNTY WITH COURTS

		Years of Service								
Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	193	193	- -	- -	- -	- -	- -	- -	- -	- -
	$42,688	$42,688	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	833	791	42	- -	- -	- -	- -	- -	- -	- -
	$49,281	$49,007	$54,444	- -	- -	- -	- -	- -	- -	- -
30 - 34	912	763	149	- -	- -	- -	- -	- -	- -	- -
	$53,690	$51,604	$64,371	- -	- -	- -	- -	- -	- -	- -
35 - 39	570	453	116	1	- -	- -	- -	- -	- -	- -
	$54,778	$53,901	$58,281	$45,735	- -	- -	- -	- -	- -	- -
40 - 44	371	308	62	1	- -	- -	- -	- -	- -	- -
	$53,541	$52,621	$58,402	$35,222	- -	- -	- -	- -	- -	- -
45 - 49	247	198	48	1	- -	- -	- -	- -	- -	- -
	$58,754	$58,861	$58,700	$39,988	- -	- -	- -	- -	- -	- -
50 - 54	165	140	23	2	- -	- -	- -	- -	- -	- -
	$56,752	$57,434	$52,843	$53,963	- -	- -	- -	- -	- -	- -
55 - 59	131	101	28	2	- -	- -	- -	- -	- -	- -
	$59,364	$59,971	$57,915	$49,023	- -	- -	- -	- -	- -	- -
60 - 64	83	58	25	- -	- -	- -	- -	- -	- -	- -
	$59,412	$59,231	$59,833	- -	- -	- -	- -	- -	- -	- -
65 - 69	19	18	1	- -	- -	- -	- -	- -	- -	- -
	$63,167	$64,832	$33,207	- -	- -	- -	- -	- -	- -	- -
70 & over	3	2	1	- -	- -	- -	- -	- -	- -	- -
	$79,194	$86,989	$63,605	- -	- -	- -	- -	- -	- -	- -
Total	**3,527**	**3,025**	**495**	**7**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**
	$53,123	**$52,076**	**$59,609**	**$46,702**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
DISTRICTS TIER I

	Years of Service									
Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	2	- -	2	- -	- -	- -	- -	- -	- -	- -
	$54,700	- -	$54,700	- -	- -	- -	- -	- -	- -	- -
30 - 34	17	- -	12	5	- -	- -	- -	- -	- -	- -
	$94,235	- -	$85,320	$115,633	- -	- -	- -	- -	- -	- -
35 - 39	42	- -	7	31	4	- -	- -	- -	- -	- -
	$100,545	- -	$96,889	$101,615	$98,652	- -	- -	- -	- -	- -
40 - 44	62	- -	7	33	20	2	- -	- -	- -	- -
	$112,551	- -	$94,234	$100,939	$133,580	$157,952	- -	- -	- -	- -
45 - 49	41	- -	4	14	16	5	2	- -	- -	- -
	$105,311	- -	$107,628	$83,663	$127,462	$109,091	$65,561	- -	- -	- -
50 - 54	25	- -	2	8	5	4	6	- -	- -	- -
	$115,539	- -	$139,379	$83,577	$93,738	$144,227	$149,253	- -	- -	- -
55 - 59	44	- -	1	10	12	9	9	2	1	- -
	$114,709	- -	$109,240	$105,656	$124,649	$92,425	$140,761	$82,415	$122,109	- -
60 - 64	11	- -	- -	2	3	5	1	- -	- -	- -
	$99,305	- -	- -	$91,054	$91,297	$106,609	$103,311	- -	- -	- -
65 - 69	6	- -	2	- -	1	1	2	- -	- -	- -
	$92,328	- -	$62,432	- -	$56,685	$116,637	$127,890	- -	- -	- -
70 & over	2	- -	- -	2	- -	- -	- -	- -	- -	- -
	$97,105	- -	- -	$97,105	- -	- -	- -	- -	- -	- -
Total	**252**	**- -**	**37**	**105**	**61**	**26**	**20**	**2**	**1**	**- -**
	$107,168	**- -**	**$92,283**	**$98,400**	**$121,322**	**$112,299**	**$132,629**	**$82,415**	**$122,109**	**- -**

Note: Information shown includes the declining employers.

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
DISTRICTS TIER IIA

	Years of Service									
Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	1	- -	1	- -	- -	- -	- -	- -	- -	- -
	$99,503	- -	$99,503	- -	- -	- -	- -	- -	- -	- -
30 - 34	4	- -	4	- -	- -	- -	- -	- -	- -	- -
	$92,690	- -	$92,690	- -	- -	- -	- -	- -	- -	- -
35 - 39	9	- -	9	- -	- -	- -	- -	- -	- -	- -
	$86,665	- -	$86,665	- -	- -	- -	- -	- -	- -	- -
40 - 44	5	1	4	- -	- -	- -	- -	- -	- -	- -
	$80,231	$71,074	$82,520	- -	- -	- -	- -	- -	- -	- -
45 - 49	2	- -	2	- -	- -	- -	- -	- -	- -	- -
	$110,858	- -	$110,858	- -	- -	- -	- -	- -	- -	- -
50 - 54	2	- -	2	- -	- -	- -	- -	- -	- -	- -
	$82,906	- -	$82,906	- -	- -	- -	- -	- -	- -	- -
55 - 59	2	- -	2	- -	- -	- -	- -	- -	- -	- -
	$149,723	- -	$149,723	- -	- -	- -	- -	- -	- -	- -
60 - 64	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**25**	**1**	**24**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**
	$93,535	**$71,074**	**$94,471**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED) BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION DISTRICTS TIER IIB

	Years of Service									
Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	11	11	- -	- -	- -	- -	- -	- -	- -	- -
	$59,525	$59,525	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	45	42	3	- -	- -	- -	- -	- -	- -	- -
	$60,145	$58,412	$84,394	- -	- -	- -	- -	- -	- -	- -
30 - 34	30	23	7	- -	- -	- -	- -	- -	- -	- -
	$61,887	$60,722	$65,717	- -	- -	- -	- -	- -	- -	- -
35 - 39	20	19	1	- -	- -	- -	- -	- -	- -	- -
	$62,895	$61,530	$88,827	- -	- -	- -	- -	- -	- -	- -
40 - 44	11	11	- -	- -	- -	- -	- -	- -	- -	- -
	$59,207	$59,207	- -	- -	- -	- -	- -	- -	- -	- -
45 - 49	2	2	- -	- -	- -	- -	- -	- -	- -	- -
	$67,530	$67,530	- -	- -	- -	- -	- -	- -	- -	- -
50 - 54	5	3	2	- -	- -	- -	- -	- -	- -	- -
	$84,948	$82,505	$88,613	- -	- -	- -	- -	- -	- -	- -
55 - 59	4	3	1	- -	- -	- -	- -	- -	- -	- -
	$64,412	$56,957	$86,779	- -	- -	- -	- -	- -	- -	- -
60 - 64	2	1	1	- -	- -	- -	- -	- -	- -	- -
	$57,000	$41,966	$72,033	- -	- -	- -	- -	- -	- -	- -
65 - 69	1	1	- -	- -	- -	- -	- -	- -	- -	- -
	$73,399	$73,399	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**131**	**116**	**15**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**
	$62,076	**$60,292**	**$75,871**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
DISTRICTS TIER III

	Years of Service									
Age	Total	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	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
55 - 59	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
60 - 64	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**
	- -	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
SAFETY TIER I

		Years of Service								
Age	Total	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	17	- -	16	1	- -	- -	- -	- -	- -	- -
	$85,632	- -	$84,948	$96,583	- -	- -	- -	- -	- -	- -
30 - 34	146	- -	57	89	- -	- -	- -	- -	- -	- -
	$85,643	- -	$82,189	$87,855	- -	- -	- -	- -	- -	- -
35 - 39	297	- -	31	186	77	3	- -	- -	- -	- -
	$87,736	- -	$80,740	$85,444	$95,363	$106,322	- -	- -	- -	- -
40 - 44	309	- -	17	107	141	44	- -	- -	- -	- -
	$88,503	- -	$80,626	$84,580	$91,684	$90,891	- -	- -	- -	- -
45 - 49	246	- -	10	38	90	87	20	1	- -	- -
	$91,249	- -	$80,976	$82,893	$92,570	$92,390	$100,590	$106,495	- -	- -
50 - 54	109	- -	3	15	24	46	13	7	1	- -
	$93,831	- -	$64,886	$79,891	$99,619	$88,773	$101,722	$131,866	$114,702	- -
55 - 59	44	- -	1	7	8	10	12	4	2	- -
	$89,233	- -	$65,406	$74,627	$90,092	$90,876	$93,293	$95,693	$103,329	- -
60 - 64	19	- -	1	1	2	6	4	1	4	- -
	$88,150	- -	$107,243	$111,571	$67,162	$77,258	$93,101	$110,171	$93,898	- -
65 - 69	6	- -	- -	- -	3	3	- -	- -	- -	- -
	$69,446	- -	- -	- -	$71,083	$67,808	- -	- -	- -	- -
70 & over	1	- -	- -	- -	1	- -	- -	- -	- -	- -
	$107,900	- -	- -	- -	$107,900	- -	- -	- -	- -	- -
Total	**1,194**	**- -**	**136**	**444**	**346**	**199**	**49**	**13**	**7**	**- -**
	$88,915	**- -**	**$81,578**	**$85,227**	**$92,974**	**$90,530**	**$98,492**	**$117,115**	**$99,564**	**- -**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
SAFETY TIER IIA

		Years of Service								
Age	**Total**	**0 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
Under 25	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	20	3	17	- -	- -	- -	- -	- -	- -	- -
	$73,518	$65,918	$74,859	- -	- -	- -	- -	- -	- -	- -
30 - 34	39	1	37	1	- -	- -	- -	- -	- -	- -
	$73,728	$69,758	$73,990	$67,996	- -	- -	- -	- -	- -	- -
35 - 39	26	- -	23	3	- -	- -	- -	- -	- -	- -
	$75,210	- -	$75,117	$75,929	- -	- -	- -	- -	- -	- -
40 - 44	6	2	4	- -	- -	- -	- -	- -	- -	- -
	$67,493	$73,092	$64,693	- -	- -	- -	- -	- -	- -	- -
45 - 49	5	- -	5	- -	- -	- -	- -	- -	- -	- -
	$86,557	- -	$86,557	- -	- -	- -	- -	- -	- -	- -
50 - 54	2	- -	2	- -	- -	- -	- -	- -	- -	- -
	$61,295	- -	$61,295	- -	- -	- -	- -	- -	- -	- -
55 - 59	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
60 - 64	1	- -	1	- -	- -	- -	- -	- -	- -	- -
	$58,991	- -	$58,991	- -	- -	- -	- -	- -	- -	- -
65 - 69	1	- -	1	- -	- -	- -	- -	- -	- -	- -
	$101,810	- -	$101,810	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**100**	**6**	**90**	**4**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**
	$74,223	**$68,949**	**$74,587**	**$73,946**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**

EXHIBIT B – MEMBERS IN ACTIVE SERVICE AS OF JUNE 30, 2019 (CONTINUED)
BY AGE, YEARS OF SERVICE, AND AVERAGE PROJECTED COMPENSATION
SAFETY TIER IIB

	Years of Service									
Age	**Total**	**0 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
Under 25	67	66	1	- -	- -	- -	- -	- -	- -	- -
	$53,252	$53,208	$56,096	- -	- -	- -	- -	- -	- -	- -
25 - 29	180	143	37	- -	- -	- -	- -	- -	- -	- -
	$56,907	$54,491	$66,243	- -	- -	- -	- -	- -	- -	- -
30 - 34	137	77	60	- -	- -	- -	- -	- -	- -	- -
	$60,241	$54,898	$67,096	- -	- -	- -	- -	- -	- -	- -
35 - 39	48	22	25	1	- -	- -	- -	- -	- -	- -
	$59,116	$52,515	$64,159	$78,254	- -	- -	- -	- -	- -	- -
40 - 44	18	9	8	1	- -	- -	- -	- -	- -	- -
	$62,976	$60,705	$65,224	$65,439	- -	- -	- -	- -	- -	- -
45 - 49	10	5	4	1	- -	- -	- -	- -	- -	- -
	$60,777	$55,961	$67,436	$58,219	- -	- -	- -	- -	- -	- -
50 - 54	1	- -	1	- -	- -	- -	- -	- -	- -	- -
	$59,604	- -	$59,604	- -	- -	- -	- -	- -	- -	- -
55 - 59	8	6	2	- -	- -	- -	- -	- -	- -	- -
	$83,961	$78,318	$100,891	- -	- -	- -	- -	- -	- -	- -
60 - 64	1	1	- -	- -	- -	- -	- -	- -	- -	- -
	$86,862	$86,862	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
Total	**470**	**329**	**138**	**3**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**
	$58,428	**$54,922**	**$66,593**	**$67,304**	**- -**	**- -**	**- -**	**- -**	**- -**	**- -**

EXHIBIT C – RECONCILIATION OF MEMBER DATA

	Active Members	Inactive Vested Members(1)	Retired Members	Disableds	Beneficiaries	Total
Number as of June 30, 2018	**8,867**	**2,604**	**6,172**	**920**	**1,209**	**19,772**
• New members	1,311	0	N/A	N/A	71	1,382
• Terminations	(545)	545	N/A	N/A	N/A	0
• Contribution refunds	(214)	(153)	N/A	N/A	N/A	(367)
• Retirements	(255)	(74)	329	N/A	N/A	0
• New disabilities	(2)	0	(2)	4	N/A	0
• Return to work	46	(43)	(3)	0	N/A	0
• Died with or without beneficiary	(11)	(2)	(114)	(31)	(56)	(214)
• Data adjustments	0	0	0	0	(4)	(4)
Number as of June 30, 2019	**9,197**	**2,877**	**6,382**	**893**	**1,220**	**20,569**

(1) Includes inactive members due a refund of member contributions.

EXHIBIT D – SUMMARY STATEMENT OF INCOME AND EXPENSES ON A MARKET VALUE BASIS

	Year Ended June 30, 2019		Year Ended June 30, 2018	
Net assets at market value at the beginning of the year		**$4,198,862,286**		**$3,962,895,176**
Contribution income:				
• Employer contributions	$242,424,569		$258,894,487	
• Employee contributions	36,827,443		36,143,110	
• Less administrative expenses	(4,766,651)		(5,116,557)	
Net contribution income		$274,485,361		$289,921,040
Investment income:				
• Interest, dividends, and other income	$95,754,321		$46,841,424	
• Asset appreciation	126,870,360		252,139,095	
• Less investment expenses	(8,380,578)		(31,321,923)	
Net investment income		$214,244,103		$267,658,596
Total income available for benefits		**$488,729,464**		**$557,579,637**
Less benefit payments:				
• Retirement and survivor benefits	$(320,894,761)		$(304,783,929)	
• Supplemental retirement benefits	(16,180,072)		(13,138,844)	
• Refunds of member contributions	(4,736,856)		(3,689,755)	
Net benefit payments		**$(341,811,689)**		$(321,612,528)
Change in net assets at market value		**$146,917,775**		**$235,967,110**
Net assets at market value at the end of the year		**$4,345,780,060**		**$4,198,862,286**

Note: Results may not add due to rounding.

EXHIBIT E – SUMMARY STATEMENT OF PLAN ASSETS

		Year Ended June 30, 2019		Year Ended June 30, 2018
Cash equivalents		$106,312,221		$103,721,753
Capital assets		$2,793,342		$3,204,918
Accounts receivable:				
• Investments sold	$313,517,037		$123,709,399	
• Interest and dividends	8,591,937		8,592,331	
• Contributions and other receivables	1,862,780		18,203,708	
Total accounts receivable		$323,971,753		$150,505,438
Investments:				
• Debt securities and bonds	$1,659,500,045		$1,547,797,293	
• Equities	1,746,159,547		1,710,723,546	
• Real estate investments	284,166,154		242,064,792	
• Alternative investments	590,989,219		561,410,055	
• Commodities	228,365,796		175,299,697	
• Collateral held for securities lending	97,934,932		140,081,206	
Total investments at market value		$4,607,115,692		$4,377,376,590
Total assets		$5,040,193,009		$4,634,808,699
Accounts payable:				
• Securities purchased	$(593,500,967)		$(289,416,501)	
• Collateral held for securities lent	(97,934,932)		(140,081,206)	
• Contributions and other liabilities	(2,977,051)		(6,448,706)	
Total accounts payable		$(694,412,949)		$(435,946,413)
Net assets at market value		**$4,345,780,060**		**$4,198,862,286**
Net assets at actuarial value		**$4,418,117,756**		**$4,291,194,861**
Net assets at valuation value		**$4,291,572,784**		**$4,163,475,848**

Note: Results may not add due to rounding.

EXHIBIT F – SUMMARY OF REPORTED RESERVE INFORMATION

	June 30, 2019	June 30, 2018
Member Deposit Reserve – General & Courts	$258,420,864	$244,678,051
Member Deposit Reserve – Safety	128,906,425	117,438,710
Member Deposit Reserve – Special Districts	26,755,078	25,258,784
Employers Advance Reserve – General & Courts	419,411,182	401,996,323
Employers Advance Reserve – Safety	483,849,540	442,448,018
Employers Advance Reserve – Special Districts	40,864,461	43,598,148
Cost-of-Living Reserve – General & Courts	752,625,490	715,877,835
Cost-of-Living Reserve – Safety	535,881,725	509,151,161
Cost-of-Living Reserve – Special Districts	57,478,378	53,058,799
Retired Members – General, Courts & Special Districts	1,138,138,090	1,122,463,350
Retired Members – Safety	423,604,982	454,491,371
Supplemental Retiree Benefit Reserve (SRBR) – 0.5% COLA	41,991,304	49,370,031
Contingency Reserve[1]	(16,354,734)	(16,354,734)
Valuation Reserves (Valuation Value of Assets)	**$4,291,572,784**	**$4,163,475,848**
Supplemental Retiree Benefit Reserve (SRBR)	$126,544,972	$127,719,014
COLA Contribution Reserve	0	0
Total Reserves (Actuarial Value of Assets)	**$4,418,117,756**	**$4,291,194,861**
Market Stabilization Reserve	$(72,337,696)	$(92,332,576)
Net Market Value of Assets	**$4,345,780,060**	**$4,198,862,285**

Note: Results may not add due to rounding.

(1) Since the Contingency Reserve is negative, it is included as part of (i.e., as an offset to) the valuation value of assets.

EXHIBIT G – DEVELOPMENT OF THE FUND THROUGH JUNE 30, 2019

Year Ended June 30	Employer Contributions	Member Contributions	Administrative and Other Expenses	Net Investment Return[1]	Benefit Payments	Market Value of Assets at Year-End	Valuation Value of Assets at Year-End	Valuation Value as a Percent of Market Value
2010	$151,126,825	$17,877,017	$0	$287,578,945	$180,366,387	$2,301,433,710	$2,794,643,516	121.4%
2011	177,443,815	18,270,765	0	499,791,014	201,013,930	2,795,925,543	2,839,746,667	101.6%
2012	189,837,352	18,719,762	0	17,681,865	222,140,484	2,800,024,038	2,960,506,633	105.7%
2013	211,677,478	20,282,751	0	315,415,541	242,629,555	3,104,770,253	3,120,631,727	100.5%
2014	220,393,167	25,810,310	0	482,632,857	257,495,061	3,576,111,526	3,342,121,678	93.5%
2015	215,476,956	30,324,848	4,886,637	81,931,170	273,864,680	3,625,093,183	3,529,785,691	97.4%
2016	234,713,690	33,278,504	5,224,452	(27,535,157)	288,738,174	3,571,587,594	3,685,447,112	103.2%
2017	241,112,434	34,649,054	5,243,309	426,606,857	305,817,454	3,962,895,176	3,913,072,636	98.7%
2018	258,894,487	36,143,110	5,116,557	267,658,596	321,612,528	4,198,862,285	4,163,475,848	99.2%
2019	242,424,569	36,827,443	4,766,651	214,244,104	341,811,689	4,345,780,060	4,291,572,784	98.8%

[1] On a market basis, net of investment fees and administrative expenses prior to 2015. Starting in 2015, administrative expenses are included in the previous column.

EXHIBIT H – TABLE OF AMORTIZATION BASES

Date Established	Source	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Amortization Amount[1] ($ in '000s)
General County with Courts						
December 31, 2005	Restart Amortization	$1,137,894[2]	30	$1,168,513	16.5	$95,539
June 30, 2012	Actuarial Loss	36,175	18	32,058	11	3,594
June 30, 2013	Actuarial Loss	13,512	18	12,354	12	1,291
June 30, 2014	Actuarial Gain	(37,659)	18	(35,271)	13	(3,458)
June 30, 2014	Assumption Change	103,045	18	96,523	13	9,463
June 30, 2015	Actuarial Gain	(21,641)	18	(20,691)	14	(1,915)
June 30, 2016	Actuarial Gain	(2,590)	18	(2,511)	15	(220)
June 30, 2017	Actuarial Gain	(40,492)	18	(39,808)	16	(3,330)
June 30, 2017	Assumption Change	120,406	18	118,373	16	9,901
June 30, 2018	Actuarial Gain	(19,589)	18	(19,459)	17	(1,557)
June 30, 2019	Actuarial Loss	70,119	18	70,119	18	5,383
General County with Courts Total				**$1,380,200**		**$114,691**

[1] As of middle of year.

[2] As of June 30, 2011.

EXHIBIT H – TABLE OF AMORTIZATION BASES (CONTINUED)

Date Established	Source	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Amortization Amount[1] ($ in '000s)
Districts						
December 31, 2005	Restart Amortization	$86,149[2]	30	$88,461	16.5	$7,233
June 30, 2012	Actuarial Loss	4,431	18	3,929	11	440
June 30, 2013	Actuarial Loss	1,620	18	1,473	12	154
June 30, 2014	Actuarial Loss	2,584	18	2,420	13	237
June 30, 2014	Assumption Change	7,390	18	6,923	13	679
June 30, 2015	Actuarial Gain	(31)	18	(21)	14	(2)
June 30, 2016	Actuarial Loss	5,060	18	4,914	15	431
June 30, 2017	Actuarial Loss	5,822	18	5,722	16	479
June 30, 2017	Assumption Change	11,343	18	11,144	16	932
June 30, 2018	Actuarial Loss	5,634	18	5,593	17	447
June 30, 2019	Actuarial Loss	14,365	18	14,365	18	1,103
Districts Subtotal (Not Including Declining Employers)				**$144,923**		**$12,133**
June 30,2019	Declining Employer Restart Amortization (Berrenda Mesa)	4,147	18	4,147	18	406
June 30,2019	Declining Employer Restart Amortization (Inyokern)	102	18	102	18	10
Declining Employer Subtotal				**$4,249**		**$416**
Districts Total				**$149,172**		**$12,549**

[1] As of middle of year.

[2] As of June 30, 2011.

EXHIBIT H – TABLE OF AMORTIZATION BASES (CONTINUED)

Date Established	Source	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Amortization Amount[1] ($ in '000s)
Safety County						
December 31, 2005	Restart Amortization	$606,032[2]	30	$622,334	16.5	$50,883
June 30, 2012	Actuarial Loss	37,591	18	33,304	11	3,733
June 30, 2013	Actuarial Loss	17,808	18	16,277	12	1,701
June 30, 2014	Actuarial Gain	(23,991)	18	(22,476)	13	(2,204)
June 30, 2014	Assumption Change	93,817	18	87,877	13	8,615
June 30, 2015	Actuarial Gain	(8,513)	18	(8,142)	14	(753)
June 30, 2016	Actuarial Gain	(4,514)	18	(4,398)	15	(386)
June 30, 2017	Actuarial Gain	(24,660)	18	(24,241)	16	(2,028)
June 30, 2017	Assumption Change	81,394	18	80,025	16	6,693
June 30, 2018	Actuarial Gain	(13,175)	18	(13,080)	17	(1,046)
June 30, 2019	Actuarial Loss	34,070	18	34,070	18	2,615
Safety County Total				**$801,550**		**$67,823**

[1] As of middle of year.

[2] As of June 30, 2011.

EXHIBIT H – TABLE OF AMORTIZATION BASES (CONTINUED)

Date Established	Source	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Amortization Amount[1] ($ in '000s)
Total KCERA						
December 31, 2005	Restart Amortization	$1,830,075[2]	30	$1,879,308	16.5	$153,655
June 30, 2012	Actuarial Loss	78,197	18	69,291	11	7,767
June 30, 2013	Actuarial Loss	32,940	18	30,104	12	3,146
June 30, 2014	Actuarial Gain	(59,066)	18	(55,327)	13	(5,425)
June 30, 2014	Assumption Change	204,252	18	191,323	13	18,757
June 30, 2015	Actuarial Gain	(30,185)	18	(28,854)	14	(2,670)
June 30, 2016	Actuarial Gain	(2,044)	18	(1,995)	15	(175)
June 30, 2017	Actuarial Gain	(59,330)	18	(58,327)	16	(4,879)
June 30, 2017	Assumption Change	213,143	18	209,542	16	17,526
June 30, 2018	Actuarial Gain	(27,130)	18	(26,946)	17	(2,156)
June 30, 2019	Actuarial Loss	118,554	18	118,554	18	9,101
June 30, 2019	Declining Employer Restart (Berrenda)	4,147	18	4,147	18	406
June 30, 2019	Declining Employer Restart (Inyokern)	102	18	102	18	10
Total KCERA Total				**$2,330,922**		**$195,063**

[1] As of middle of year.

[2] As of June 30, 2011.

EXHIBIT I – PROJECTION OF UAAL BALANCES AND PAYMENTS

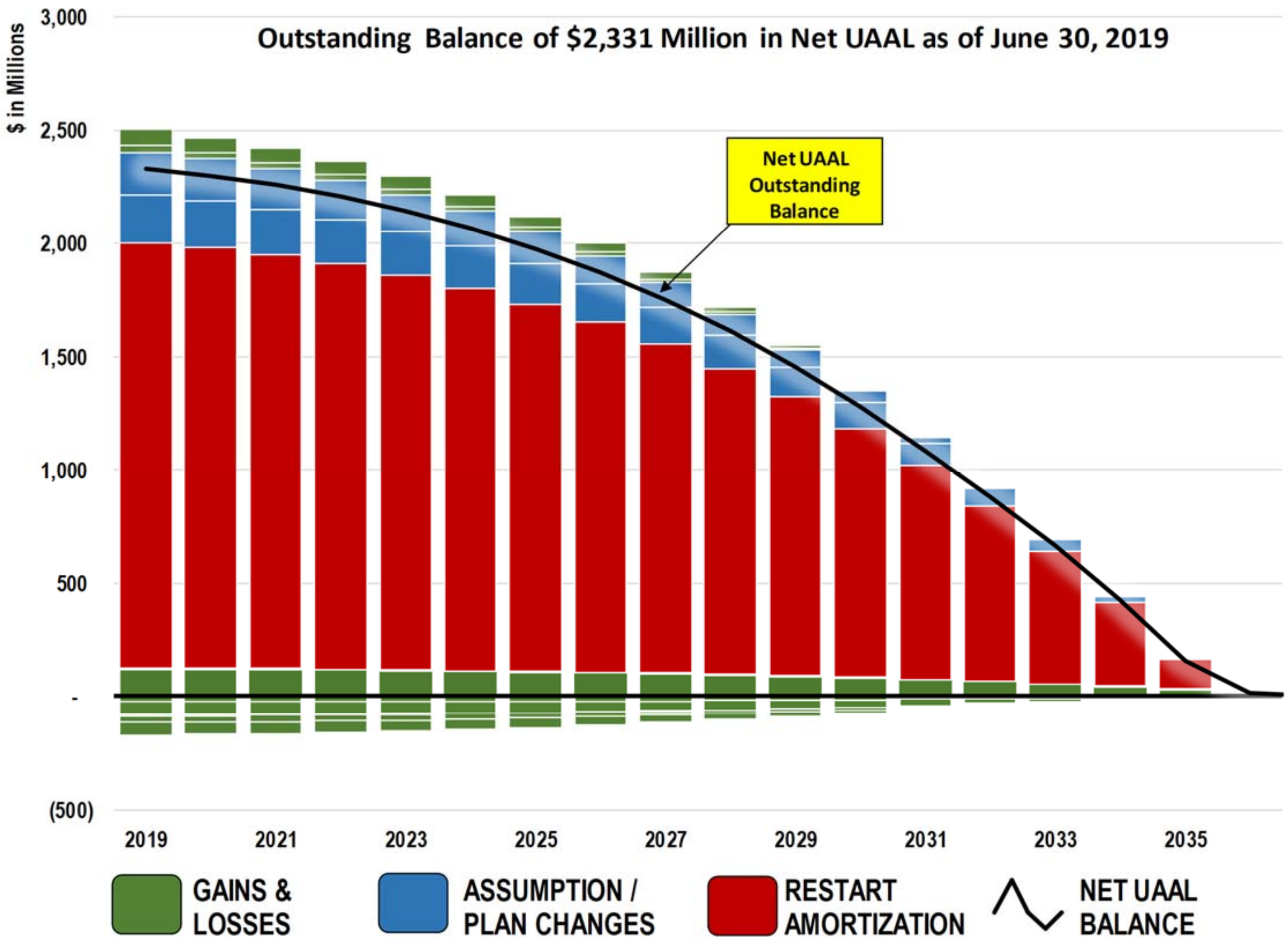


EXHIBIT I – PROJECTION OF UAAL BALANCES AND PAYMENTS (CONTINUED)

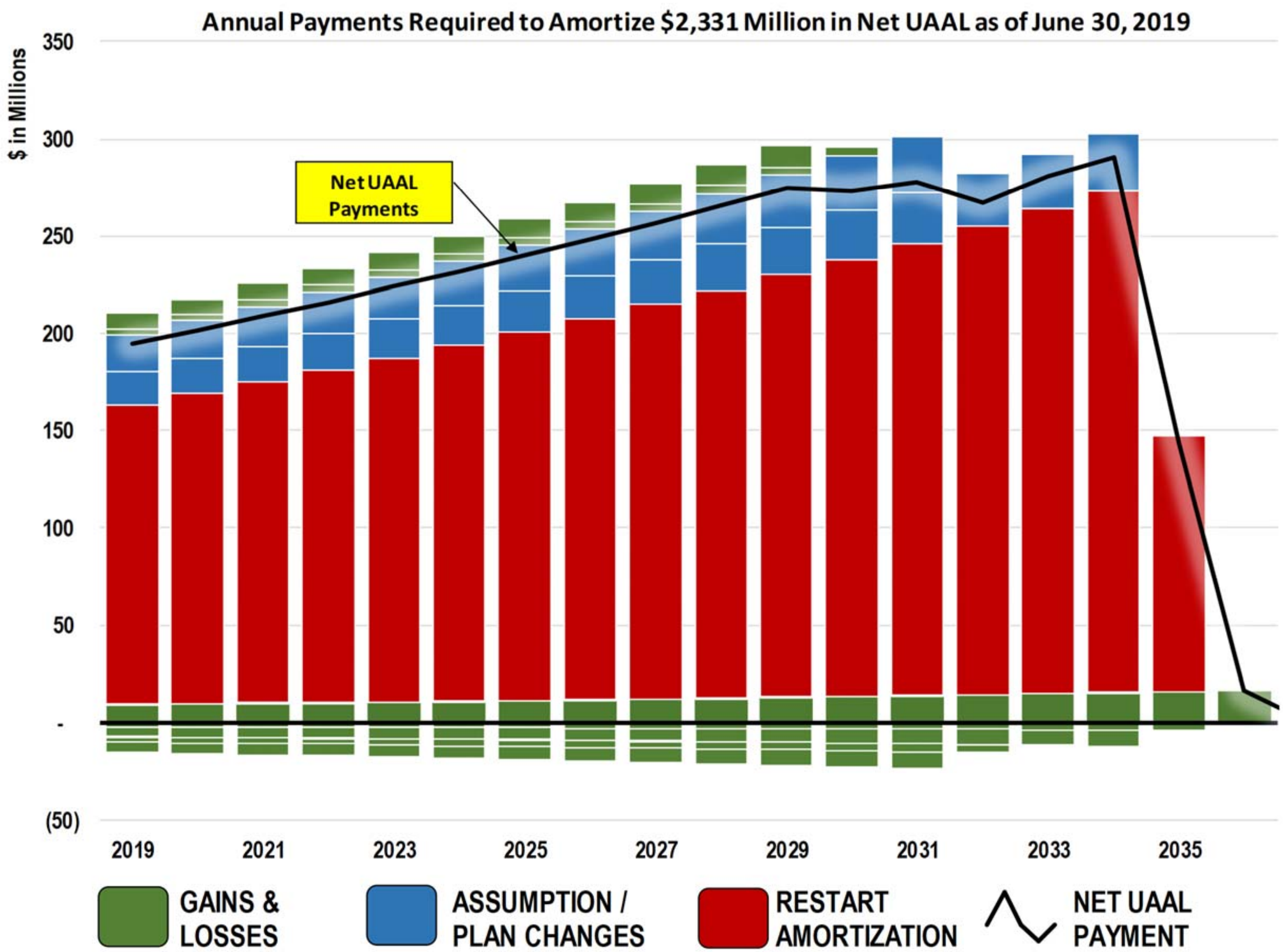


EXHIBIT J – DEFINITION OF PENSION TERMS

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

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 and Beneficiaries:	Actuarial Present Value of lifetime benefits to existing pensioners and beneficiaries. This sum takes account of life expectancies appropriate to the ages of the annuitants and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Actuarial Cost Method:	A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the recommended contribution.
Actuarial Gain or Loss:	A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield actuarial liabilities that are larger than projected.
Actuarially Equivalent:	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV):	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is: Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.) Multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination, etc.) on which the payment is conditioned, and Discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund of member contributions or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan, as well as Actuarially Determined Contributions.
Actuarial Value of Assets (AVA):	The value of the Plan's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the plan.
Actuarially Determined Contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the plan's funding policy. The ADC consists of the employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the Unfunded Actuarial Accrued Liability. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is intended to payoff the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the plan is calculated, including: Investment return - the rate of investment yield that the plan will earn over the long-term future; Mortality rates - the rate or probability of death at a given age for employees and pensioners; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates - the rate or probability of disability retirement at a given age; Termination rates - the rate or probability at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation, real wage growth and merit and promotion increases.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 20 years, it is 19 years at the end of one year, 18 years at the end of two years, etc. See Open Amortization Period.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula based on the member's compensation, age and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Experience Study:	A periodic review and analysis of the actual experience of the plan that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified based on recommendations from the Actuary.
Funded Ratio:	The ratio of the Valuation Value of Assets (VVA) to the Actuarial Accrued Liability (AAL). Plans sometimes also calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the VVA.
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 capital gains and losses to avoid significant swings in the value of assets from one year to the next.
Normal Cost:	The portion of the Actuarial Present Value of Future Benefits allocated to a valuation year by the Actuarial Cost Method. Any payment with respect to an Unfunded Actuarial Accrued Liability is not part of the Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of member contributions and employer Normal Cost unless otherwise specifically stated.

Open Amortization Period:	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. If the initial period is set as 30 years, the same 30-year period is used in each future year in determining the Amortization Period.
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.
Unfunded Actuarial Accrued Liability:	The excess of the Actuarial Accrued Liability over the Valuation Value of Assets. This value may be negative, in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus or an Overfunded Actuarial Accrued Liability.
Valuation Date or Actuarial Valuation Date:	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

EXHIBIT I – 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, 2013 through June 30, 2016 Actuarial Experience Study dated June 21, 2017. Unless otherwise noted, all actuarial assumptions and methods shown below apply to members for all tiers. These assumptions were adopted by the Board.
Economic Assumptions	
Net Investment Return:	7.25%; net of investment expenses. Based on the Actuarial Experience Study reference above, expected investment expenses represent about 0.35% of the Market Value of Assets.
Administrative Expenses:	0.90% of payroll allocated to both the employer and member based on the components of the total average contribution rate (before expenses) for the employer and member. This results in an administrative expense load as shown below:

Average Contribution Rate Before Administrative Expense		Weighting	Total Loading
Employer	46.30%	87.59%	0.79%
Member	6.56%	12.41%	0.11%
Total		100.00%	0.90%

Under this approach, the employer Normal Cost rate is then increased by the same percent of payroll as the member rate with the remaining employer loading allocated to the employer UAAL rate. This is done to maintain a 50/50 sharing of Normal Cost for those in PEPRA Tiers. The table below shows this allocation.

Allocation of Administrative Expense Load as a % of Payroll	
Addition to Employer Basic Normal Cost Rate	0.11%
Addition to Employer Basic UAAL Rate	0.68%
Addition to Member Basic Rate	0.11%
Total Addition to Contribution Rates	0.90%

The administrative expense load is added to the Basic rates for employers and members.

Member Contribution Crediting Rate:	7.25%, compounded semi-annually.
Consumer Price Index:	Increase of 3.00% per year; retiree COLA increases due to CPI are assumed to be 2.50% per year.

Payroll Growth:	Inflation of 3.00% per year plus “across the board” real salary increases of 0.50% per year.
Increase in 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.
Salary Increases:	The annual rate of compensation increase includes: inflation at 3.00%, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotion increases:

Merit and Promotion Increases

Years of Service	Rate (%) General	Rate (%) Safety
Less than 1	5.50	9.00
1-2	4.00	6.50
2-3	3.50	5.50
3-4	3.00	4.25
4-5	2.50	3.75
5-6	2.25	3.25
6-7	2.00	3.00
7-8	1.50	2.50
8-9	1.25	1.75
9-10	1.00	1.50
10-11	0.90	1.25
11-12	0.80	1.00
12-13	0.70	0.90
13-14	0.60	0.85
14-15	0.50	0.80
15-16	0.50	0.75
16-17	0.50	0.70
17-18	0.50	0.65
18-19	0.50	0.60
19-10	0.50	0.55
20 & Over	0.50	0.50

Demographic Assumptions	
Post-Retirement Mortality Rates:	*Healthy* • **General Members and All Beneficiaries:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward one year for males and set forward two years for females, projected generationally with the two-dimensional MP-2016 projection scale. • **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set back one year for males and females, projected generationally with the two-dimensional MP-2016 projection scale. *Disabled* • **General Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward seven years for males and set forward eight years for females, projected generationally with the two-dimensional MP-2016 projection scale. • **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward three years for males and females, projected generationally with the two-dimensional MP-2016 projection scale. 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.
Pre-Retirement Mortality Rates:	• **General and Safety Members:** Headcount-Weighted RP-2014 Employee Mortality Table times 80%, projected generationally with the two-dimensional MP-2016 projection scale.

	Rate (%)			
	General[1]		Safety[1]	
Age	Male	Female	Male	Female
25	0.05	0.02	0.05	0.02
30	0.05	0.02	0.05	0.02
35	0.05	0.03	0.05	0.03
40	0.06	0.04	0.06	0.04
45	0.10	0.07	0.10	0.07
50	0.17	0.11	0.17	0.11
55	0.27	0.17	0.27	0.17
60	0.45	0.24	0.45	0.24
65	0.78	0.36	0.78	0.36

All pre-retirement deaths are assumed to be non-service connected.

(1) Generational projections beyond the base year (2014) are not reflected in the above mortality rates.

Mortality Rates for Member Contributions:	• **General Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set forward one year for males and set forward two years for females, projected to 2034 with the two-dimensional MP-2016 projection scale, weighted 30% male and 70% female. • **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table set back one year for males and females, projected to 2034 with the two-dimensional MP-2016 projection scale, weighted 80% male and 20% female.
Disability Incidence:	See table below

Disability Incidence

	Rate (%)	
Age	**General**	**Safety**
20	0.02	0.05
25	0.03	0.07
30	0.04	0.12
35	0.08	0.24
40	0.11	0.36
45	0.17	0.46
50	0.23	1.10
55	0.28	2.55
60	0.36	3.70
65	0.40	4.00
70	0.00	0.00

50% of General disabilities are assumed to be service connected (duty) disabilities and the other 50% are assumed to be non-service connected (ordinary) disabilities.

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

Termination:

Termination		
Years of Service	Rate (%)	
	General	Safety
Less than 1	17.00	8.00
1-2	13.00	6.00
2-3	10.00	4.50
3-4	9.00	4.00
4-5	7.50	3.50
5-6	6.50	3.00
6-7	5.50	2.50
7-8	5.00	2.20
8-9	4.50	2.10
9-10	4.00	2.00
10-11	3.25	1.90
11-12	3.00	1.80
12-13	2.80	1.60
13-14	2.60	1.40
14-15	2.40	1.20
15-16	2.30	1.00
16-17	2.20	0.90
17-18	2.10	0.75
18-19	1.90	0.75
19-20	1.70	0.75
20-21	1.50	0.00
21-22	1.30	0.00
22-23	1.10	0.00
23-24	1.00	0.00
24-25	1.00	0.00
25-26	1.00	0.00
26-27	1.00	0.00
27-28	1.00	0.00
28-29	1.00	0.00
29-30	1.00	0.00
30 & Over	0.00	0.00

Refer to the next table that contains rates for electing a refund of contributions upon termination. No termination is assumed after a member is first assumed to retire.

Termination (continued):

Electing a Refund of Contributions upon Termination		
Years of Service	Rate (%)	
	General	Safety
Less than 1	100.00	100.00
1-2	100.00	100.00
2-3	100.00	100.00
3-4	100.00	100.00
4-5	100.00	100.00
5-6	45.00	50.00
6-7	42.00	46.00
7-8	40.00	44.00
8-9	36.00	36.00
9-10	32.00	32.00
10-11	30.00	28.00
11-12	28.00	25.00
12-13	26.00	21.00
13-14	24.00	18.00
14-15	22.00	15.00
15-16	20.00	12.00
16-17	18.00	10.00
17-18	16.00	8.00
18-19	14.00	6.00
19-20	13.00	4.00
20-21	12.00	0.00
21-22	11.00	0.00
22-23	10.00	0.00
23-24	8.00	0.00
24-25	6.00	0.00
25-26	4.00	0.00
26-27	2.00	0.00
27 & Over	0.00	0.00

Retirement Rates:

Age	Retirement Rates (%) General Tier I	General Tiers IIA and IIB	General Tier III	Safety Tier I	Safety Tiers IIA and IIB
45	0.00	0.00	0.00	2.00	0.00
46	0.00	0.00	0.00	2.00	0.00
47	0.00	0.00	0.00	2.00	0.00
48	0.00	0.00	0.00	3.00	0.00
49	0.00	0.00	0.00	9.00	0.00
50	6.00	3.00	0.00	20.00	6.00
51	6.00	3.00	0.00	15.00	6.00
52	6.00	3.00	3.00	18.00	6.00
53	6.00	3.00	3.00	18.00	8.00
54	8.00	3.50	3.50	20.00	18.00
55	10.00	5.50	5.50	24.00	22.00
56	12.00	6.50	6.50	24.00	20.00
57	14.00	7.50	7.50	24.00	20.00
58	15.00	9.50	9.50	30.00	20.00
59	19.00	11.50	11.50	20.00	20.00
60	23.00	13.50	13.50	20.00	20.00
61	23.00	15.50	15.50	20.00	20.00
62	25.00	25.00	25.00	40.00	40.00
63	25.00	25.00	25.00	40.00	40.00
64	25.00	25.00	25.00	40.00	40.00
65	32.00	32.00	32.00	100.00	100.00
66	35.00	35.00	35.00	100.00	100.00
67	35.00	35.00	35.00	100.00	100.00
68	40.00	40.00	40.00	100.00	100.00
69	40.00	40.00	40.00	100.00	100.00
70	100.00	100.00	100.00	100.00	100.00

Retirement Age and Benefit for Deferred Vested Members:	General Retirement Age: 57 Safety Retirement Age: 53 50% of future General and 55% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 4.00% and 4.00% compensation increases are assumed per annum for General and Safety, respectively.
Future Benefit Accruals:	1.0 year of service per year of employment.
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 KCERA as of the valuation date.
Form of Payment:	All active and inactive members are assumed to elect the unmodified option at retirement.
Percent Married:	For all active and inactive members, 75% of male members and 60% of female members are assumed to be married at pre-retirement death or retirement. There is no explicit assumption for children's benefits.
Age and Gender of Spouse:	For all active and inactive members, male members are assumed to have a female spouse who is 3 years younger than the member and female members are assumed to have a male spouse who is 2 years older than the member.
<u>Actuarial Funding Policy</u>	
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date 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 formula for each individual has always been in effect (i.e., "replacement life within a tier").
Actuarial Value of Assets:	Market Value of Assets (MVA) less unrecognized returns in each of the last nine semi-annual accounting periods. Unrecognized returns are equal to the difference between the actual market return and the expected return on the market value, and are recognized semi-annually over a five-year period. The Actuarial Value of Assets (AVA) is limited by a 50% corridor; the AVA cannot be less than 50% of MVA, nor greater than 150% of MVA.
Valuation Value of Assets:	The Actuarial Value of Assets reduced by the value of the non-valuation reserves (excluding the Contingency Reserve if it is negative).

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 be amortized separately from any future changes in UAAL over a period of 24.5 years from June 30, 2011. 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 18 years. Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period of 18 years. Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis: a. With the exception noted in b., below, the change in UAAL as a result of any plan amendments will be amortized over a period of 15 years or less; b. 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. For Golden Handshakes, the employer has the choice of two methods: i. Payment in full for the UAAL attributable to the Golden Handshake in the first month of the fiscal year following the fiscal year in which the Golden Handshake was granted. ii. Payment according to a five-year amortization period which will be invoiced (payable in 30 days) to the employer in the first month of the fiscal year following the fiscal year in which the Golden Handshake was granted. The amortization schedule will be based upon the valuation interest rate used in the most recently completed valuation at the time that the amortization schedule is created. The employer may complete payment of the Golden Handshake at any time during the five-year amortization period. If the amortization method is used, then the outstanding balance will generally be recorded as a receivable asset to be included with the Actuarial Value of Assets. All Golden Handshakes provided by an employer during any fiscal year will be bundled together and will be invoiced in one transaction in the first month following the fiscal year in which the Golden Handshakes were granted. UAAL shall be amortized over “closed” amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation. UAAL shall 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 (i.e., wage inflation). If an overfunding or “surplus” exists (i.e., the Valuation Value of Assets exceeds the Actuarial Accrued Liability, so that the total of all UAAL amortization layers becomes negative), 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 18 years as the first of a new series of amortization layers. These amortization policy components will apply separately to each of KCERA's UAAL cost sharing groups.
Other Actuarial Methods	
Employer 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 determined 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 UAAL) is calculated to remain level as a 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 along with expected payroll at the combined annual inflation and "across the board" salary increase rate of 3.50%. Effective with the June 30, 2012 valuation, the June 30, 2011 UAAL is being amortized over a 24.5-year declining period (16.5 years as of June 30, 2019). The change in UAAL that arises due to actuarial gains or losses or due to changes in actuarial assumptions or methods at each valuation is amortized over its own declining 18-year period. Any change in UAAL that arises due to plan amendments is amortized over its own declining 15-year period (with the exception of retirement incentives which are amortized over its own declining period of up to 5 years). The amortization policy is described on the previous page. The UAAL contribution rates have been adjusted to account for the one-year delay between the valuation date and the date that the contribution rates become effective. The recommended employer contributions are provided in *Section 2, Subsection F.* The rates are shown for each tier/cost group and are separated into Normal Cost and UAAL components into each of these three benefit categories: • The Basic benefits are the retirement benefits excluding all COLAs. • The COLA benefits adopted prior to Ventura Settlement are referred to as the "2.0% COLA benefits". • The COLA benefits provided under the Ventura settlement are referred to as the "0.5% COLA benefits".

	These breakdowns are used for allocating employer contributions to specific reserves and, in the case of the 2% COLA contributions, providing the amounts that may be offset by the COLA Contribution Reserve. There were no active members of West Side Recreation & Park in General Tier III as of the valuation date. For purposes of determining a Normal Cost for this tier, we have assumed that the demographic profile (e.g., entry age, composition of male versus female, etc.) of any future active members in this tier can be approximated by the data profiles of all current active members of West Side Recreation & Park.
Member Contributions:	The member contribution rates for all members are provided in *Section 4, Exhibit III*. *General Tiers I and IIA and Safety Tiers I and IIA* Articles 6 and 6.8 of the 1937 Act define the methodology to be used in the calculation of member basic contribution rates for General and Safety members, respectively. The basic contribution rate is determined as that percentage of compensation which if paid annually from a member's first year of membership through the prescribed retirement age would accumulate to the amount necessary to fund a prescribed annuity. The prescribed annuity is equal to: • 1/100 of Final Average Salary per year of service at age 55 for General Tier I members • 1/120 of Final Average Salary per year of service at age 60 for General Tier IIA members • 1/100 of Final Average Salary per year of service at age 50 for Safety Tier I and Safety Tier IIA members Safety Tier I members also pay a supplemental contribution rate such that the aggregate amount of the supplemental and basic contribution rates will provide an annuity equal to 3/200 of one year Final Average Salary per year of service at age 50. Members in these non-CalPEPRA tiers do not contribute towards the cost-of-living benefits. Effective July 11, 2015, San Joaquin Valley Unified Air Pollution Control District Tier 1 members pay 28% of the total Normal Cost rate. That percent increased to 39% effective 2016-2017 and 50% effective 2017-2018. Effective July 8, 2017, San Joaquin Valley Unified Air Pollution Control District Tier IIA members pay 50% of the total Normal Cost rate. *General Tiers IIB and III and Safety Tier IIB* Pursuant to Section 7522.30(a) of the Government Code, General Tier IIB, General Tier III and Safety Tier IIB members are required to contribute at least 50% of the Normal Cost rate. 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 requirements of Section 7522.30(e). Also of note is that based on our discussions with KCERA, we have used the discretion made available by Section 31620.5(a) of AB 1380 to no longer round the member contribution rates to the nearest quarter of one percent as previously required by CalPEPRA. This is consistent with established practice for the non-CalPEPRA tiers and should allow for exactly one-half of the normal cost for the CalPEPRA tiers to be paid by the employees and one-half by the employers. In addition, Section 31620.5(b) of AB 1380 also provides that the "one percent" rule under Section 7022.30(d) does not apply. This section formerly limited the circumstances under which the member rate would change. Member contributions are accumulated at an annual interest rate adopted annually by the Board. For some employers, benefits are integrated with Social Security. In those cases, non-General Tier III members pay two-thirds of the full rate on the first $350 of pay each month. (The General Tier III formula, as valued, is not integrated with Social Security.) The tables on pages 35 through 39 summarize the specific member contribution rate arrangements for each employer as they have been reflected in this valuation. For valuation purposes, the member contribution levels that are assumed to be in place are those for the fiscal year that begins one year after the valuation date. Any future changes in member contribution rates after that would be reflected in future valuations in determining the allocation of the total costs payable between the employers and the members.
Transfers:	When employees transfer from one participating employer to another KCERA participating employer, recognition needs to be made of the employee's prior service within KCERA on an equitable basis. For each employee that transfers within KCERA the funding for the employee's benefits will be determined as follows: • The employee will be reported and funded as a vested terminated employee for the former participating employer with reciprocal benefits the same as any other vested terminated employee who moves to a reciprocal retirement system other than KCERA. • The employee will be reported and funded as an active employee for the new participating employer but with reciprocal service credits for the prior service in KCERA for purposes of benefit eligibility and entry age. Benefit amounts will be funded only for the service provided to the new participating employer. • Upon retirement from KCERA, the employee's total retirement benefit will be determined based on service with each KCERA participating employer and the employee's Final Average Salary. • The entire liability for the retired employee's KCERA benefit payments will be allocated to the latest participating employer's cost group. The employee will be reported as a retired employee for the latest participating employer with the full KCERA retirement benefit amount.
Cost Sharing Adjustments:	KCERA's Normal Cost is determined separately for each group of members that have the same benefit formula (on a prospective basis). The seven Normal Cost cost sharing groups are as follows: • General Tier I • General Tier IIA • General Tier IIB

	• General Tier III • Safety Tier I • Safety Tier IIA • Safety Tier IIB KCERA's UAAL is determined separately for each cost sharing group depending on the assets for that cost group. The three UAAL cost sharing groups are as follows: • General County and Courts • General Districts • Safety
Internal Revenue Code Section 415:	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 $225,000 for 2019. 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. Benefits for members in the legacy tiers 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 actuarial gains as they occur.
Changed Actuarial Assumptions:	There have been no changes in actuarial assumptions since the last valuation.

EXHIBIT II – SUMMARY OF PLAN PROVISIONS

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

Plan Year:	July 1 through June 30
Membership Eligibility:	All permanent employees of Kern County or participating Special Districts scheduled to work 50% or more of the required regular standard hours are eligible to become a member of the Retirement Association subject to classification below:
General Tier I	All General members hired by the County prior to October 27, 2007 (prior to July 5, 2008 for Prosecutors), hired by North of the River Sanitation District prior to October 29, 2007, hired by the Kern County Water Agency prior to January 1, 2010, hired by Berrenda Mesa Water District prior to January 12, 2010, hired by San Joaquin Valley Unified Air Pollution Control District prior to July 31, 2012, hired by West Side Mosquito Abatement District prior to November 15, 2012, hired by Kern Mosquito & Vector Control District prior to December 12, 2012, hired by Inyokern Community Services District prior to December 13, 2012, hired by Buttonwillow Recreation& Park District or East Kern Cemetery District prior to December 17, 2012, hired by West Side Cemetery District prior to December 18, 2012, hired by Shafter Recreation & Park District prior to December 19, 2012, or hired by the Courts prior to March 12, 2011.
General Tier IIA	All General members hired by the County on or after October 27, 2007, hired by North of the River Sanitation District on or after October 29, 2007, hired by the Kern County Water Agency on or after January 1, 2010, hired by Berrenda Mesa Water District on or after January 12, 2010, hired by San Joaquin Valley Unified Air Pollution Control District on or after July 31, 2012, hired by West Side Mosquito Abatement District on or after November 15, 2012, hired by Kern Mosquito & Vector Control District on or after December 12, 2012, hired by Inyokern Community Services District on or after December 13, 2012, hired by Buttonwillow Recreation& Park District or East Kern Cemetery District on or after December 17, 2012, hired by West Side Cemetery District on or after December 18, 2012, hired by Shafter Recreation & Park District on or after December 19, 2012, or hired by the Courts on or after March 12, 2011; and hired prior to January 1, 2013.
General Tier IIB	All General members hired by the County or districts (other than West Side Recreation & Park) on or after January 1, 2013.
General Tier III	All General members hired by West Side Recreation & Park on or after January 1, 2013.
Safety Tier I	All members employed in active law enforcement, active fire suppression, probation, detention or criminal investigation hired prior to March 27, 2012.
Safety Tier IIA	All members employed in active law enforcement, active fire suppression, probation, detention or criminal investigation hired on or after March 27, 2012 and prior to January 1, 2013.
Safety Tier IIB	All member employee in active law enforcement, active fire suppression, probation, detention or criminal investigation hired on or after January 1, 2013.

Final Compensation for Benefit Determination:	
General Tiers I and IIA, Safety Tiers I and IIA	Highest consecutive twelve months of compensation earnable (§31462.1) (FAS1).
General Tier IIB, General Tier III and Safety Tier IIB	Highest consecutive thirty-six months of pensionable compensation (§7522.32 and §7522.34) (FAS3).
Compensation Limit:	
Non-General Tier III	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 for the Plan Year beginning July 1, 2019 is $280,000. The limit is indexed for inflation on an annual basis.
General Tier III	Pensionable Compensation is limited to $124,180 for 2019 ($149,016, 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 Tiers I, IIA and IIB	Age 50 with 10 years of service credit, or age 70 regardless of service credit, or after 30 years of service credit, regardless of age (§31672).
General Tier III	Age 52 with 5 years of service (§7522.20(a)), or age 70 regardless of service credit.
Safety Tiers I, IIA and IIB	Age 50 with 10 years of service credit, or age 70 regardless of service credit, or after 20 years of service credit, regardless of age (§31663.25).
Benefit Formula:	
General Tier I (§31676.17)	

Retirement Age	Benefit Formula[1]
50	(2.00%xFAS1 – 1/3%x2.00%x$350 x 12) x Yrs
55	(2.50%xFAS1 – 1/3%x2.50%x$350 x 12) x Yrs
60	(3.00%xFAS1 – 1/3%x3.00%x$350 x 12) x Yrs
62 and over	(3.00%xFAS1 – 1/3%x3.00%x$350 x 12) x Yrs

	Retirement Age	Benefit Formula
General Tier I[2] (§31676.14)	**Retirement Age**	**Benefit Formula**
	50	1.48% x FAS1 x Yrs
	55	1.95% x FAS1 x Yrs
	60	2.44% x FAS1 x Yrs
	62 and over	2.61% x FAS1 x Yrs
General Tier IIA (§31676.01)	**Retirement Age**	**Benefit Formula[1]**
	50	(0.79%xFAS1 – 1/3x0.79%x$350 x 12) x Yrs
	55	(0.99%xFAS1 – 1/3x1.00%x$350 x 12) x Yrs
	60	(1.28%xFAS1 – 1/3x1.28%x$350 x 12) x Yrs
	62	(1.39%xFAS1 – 1/3x1.39%x$350 x 12) x Yrs
	65 and over	(1.62%xFAS1 – 1/3x1.62%x$350 x 12) x Yrs
General Tier IIB (§31676.01)	**Retirement Age**	**Benefit Formula[1]**
	50	(0.79%xFAS3 – 1/3x0.79%x$350 x 12) x Yrs
	55	(0.99%xFAS3 – 1/3x1.00%x$350 x 12) x Yrs
	60	(1.28%xFAS3 – 1/3x1.28%x$350 x 12) x Yrs
	62	(1.39%xFAS3 – 1/3x1.39%x$350 x 12) x Yrs
	65 and over	(1.62%xFAS3 – 1/3x1.62%x$350 x 12) x Yrs

(1) Benefits for some District Members are not integrated with Social Security.

(2) Two General Districts, Berrenda Mesa and Inyokern, have adopted Section 31676.17 on a prospective basis only as of January 1, 2005, but have Section 31676.14 for service prior to January 1, 2005.

	Retirement Age	Benefit Formula
General Tier III (§7522.20(a))	**Retirement Age**	**Benefit Formula**
	52	1.00% x FAS3 x Yrs
	55	1.30% x FAS3 x Yrs
	60	1.80% x FAS3 x Yrs
	62	2.00% x FAS3 x Yrs
	65	2.30% x FAS3 x Yrs
	67 and over	2.50% x FAS3 x Yrs

Safety Tier I (§31664.1)	**Retirement Age**	**Benefit Formula**
	50	(3.00% x FAS1 - 1/3 x 3.00% x $350 x 12) x Yrs
	55	(3.00% x FAS1 - 1/3 x 3.00% x $350 x 12) x Yrs
	60 and over	(3.00% x FAS1 - 1/3 x 3.00% x $350 x 12) x Yrs
Safety Tier IIA (§31664)	**Retirement Age**	**Benefit Formula**
	50	(2.00% x FAS1 - 1/3 x 2.00% x $350 x 12) x Yrs
	55	(2.62% x FAS1 - 1/3 x 2.62% x $350 x 12) x Yrs
	60 and over	(2.62% x FAS1 - 1/3 x 2.62% x $350 x 12) x Yrs
Safety Tier IIB (§31664)	**Retirement Age**	**Benefit Formula**
	50	(2.00% x FAS3 - 1/3 x 2.00% x $350 x 12) x Yrs
	55	(2.62% x FAS3 - 1/3 x 2.62% x $350 x 12) x Yrs
	57 and over	(2.62% x FAS3 - 1/3 x 2.62% x $350 x 12) x Yrs

Maximum Benefit:	
Non-General Tier III	100% of final compensation (§31676.14, §31676.17, §31676.01, §31664.1,§31664).
General Tier III	There is no final compensation limit on the maximum retirement benefit.
Non-Service Connected Disability:	
Eligibility	Five years of service (§31720).
Benefit	20% of Final Compensation plus 2% of Final Compensation for each full year of service in excess of five years, not to exceed 40% of Final Compensation (§31727.7). For all members, 100% of the Service Retirement benefit, if greater.
Service Connected Disability:	
Eligibility	No age or service requirements (§31720).
Benefit	50% of the Final Compensation or 100% of Service Retirement benefit, if greater (§31727.4).

Pre-Retirement Death:	
All Members	
Eligibility	None.
Basic lump sum benefit	Refund of employee contributions with interest plus one month's eligible compensation for each year of service to a maximum of six months' compensation (§31781).
Service Connected Death	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or minor children (§31787). In addition, Safety members are entitled to benefits under Sections 31787.5 and 31787.6.
Vested Members	
Eligibility	Five years of service.
Basic benefit	60% of the greater of Service Retirement or Non-Service Connected Disability Retirement benefit payable to surviving eligible spouse or eligible children (§31765.1, §31781.1), in lieu of above. Additionally, the spouse may choose a combined benefit of: • A lump sum payment of up to six months' compensation (see above), and • A monthly (60%) benefit reduced by actuarial equivalent of the lump sum payment (§31781.3).
Death After Retirement:	
All Members	
Service Retirement or Non-Service Connected Disability Retirement	Unless another option was selected at retirement, 60% of member's unmodified allowance continued to eligible spouse (§31760.1). An eligible spouse is a surviving spouse who was married to the member at least one year prior to the day of retirement (§31760.1), 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).
Service Connected Disability	Unless another option was selected at retirement, 100% of member's unmodified allowance continued to eligible spouse (§31786).
Withdrawal Benefits:	
Less than Five Years of Service	Refund of accumulated employee contributions with interest (§31628) or entitled to earned benefits commencing anytime after eligible to retire (§31629.5) if eligible for benefits at a reciprocal system.
Five or More Years of Service	If contributions left on deposit, a member is entitled to earned benefits commencing at any time after eligible to retire (§31700). Service for eligibility includes service credited as an employee of a reciprocal system.
Post-retirement Cost-of-Living Benefits:	Future changes based on changes to the Consumer Price Index to a maximum of 2.50% per year. (§31870.4)
Supplemental Retiree Benefit Reserve:	The Association provides Supplemental Retiree Benefit Reserve benefits for eligible retirees. These benefits have been excluded from this valuation.

Member Contributions:	Please refer to *Section 4, Exhibit III* for the specific rates. Members in General Tiers I and IIA (excluding San Joaquin Valley Unified Air Pollution Control District) and Safety Tiers I and IIA do not contribute towards the cost-of-living benefits.
General Tier I (non-SJVAPCD)	
Basic	Entry age based rates that provide for an average annuity at age 55 equal to 1/100 of FAS (§31621.8).
General Tier I (SJVAPCD)	
Basic	Entry age based rates that provide for 50% of total Normal Cost Rate.
General Tier IIA (non-SJVAPCD)	
Basic	Entry age based rates that provide for an average annuity at age 60 equal to 1/120 of FAS (§31621).
General Tier IIA (SJVAPCD)	
Basic	Entry age based rates that provide for 50% of total Normal Cost Rate.
General Tiers IIB and III	Non-entry age based rates that provide for 50% of total Normal Cost Rate.
Safety Tier I	
Basic	Entry age based rates that provide for an average annuity at age 50 equal to 1/100 of FAS (§31639.25).
Supplemental	Entry age based rates that provide for an average annuity at age 50 equal to 1/200 of FAS (Resolution #2004-144).
Safety "3" Tier I	
Basic and Supplemental	At all entry ages, the member contribution rate for the above Safety Tier I members who enter the plan at age 27.
Safety Tier IIA	
Basic	Entry age based rates that provide for an average annuity at age 50 equal to 1/100 of FAS (§31639.25).
Safety "3" Tier IIA	
Basic	At all entry ages, the member contribution rate for the above Safety Tier IIA members who enter the plan at age 27.
Safety Tier IIB	Non-entry age based rates that provide for 50% of total Normal Cost Rate.
Other Information:	Safety Tier I and Tier IIA members with 30 or more years of service are exempt from paying member contributions. Various other exemptions for member contributions are outlined on pages 35 through 39.
Changed Plan Provisions:	There have been no changes in plan provisions since the last valuation.

Note: The summary of major plan provisions is designed to outline principal 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 the actuary so they can both be sure the proper provisions are valued.

EXHIBIT III – MEMBER CONTRIBUTION RATES

General Tier I Members' (non-SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation
(Expressed as a Percentage of Monthly Compensation)

	Integrated		Non-Integrated
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation	All Compensation
16	4.21%	6.32%	6.32%
17	4.29%	6.44%	6.44%
18	4.37%	6.56%	6.56%
19	4.45%	6.68%	6.68%
20	4.54%	6.81%	6.81%
21	4.62%	6.93%	6.93%
22	4.71%	7.06%	7.06%
23	4.79%	7.19%	7.19%
24	4.88%	7.32%	7.32%
25	4.97%	7.46%	7.46%
26	5.07%	7.60%	7.60%
27	5.16%	7.74%	7.74%
28	5.25%	7.88%	7.88%
29	5.35%	8.02%	8.02%
30	5.45%	8.17%	8.17%
31	5.55%	8.32%	8.32%
32	5.65%	8.48%	8.48%
33	5.76%	8.64%	8.64%
34	5.87%	8.80%	8.80%
35	5.97%	8.96%	8.96%
36	6.09%	9.13%	9.13%
37	6.21%	9.31%	9.31%
38	6.33%	9.49%	9.49%
39	6.45%	9.67%	9.67%

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier I Members' (non-SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation (continued)
(Expressed as a Percentage of Monthly Compensation)

	Integrated		Non-Integrated
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation	All Compensation
40	6.57%	9.86%	9.86%
41	6.70%	10.05%	10.05%
42	6.83%	10.24%	10.24%
43	6.95%	10.43%	10.43%
44	7.08%	10.62%	10.62%
45	7.21%	10.81%	10.81%
46	7.33%	10.99%	10.99%
47	7.44%	11.16%	11.16%
48	7.53%	11.29%	11.29%
49	7.60%	11.40%	11.40%
50	7.67%	11.51%	11.51%
51	7.72%	11.58%	11.58%
52	7.75%	11.62%	11.62%
53	7.75%	11.63%	11.63%
54 & Over	7.69%	11.54%	11.54%

Interest:	7.25% per annum
COLA:	None
Administrative Expense	0.11% of payroll added to Basic rates.
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (3.00%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit I*)

Note: These rates are determined before any pickups by the employer, if any.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier I Members' (SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
16	9.17%
17	9.35%
18	9.52%
19	9.70%
20	9.89%
21	10.06%
22	10.25%
23	10.44%
24	10.63%
25	10.84%
26	11.04%
27	11.25%
28	11.45%
29	11.66%
30	11.87%
31	12.09%
32	12.33%
33	12.56%
34	12.79%
35	13.03%
36	13.28%
37	13.54%
38	13.80%
39	14.06%

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier I Members' (SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation (continued)
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
40	14.34%
41	14.62%
42	14.90%
43	15.17%
44	15.45%
45	15.73%
46	15.99%
47	16.24%
48	16.43%
49	16.59%
50	16.75%
51	16.85%
52	16.91%
53	16.92%
54 & Over	16.79%

The General Tier I (SJVAPCD) member contribution rate is 50% of the total Normal Cost rate. The rates shown above also include an administrative expense load of 0.11% of payroll.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier IIA Members' (non-SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

	Integrated		Non-Integrated
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation	All Compensation
16	3.03%	4.55%	4.55%
17	3.09%	4.64%	4.64%
18	3.15%	4.72%	4.72%
19	3.21%	4.81%	4.81%
20	3.27%	4.90%	4.90%
21	3.33%	4.99%	4.99%
22	3.39%	5.09%	5.09%
23	3.45%	5.18%	5.18%
24	3.52%	5.28%	5.28%
25	3.58%	5.37%	5.37%
26	3.65%	5.47%	5.47%
27	3.71%	5.57%	5.57%
28	3.79%	5.68%	5.68%
29	3.85%	5.78%	5.78%
30	3.93%	5.89%	5.89%
31	3.99%	5.99%	5.99%
32	4.07%	6.10%	6.10%
33	4.15%	6.22%	6.22%
34	4.22%	6.33%	6.33%
35	4.30%	6.45%	6.45%
36	4.38%	6.57%	6.57%
37	4.46%	6.69%	6.69%
38	4.54%	6.81%	6.81%
39	4.63%	6.94%	6.94%

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier IIA Members' (non-SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation (continued)
(Expressed as a Percentage of Monthly Compensation)

	Integrated		Non-Integrated
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation	All Compensation
40	4.71%	7.07%	7.07%
41	4.80%	7.20%	7.20%
42	4.89%	7.34%	7.34%
43	4.99%	7.48%	7.48%
44	5.08%	7.62%	7.62%
45	5.19%	7.78%	7.78%
46	5.29%	7.93%	7.93%
47	5.38%	8.07%	8.07%
48	5.48%	8.22%	8.22%
49	5.58%	8.37%	8.37%
50	5.68%	8.52%	8.52%
51	5.77%	8.66%	8.66%
52	5.86%	8.79%	8.79%
53	5.93%	8.89%	8.89%
54	5.99%	8.99%	8.99%
55	6.05%	9.07%	9.07%
56	6.09%	9.13%	9.13%
57	6.11%	9.16%	9.16%
58	6.11%	9.17%	9.17%
59 & Over	6.06%	9.09%	9.09%

Interest:	7.25% per annum
COLA:	None
Administrative Expense	0.11% of payroll added to Basic rates.
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (3.00%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit I*)

Note: These rates are determined before any pickups by the employer, if any.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier IIA Members' (SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
16	4.63%
17	4.72%
18	4.80%
19	4.89%
20	4.98%
21	5.07%
22	5.17%
23	5.27%
24	5.37%
25	5.46%
26	5.56%
27	5.66%
28	5.77%
29	5.88%
30	5.99%
31	6.09%
32	6.20%
33	6.32%
34	6.44%
35	6.56%
36	6.68%
37	6.80%
38	6.92%
39	7.06%

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier IIA Members' (SJVAPCD) Contribution Rates from the June 30, 2019 Actuarial Valuation (continued)
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
40	7.19%
41	7.32%
42	7.46%
43	7.61%
44	7.75%
45	7.91%
46	8.06%
47	8.21%
48	8.36%
49	8.51%
50	8.66%
51	8.81%
52	8.94%
53	9.04%
54	9.14%
55	9.22%
56	9.28%
57	9.31%
58	9.32%
59 & Over	9.24%

The General Tier IIA (SJVAPCD) member contribution rate is 50% of the total Normal Cost rate. The rates shown above also include an administrative expense load of 0.11% of payroll.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

General Tier IIB Members' Contribution Rates from the June 30, 2019 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

	Integrated		Non-Integrated
All Members	First $350 of Monthly Compensation	Over $350 of Monthly Compensation	All Compensation
Basic	3.33%	5.00%	5.00%
2% COLA	0.72%	1.08%	1.08%
0.5% COLA	0.22%	0.33%	0.33%
Total	4.27%	6.41%	6.41%

The General Tier IIB member contribution rate is 50% of the total Normal Cost rate. The rates shown above also include an administrative expense load of 0.11% of payroll.

General Tier III Members' Contribution Rates from the June 30, 2019 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

All Members	All Compensation[1]
Basic	5.75%
2% COLA	1.18%
0.5% COLA	0.37%
Total	7.30%

The General Tier III member contribution rate is 50% of the total Normal Cost rate. The rates shown above also include an administrative expense load of 0.11% of payroll.

(1) It is our understanding that in the determination of pension benefits under the General Tier III formula, the compensation that can be taken into account for 2019 is $124,180 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2019 (reference: Section 7522.10(d)).

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

Safety Tier I Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2019 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

	Integrated	
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation
16	7.45%	11.17%
17	7.59%	11.38%
18	7.73%	11.60%
19	7.88%	11.82%
20	8.03%	12.05%
21	8.19%	12.28%
22	8.35%	12.52%
23	8.51%	12.76%
24	8.67%	13.01%
25	8.84%	13.26%
26	9.01%	13.52%
27	9.19%	13.79%
28	9.38%	14.07%
29	9.57%	14.35%
30	9.76%	14.64%
31	9.95%	14.93%
32	10.15%	15.23%
33	10.35%	15.52%
34	10.55%	15.83%
35	10.76%	16.14%
36	10.97%	16.46%
37	11.19%	16.79%
38	11.42%	17.13%
39	11.63%	17.45%

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

Safety Tier I Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2019 Actuarial Valuation (continued)
(Expressed as a Percentage of Monthly Compensation)

	Integrated	
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation
40	11.84%	17.76%
41	12.04%	18.06%
42	12.18%	18.27%
43	12.29%	18.43%
44	12.38%	18.57%
45	12.45%	18.67%
46	12.49%	18.74%
47	12.45%	18.67%
48	12.34%	18.51%
49 & Over	12.05%	18.08%

Interest:	7.25% per annum
COLA:	None
Administrative Expense	0.11% of payroll added to Basic rates.
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (3.00%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit I*)

Note: These rates are determined before any pickups by the employer, if any.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

“Safety 3” Safety Tier I Members' Contribution Rates from the June 30, 2019 Actuarial Valuation
(Expressed as a Percentage of Monthly Compensation)

	Integrated	
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation
Every	9.19%	13.79%

Interest:	7.25% per annum
COLA:	None
Administrative Expense	0.11% of payroll added to Basic rates.
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (3.00%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit I*)

Note: Beginning at various dates throughout 2007, certain Safety bargaining units converted to a new schedule of contribution rates, referred to as “Safety 3” contribution rates. For employees falling under this category and hired after the appropriate date (which varies by bargaining unit), the contribution rate will be a flat percentage of pay regardless of entry age. Based on the most recent Actuarial Experience Study, the contribution rates shown above are based on an entry age of 27. This is expected to provide for the same value of contributions that would be made based on the specific entry age based rates shown on the previous two pages. These rates are determined before any pickups by the employer.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

Safety Tier IIA Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2019 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

	Integrated	
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation
16	4.99%	7.48%
17	5.08%	7.62%
18	5.18%	7.77%
19	5.28%	7.92%
20	5.38%	8.07%
21	5.48%	8.22%
22	5.59%	8.38%
23	5.69%	8.54%
24	5.81%	8.71%
25	5.92%	8.88%
26	6.03%	9.05%
27	6.15%	9.23%
28	6.28%	9.42%
29	6.41%	9.61%
30	6.53%	9.80%
31	6.66%	9.99%
32	6.79%	10.19%
33	6.93%	10.39%
34	7.06%	10.59%
35	7.20%	10.80%
36	7.34%	11.01%
37	7.49%	11.23%
38	7.63%	11.45%
39	7.78%	11.67%

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

Safety Tier IIA Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2019 Actuarial Valuation (continued)
(Expressed as a Percentage of Monthly Compensation)

	Integrated	
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation
40	7.92%	11.88%
41	8.05%	12.08%
42	8.15%	12.22%
43	8.21%	12.32%
44	8.28%	12.42%
45	8.32%	12.48%
46	8.35%	12.53%
47	8.32%	12.48%
48	8.25%	12.37%
49 & Over	8.06%	12.09%

Interest:	7.25% per annum
COLA:	None
Administrative Expense	0.11% of payroll added to Basic rates.
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (3.00%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit I*)

Note: These rates are determined before any pickups by the employer, if any.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

"Safety 3" Safety Tier IIA Members' Contribution Rates from the June 30, 2019 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

	Integrated	
Entry Age	First $350 of Monthly Compensation	Over $350 of Monthly Compensation
Every	6.15%	9.23%

Interest:	7.25% per annum
COLA:	None
Administrative Expense	0.11% of payroll added to Basic rates.
Mortality:	See *Section 4, Exhibit I*
Salary Increase:	Inflation (3.00%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit I*)

Note: Beginning at various dates throughout 2007, certain Safety bargaining units converted to a new schedule of contribution rates, referred to as "Safety 3" contribution rates. For employees falling under this category and hired after the appropriate date (which varies by bargaining unit), the contribution rate will be a flat percentage of pay regardless of entry age. Based on the most recent Actuarial Experience Study, the contribution rates shown above are based on an entry age of 27. This is expected to provide for the same value of contributions that would be made based on the specific entry age based rates shown on the previous two pages. These rates are determined before any pickups by the employer.

EXHIBIT III – MEMBER CONTRIBUTION RATES (CONTINUED)

Safety Tier IIB Members' Contribution Rates from the June 30, 2019 Actuarial Valuation
(Expressed as a Percentage of Monthly Compensation)

	Integrated	
All Members	First $350 of Monthly Compensation	Over $350 of Monthly Compensation
Basic	7.16%	10.74%
2% COLA	1.81%	2.72%
0.5% COLA	0.59%	0.88%
Total	9.56%	14.34%

The SafetyTier IIB member contribution rate is 50% of the total Normal Cost rate. The rates shown above also include an administrative expense load of 0.11% of payroll.

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December 4, 2019

Mr. Dominic Brown
Executive Director
Kern County Employees' Retirement Association
11125 River Run Boulevard
Bakersfield, CA 93311

Re: Inyokern Community Services District
Impact of Declining Employer Payroll Policy
Based on June 30, 2019 Actuarial Valuation

Dear Dominic:

As requested, we have prepared information regarding the impact of the Declining Employer Payroll Policy (Policy) on the Inyokern Community Services District (Inyokern). In August 2019, the Retirement Board determined that a triggering event occurred during the 2019-20 fiscal year, resulting from this employer ceasing to enroll new hires and/or a material and expected long-lasting reduction in KCERA covered payroll.

We have determined the Valuation Value of Assets (VVA), Actuarial Accrued Liability (AAL) and resulting Unfunded Actuarial Accrued Liability (UAAL) that have been allocated to Inyokern as of June 30, 2019 based on the Policy. We have also included the employer contribution amounts for Inyokern that would result from application of the Policy. These contribution amounts are also shown in the Actuarial Valuation and Review as of June 30, 2019.

Note that our letter dated April 17, 2019 included an illustration of the impact of the Policy on this employer. That illustration assumed that a triggering event occurred during the 2018-19 fiscal year.

Summary of Results

After applying the Policy, we have determined Inyokern's UAAL to be as follows as of June 30, 2019:

Inyokern	
Unfunded Actuarial Accrued Liability as of June 30, 2019	$102,000

The Policy requires that the employer contribution to pay off the UAAL be made in level dollar amounts over a period not to exceed eighteen years. We have amortized Inyokern's UAAL as a single layer over an 18-year period.

A comparison of the demographics of Inyokern as of June 30, 2019 and June 30, 2018 is provided in Exhibit A. The following table is a summary comparison of the average contribution rates for both employers and members before and after application of the Policy.

Inyokern[1]				
	Before		After	
	Rate	Estimated Annual Amount[2] ($ in '000s)	Rate	Estimated Annual Amount[2] ($ in '000s)
Average Employer Rate				
Normal Cost	18.68%	$0	N/A	$0
UAAL	31.32%	0	N/A	11[3]
Total Contributions	50.00%	$0	N/A	$11[4]
Average Member Rate	N/A	$0	N/A	$0

(1) There are no active members at Inyokern. Therefore, there is no Normal Cost rate after application of the Policy and no average member rate either before or after application of the Policy.

(2) Based on June 30, 2019 projected compensation of $0.

(3) The annual UAAL contribution in dollars of $11,000 for Inyokern is equal to an 18-year level dollar amortization of the $102,000 in UAAL of $10,000 plus $0 in administrative expenses plus a $1,000 adjustment due to the 12-month delay between the valuation date and the plan year beginning July 1, 2020.

(4) Inyokern should contribute based on the dollar amounts shown. These contribution amounts assume payment throughout the 2020-21 plan year.

The average employer contribution for Inyokern increases after application of the Policy. As described in more detail in the next section, this is due to Inyokern being allocated UAAL under the Policy as compared to not being allocated any UAAL under KCERA's funding policy for ongoing employers.

DECLINING PAYROLL METHODOLOGY

Based on the methodology described in the Policy, a participating employer that has a triggering event, such as ceasing to enroll new hires or a material and expected long-lasting reduction in KCERA covered payroll, would be allocated a pro-rata share of the total UAAL for their cost group. That pro-rata share would be allocated based on the employer's AAL including inactive and deferred members as compared to the AAL for all the employers within the same cost group.

The initial VVA is determined by a pro-rata allocation based on the employer's initial AAL to the AAL for all the employers within that cost group. The initial UAAL is the initial AAL minus the initial VVA. The detailed calculations of the UAAL for Inyokern based on applying the Policy are shown in Exhibit B.

ASSUMPTIONS USED IN CALCULATIONS

Unless otherwise noted, all of the above calculations are based on the June 30, 2019 actuarial valuation results including the participant data and actuarial assumptions on which that valuation was based. That valuation and these calculations were completed under the supervision of John Monroe, ASA, MAAA, Enrolled Actuary.

The undersigned are Members of the American Academy of Actuaries and meet the qualification requirements to render the actuarial opinion contained herein.

Please let us know if you have any questions.

Sincerely,

Paul Angelo, FSA, EA, MAAA, FCA	John Monroe, ASA, EA, MAAA
Senior Vice President and Actuary	Vice President and Actuary

/bbf
Enclosures

Exhibit A

Table of Plan Coverage
Inyokern Community Services District

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
Number	0	0	N/A
Average age	N/A	N/A	N/A
Average years of service	N/A	N/A	N/A
Total projected compensation	N/A	N/A	N/A
Average projected compensation	N/A	N/A	N/A
Account balances	N/A	N/A	N/A
Total active vested members	N/A	N/A	N/A
Inactive vested members:[(1)]			
Number	1	1	0.0%
Average age	45.8	44.8	1.0
Retired members:			
Number in pay status	1	1	0.0%
Average age	51.4	50.4	1.0
Average monthly benefit[(2)]	$328	$320	2.5%
Disabled members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit[(2)]	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[(2)]	N/A	N/A	N/A

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

Exhibit B

INYOKERN COMMUNITY SERVICES DISTRICT ALLOCATED INITIAL UAAL AFTER TRIGGERING EVENT

Inyokern's current and former employees are currently included in KCERA's District cost group. Also included in that cost group are members from other Districts. As of June 30, 2019, there were 0 actives, 1 deferred vested, 1 service retirees, 0 disabled retirees and 0 beneficiaries with Inyokern. Exhibit A contains a detailed summary of the demographics of these members.

Based on the methodology described in the Policy, a participating employer that has a triggering event, such as ceasing to enroll new hires or a material and expected long-lasting reduction in KCERA covered payroll, would be allocated a pro-rata share of the total UAAL for their cost group. That pro-rata share would be allocated based on the employer's AAL including inactive and deferred members as compared to the AAL for all the employers within the same cost group.

The initial VVA is determined by a pro-rata allocation based on Inyokern's initial AAL to the AAL for all the employers within that cost group. The initial UAAL is the initial AAL minus the initial VVA. Here are the specific steps involved in the determination of the UAAL for Inyokern:

Step 1: Determine the AAL for Inyokern as of June 30, 2019

The June 30, 2019 AAL of Inyokern was calculated using the membership data for Inyokern as of the same date. Inyokern's AAL as of June 30, 2019 was $241,000.[1]

Step 2: Determine the VVA for Inyokern as of June 30, 2019

We have allocated a pro-rata share of the VVA to Inyokern. That pro-rata share was calculated by dividing the AAL for Inyokern by the AAL for all the employers within the District cost group. This method explicitly assumes that liabilities for all employers in the cost group are funded to the same degree (i.e., same funded ratio).

Under that method, Inyokern's portion of the VVA as of June 30, 2019 would be determined in the proportion that the June 30, 2019 AAL for Inyokern bears to the AAL of all employers in the District cost group. The total VVA for the District cost group as of June 30, 2019 was $204,525,000. The June 30, 2019 AAL for Inyokern was $241,000 while the AAL for all employers in the District cost group was $353,697,000.

Accordingly, the total VVA for Inyokern's members as of June 30, 2019 was $139,000.[2] This is determined by multiplying the total VVA for the District cost group of $204,525,000 by the ratio of the June 30, 2019 AAL for Inyokern of $241,000 to the AAL for all employers in the District cost group of $353,697,000. In the future, this amount will be rolled forward each year using the actual contributions and benefit payments for Inyokern and the actual (smoothed) return for all KCERA assets.

Step 3: Determine the UAAL for Inyokern as of June 30, 2019

---

[1] Assumes none of the transfer liability from the County will be allocated to Inyokern.

[2] This has been rounded to the nearest $1,000.

Exhibit B

Inyokern's UAAL as of June 30, 2019 is equal to:

- The AAL for Inyokern's actives, deferred vested, retirees and beneficiaries as of June 30, 2019

MINUS

- The VVA allocated to Inyokern as of the same date

The estimated UAAL for Inyokern as determined under the Declining Employer Payroll Policy as of June 30, 2019 would be Inyokern's AAL minus their VVA, i.e., $241,000 - $139,000, or $102,000.

The VVA would be subtracted from the AAL as of each future valuation date to determine the updated total Inyokern UAAL. A new UAAL layer would then be calculated based on the difference between that updated total UAAL amount and the outstanding balance of the current UAAL layer(s). Each new UAAL layer would be amortized as a level dollar amount over an 18-year period.

Exhibit C

Table of Amortization Bases
Inyokern Community Services District

Date Established	Source	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Amortization Amount[1] ($ in '000s)
Inyokern						
June 30, 2019	Restart Amortization	$102	18	$102	18	$10
Inyokern Total				**$102**		**$10**

[1] Assumes payments throughout the year, calculated as a level dollar amount.

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December 4, 2019

Mr. Dominic Brown
Executive Director
Kern County Employees' Retirement Association
11125 River Run Boulevard
Bakersfield, CA 93311

Re: Berrenda Mesa Water District
Impact of Declining Employer Payroll Policy
Based on June 30, 2019 Actuarial Valuation

Dear Dominic:

As requested, we have prepared information regarding the impact of the Declining Employer Payroll Policy (Policy) on the Berrenda Mesa Water District (Berrenda Mesa). In August 2019, the Retirement Board determined that a triggering event occurred during the 2019-20 fiscal year, resulting from this employer ceasing to enroll new hires and/or a material and expected long-lasting reduction in KCERA covered payroll.

We have determined the Valuation Value of Assets (VVA), Actuarial Accrued Liability (AAL) and resulting Unfunded Actuarial Accrued Liability (UAAL) that have been allocated to Berrenda Mesa as of June 30, 2019 based on the Policy. We have also included the employer contribution amounts for Berrenda Mesa that would result from application of the Policy. These contribution amounts are also shown in the Actuarial Valuation and Review as of June 30, 2019.

Note that our letter dated April 17, 2019 included an illustration of the impact of the Policy on this employer. That illustration assumed that a triggering event occurred during the 2018-19 fiscal year.

Summary of Results

After applying the Policy, we have determined Berrenda Mesa's UAAL to be as follows as of June 30, 2019:

Berrenda Mesa	
Unfunded Actuarial Accrued Liability as of June 30, 2019	$4,147,000

The Policy requires that the employer contribution to pay off the UAAL be made in level dollar amounts over a period not to exceed eighteen years. We have amortized Berrenda Mesa's UAAL as a single layer over an 18-year period. We have also recalculated the employer Normal Cost rate and average member contribution rate for Berrenda Mesa based only on the demographics of Berrenda Mesa's current active members.

A comparison of the demographics of Berrenda Mesa as of June 30, 2019 and June 30, 2018 is provided in Exhibit A. The following table is a summary comparison of the average contribution rates for both employers and members before and after application of the Policy.

Berrenda Mesa	Before		After	
	Rate	Estimated Annual Amount[1] ($ in '000s)	Rate	Estimated Annual Amount[1] ($ in '000s)
Average Employer Rate				
Normal Cost	18.68%	$30	17.50%	$28
UAAL	31.32%	50	273.89%	441[2]
Total Contributions	50.00%	$80	291.39%	$469[3]
Average Member Rate	5.70%	$9	5.70%	$9

(1) Based on June 30, 2019 projected compensation of $161,000.

(2) The annual UAAL contribution in dollars of $441,000 for Berrenda Mesa is equal to an 18-year level dollar amortization of the $4,147,000 in UAAL of $406,000 plus $1,000 in administrative expenses plus a $34,000 adjustment due to the 12-month delay between the valuation date and the plan year beginning July 1, 2020.

(3) Berrenda Mesa should contribute based on the dollar amounts shown (not rates). These contribution amounts assume payment throughout the 2020-21 plan year.

The average employer rate for Berrenda Mesa increases when expressed as a percentage of Berrenda Mesa's payroll after application of the Policy. As described in more detail in the next section, this is due to Berrenda Mesa being allocated a larger portion of the UAAL under the Policy than under KCERA's funding policy for ongoing employers. It is also partially due to amortizing the Berrenda Mesa's UAAL as a level dollar amount instead of the current level percent of payroll method. Over time, the employer contribution to pay off the UAAL would be expected to remain level as a dollar amount, but would increase when expressed as a percent of their declining covered payroll.

The UAAL and employer contribution amounts for this employer are higher than that shown in our previous letter dated April 17, 2019 that included an illustration of the impact of the Policy based on the previous actuarial valuation. This increase is primarily due to a deferred vested member with reciprocity retiring with a significantly larger benefit than expected.

For the average member rates, there are no differences after applying the Policy.

DECLINING PAYROLL METHODOLOGY

Based on the methodology described in the Policy, a participating employer that has a triggering event, such as ceasing to enroll new hires or a material and expected long-lasting reduction in KCERA covered payroll, would be allocated a pro-rata share of the total UAAL for their cost group. That pro-rata share would be allocated based on the employer's AAL including inactive and deferred members as compared to the AAL for all the employers within the same cost group. Note that this means that the initial UAAL payments for the employer would no longer be allocated in proportion to its covered payroll (which is expected to decline), but rather in proportion to its AAL.

The initial VVA is determined by a pro-rata allocation based on the employer's initial AAL to the AAL for all the employers within that cost group. The initial UAAL is the initial AAL minus the initial VVA. The detailed calculations of the UAAL for Berrenda Mesa based on applying the Policy are shown in Exhibit B.

ASSUMPTIONS USED IN CALCULATIONS

Unless otherwise noted, all of the above calculations are based on the June 30, 2019 actuarial valuation results including the participant data and actuarial assumptions on which that valuation was based. That valuation and these calculations were completed under the supervision of John Monroe, ASA, MAAA, Enrolled Actuary.

The undersigned are Members of the American Academy of Actuaries and meet the qualification requirements to render the actuarial opinion contained herein.

Please let us know if you have any questions.

Sincerely,

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

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

JAC/bbf
Enclosures

Exhibit A

Table of Plan Coverage
Berrenda Mesa Water District

Category	Year Ended June 30		Change From Prior Year
	2019	2018	
Active members in valuation:			
Number	3	4	-25.0%
Average age	47.0	48.5	-1.5
Average years of service	18.4	22.4	-4.0
Total projected compensation	$161,254	$211,791	-23.9%
Average projected compensation	$53,751	$52,948	1.5%
Account balances	$195,160	$496,210	-60.7%
Total active vested members	3	4	-25.0%
Inactive vested members:[(1)]			
Number	0	2	N/A
Average age	N/A	57.1	N/A
Retired members:			
Number in pay status	12	9	33.3%
Average age	67.2	69.3	-2.1
Average monthly benefit[(2)]	$4,678	$4,287	9.1%
Disabled members:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit[(2)]	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	2	2	0.0%
Average age	67.6	66.6	1.0
Average monthly benefit[(2)]	$1,173	$1,151	1.9%

(1) Includes inactive members due a refund of member contributions.

(2) Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

Exhibit B

BERRENDA MESA WATER DISTRICT ALLOCATED INITIAL UAAL AFTER TRIGGERING EVENT

Berrenda Mesa's current and former employees are currently included in KCERA's District cost group. Also included in that cost group are members from other Districts. As of June 30, 2019, there were 3 actives, 0 deferred vested, 12 service retirees, 0 disabled retirees and 2 beneficiaries with Berrenda Mesa. Exhibit A contains a detailed summary of the demographics of these members.

Based on the methodology described in the Policy, a participating employer that has a triggering event, such as ceasing to enroll new hires or a material and expected long-lasting reduction in KCERA covered payroll, would be allocated a pro-rata share of the total UAAL for their cost group. That pro-rata share would be allocated based on the employer's AAL including inactive and deferred members as compared to the AAL for all the employers within the same cost group. Note that this means that the initial UAAL payments for the employer would no longer be allocated in proportion to its covered payroll (which is expected to decline), but rather in proportion to its AAL.

The initial VVA is determined by a pro-rata allocation based on Berrenda Mesa's initial AAL to the AAL for all the employers within that cost group. The initial UAAL is the initial AAL minus the initial VVA. Here are the specific steps involved in the determination of the UAAL for Berrenda Mesa:

Step 1: Determine the AAL for Berrenda Mesa as of June 30, 2019

The June 30, 2019 AAL of Berrenda Mesa was calculated using the membership data for Berrenda Mesa as of the same date. Berrenda Mesa's AAL as of June 30, 2019 was $9,834,000.[1]

Step 2: Determine the VVA for Berrenda Mesa as of June 30, 2019

We have allocated a pro-rata share of the VVA to Berrenda Mesa. That pro-rata share was calculated by dividing the AAL for Berrenda Mesa by the AAL for all the employers within the District cost group. This method explicitly assumes that liabilities for all employers in the cost group are funded to the same degree (i.e., same funded ratio).

Under that method, Berrenda Mesa's portion of the VVA as of June 30, 2019 would be determined in the proportion that the June 30, 2019 AAL for Berrenda Mesa bears to the AAL of all employers in the District cost group. The total VVA for the District cost group as of June 30, 2019 was $204,525,000. The June 30, 2019 AAL for Berrenda Mesa was $9,834,000 while the AAL for all employers in the District cost group was $353,697,000.

---

[1] This amount has been reduced by $3,000 in transfer liability from Berrenda Mesa to the County and assumes none of the transfer liability from the County will be allocated to Berrenda Mesa.

Accordingly, the total VVA for Berrenda Mesa's members as of June 30, 2019 was $5,687,000.[2] This is determined by multiplying the total VVA for the District cost group of $204,525,000 by the ratio of the June 30, 2019 AAL for Berrenda Mesa of $9,834,000 to the AAL for all employers in the District cost group of $353,697,000. In the future, this amount will be rolled forward each year using the actual contributions and benefit payments for Berrenda Mesa, and the actual (smoothed) return for all KCERA asssets.

Step 3: Determine the UAAL for Berrenda Mesa as of June 30, 2019

Berrenda Mesa's UAAL as of June 30, 2019 is equal to:

- The AAL for Berrenda Mesa's actives, deferred vested, retirees and beneficiaries as of June 30, 2019

MINUS

- The VVA allocated to Berrenda Mesa as of the same date

The estimated UAAL for Berrenda Mesa as determined under the Declining Employer Payroll Policy as of June 30, 2019 would be Berrenda Mesa's AAL minus their VVA, i.e., $9,834,000 - $5,687,000, or $4,147,000.

The VVA would be subtracted from the AAL as of each future valuation date to determine the updated total Berrenda Mesa UAAL. A new UAAL layer would then be calculated based on the difference between that updated total UAAL amount and the outstanding balance of the current UAAL layer(s). Each new UAAL layer would be amortized as a level dollar amount over an 18-year period.

[2] This has been rounded to the nearest $1,000.

Exhibit C

Table of Amortization Bases
Berrenda Mesa Water District

Date Established	Source	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Amortization Amount[1] ($ in '000s)
Berrenda Mesa						
June 30, 2019	Restart Amortization	$4,147	18	$4,147	18	$406
Berrenda Mesa Total				**$4,147**		**$406**

[1] Assumes payments throughout the year, calculated as a level dollar amount.

Segal Consulting

Kern County Employees' Retirement Association

Supplemental Retiree Benefit Reserve (SRBR)

Actuarial Valuation and Review as of June 30, 2019

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December 3, 2019

Board of Retirement
Kern County Employees' Retirement Association
11125 River Run Boulevard
Bakersfield, California 93311

Dear Board Members:

We are pleased to submit this Supplemental Retiree Benefit Reserve (SRBR) Actuarial Valuation and Review as of June 30, 2019. It summarizes the actuarial data used in the SRBR valuation, analyzes the preceding year's experience, and determines the funding status of the SRBR benefits.

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

The actuarial calculations were directed under the supervision of John Monroe, ASA, MAAA and Enrolled Actuary. 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 this 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 Association.

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:

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

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

JAC/hy

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Table of Contents

Kern County Employees' Retirement Association SRBR Actuarial Valuation and Review as of June 30, 2019

Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal Consulting ("Segal") to present a valuation of the Kern County Employees' Retirement Association ("KCERA" or "the Association") Supplemental Retiree Benefit Reserve (SRBR) benefits as of June 30, 2019. The valuation was performed to determine the funding status of the SRBR benefits. The measurements shown in this actuarial valuation may not be applicable for other purposes. In particular, the measures herein are not necessarily appropriate for assessing the sufficiency of current plan assets to cover the estimated cost of settling the plan's accrued benefit obligations.

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; and changes in plan provisions or applicable law.

The funded status information presented in this report are based on:

- The benefit provisions of the SRBR, as administered by KCERA;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2019, provided by KCERA;
- The SRBR Reserve value as of June 30, 2019, provided by KCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Retirement Board for the June 30, 2019 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Retirement Board for the June 30, 2019 valuation; and
- The SRBR policy adopted by the Board of Retirement.

Note that the investment return assumption of 7.25% used in this report was determined without taking into consideration any impact of the 50/50 excess earnings allocation between the retirement and SRBR asset pools. More details regarding this can be found in the actuarial valuation for funding purposes.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions to evaluate the Association's liabilities associated with the SRBR benefits. 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 prior year's information.

Significant Issues

1. Under the Board's SRBR policy, the SRBR funding status is calculated by comparing the SRBR Reserve excluding the court ordered Allocated SRBR Reserve (i.e., the 0.5% COLA Reserve), to the current actuarial funding target, which is the present value of all projected future SRBR benefit payments for all KCERA's current plan members.

2. Additional or increased SRBR benefits may be adopted if the PVB for the SRBR benefits is more than 120% funded in the last two consecutive valuations. In addition, the SRBR policy also describes certain conditions that should be considered prior to adopting additional or increased SRBR benefits. These conditions include the funding status of the SRBR benefits, the potential impact of any deferred investment gains or losses not yet recognized in the asset smoothing method and any recent or potential changes in actuarial assumptions.

3. The funding status of the SRBR benefits decreased slightly from 147.4% as of June 30, 2018 to 146.9% as of June 30, 2019 prior to reflecting any deferred investment gains or losses. The funding status of the SRBR benefits is 144.4% as of June 30, 2019 after reflecting any deferred investment gains or losses as of the same date.

4. The slight decrease in the funding status for the SRBR benefits was due an investment loss, since the rate of return on the available SRBR (after smoothing) during 2018-2019 was about 4.5%, which is less than the 7.25% assumption used in the June 30, 2018 valuation and an inflation loss. These losses were offset to some extent by the passage of time (i.e., expected changes in the funding status) and other liability gains.

5. In the June 30, 2018 valuation, we assumed that the Consumer Price Index (CPI) would increase by 3.00% from 2017 to 2018, based on our long-term assumption for inflation used in that valuation. The actual increase in the CPI from 2017 to 2018 was 3.8%. Because the CPI increased by more than 2.5% (the maximum COLA possible), COLA bank balances were increased. Current SRBR Tier 3 benefits generally stayed the same because CPI increases in recent years were lower than the COLA increases for most retirees.

6. The following table compares the reserves and liabilities for the SRBR benefits as of June 30, 2018 and of June 30, 2019:

	June 30, 2019	June 30, 2018
1. Available SRBR Reserves		
a. Total SRBR	$168,536,000	$177,089,000
b. 0.5% COLA Account	41,991,000	49,370,000
c. Available SRBR Reserve (1.a. – 1.b.)	$126,545,000	$127,719,000
2. Present Value of SRBR Benefits		
a. Approved Benefits	$83,027,000	$83,748,000
b. Future Benefits	3,126,000	2,916,000
c. Total (2.a. + 2.b.)	$86,153,000	$86,664,000
3. PVB minus Reserves (2.c.) – (1.c.)	-$40,392,000	-$41,055,000
4. Funding Ratio (1.c.) ÷ (2.c.)	146.9%	147.4%

7. As of the June 30, 2019 valuation, the net deferred investment losses were 1.7% of the market value of assets. The Board's SRBR policy requires that the funding status be more than 120% in two consecutive valuations prior to implementing any benefit increases, taking into account the current status of deferred investment gains and losses not yet recognized under the asset smoothing method. Consistent with this requirement, we have reduced the available SRBR Reserve by this amount to account for these losses. The results before and after reflecting the deferred investment losses are as follows:

	June 30, 2019 After Reflecting Deferred Losses	June 30, 2019 Before Reflecting Deferred Losses
1. Available SRBR Reserves	$124,444,000	$126,545,000
2. Present Value of SRBR Benefits	$86,153,000	$86,153,000
3. PVB minus Reserves (2.) – (1.)	-$38,291,000	-$40,392,000
4. Funding Ratio (1.) ÷ (2.)	144.4%	146.9%

8. The Actuarial Standards Board approved a new Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment. ASOP 51 is effective with KCERA's June 30, 2019 SRBR actuarial valuation. ASOP 51 requires actuaries to identify and assess risks that "may reasonably be anticipated to significantly affect the plan's future financial condition". Examples of key

risks listed that are particularly relevant to KCERA's SRBR are asset/liability mismatch risk, investment risk, and longevity risk.

The actuary's initial assessment can be strictly a qualitative discussion about potential adverse experience and the possible effect on future results, but it may also include quantitative numerical demonstrations where informative.

Since the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan. We were engaged to perform a detailed analysis of the potential range of the impact of risk relative to the SRBR's future financial condition based on the June 30, 2018 actuarial valuation. That analysis can be found in our separate risk assessment report dated September 4, 2019.

We have also included a discussion of key risks that may affect the Association in *Section 2, Subsection D*.

Summary of SRBR Valuation Results

		Death Benefit	SRBR1	SRBR2	SRBR3	SRBR4	Total
Present Value of Future SRBR Benefits:	• Active Members	$3,357,000	$1,446,000	$0	$608,000	$9,429,000	$14,840,000
	• Inactive vested members	760,000	790,000	0	20,000	2,353,000	3,923,000
	• Retirees and Beneficiaries	13,124,000	23,889,000	2,582,000	8,592,000	19,203,000	67,390,000
	• Total	$17,241,000	$26,125,000	$2,582,000	$9,220,000	$30,985,000	$86,153,000
Available SRBR Reserves:	• Total SRBR						$168,536,000
	• Additional 0.5% COLA Account						41,991,000
	• Available SRBR before Reflecting Deferred Investment Gains/Losses						$126,545,000
	• Available SRBR after Reflecting Deferred Investment Gains/Losses						$124,444,000
Funding Ratio:	• SRBR benefits before Reflecting Deferred Investment Gains/Losses						146.9%
	• SRBR benefits after Reflecting Deferred Investment Gains/Losses						144.4%

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 a 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. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our 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 the Association. 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	The valuation is based on the Market Value of Assets as of the valuation date, as provided by the Association. The Association uses a "Valuation Value of Assets" that differs from market value to gradually reflect year-to-year changes in the Market Value of Assets in determining the contribution requirements.
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, termination, 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 actuarial valuation is prepared at the request of the Association. 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 cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan. 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; and
  - Changes in statutory provisions.
- If the Association 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 Association 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 the plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the plan.

Section 2: Actuarial Valuation Results

A. Introduction

Additional benefits may be provided to KCERA active and retired members under the plan provisions adopted by the County as provided under article 5.5 of the County Employees Retirement Association Law of 1937 (CERL). These are the Supplemental Retiree Benefit Reserve (SRBR) benefits.

Article 5.5 governs the crediting of interest to reserves and the allocation of Undistributed Earnings. Undistributed Earnings are the amounts that remain after earnings have been used to credit interest to the plan's reserves. They are generally thought of as earnings in excess of those assumed to be earned under the actuarial valuation assumptions.

Under the provisions of Article 5.5, and in accordance with the Board's Interest Crediting Policy, if Undistributed Earnings remain, then 50% of those Earnings are allocated to the SRBR and the remaining 50% are allocated as additional interest credits to all other reserve funds excluding the Contingency Reserve and the SRBR.

A summary of the benefits provided by the SRBR is displayed in Exhibit II. Note that, in addition, the KCERA Board has set aside a portion of the SRBR reserve to help pay for an additional 0.5% COLA adopted under the Ventura Settlement. The assets and liabilities related to this additional 0.5% COLA are included in the regular valuation and are therefore excluded from this SRBR valuation.

B. Demographic Data

The table below provides a summary of the number of members eligible for Approved Benefits as of June 30, 2019. It also contains information on the monthly SRBR benefits in pay status as of June 30, 2019.

Each of the various SRBR benefits and their eligibilities are described in *Section 3, Exhibit II*.

TABLE OF COVERAGE

Members Eligible for Approved Benefits as of June 30, 2019	Death Benefits	SRBR1	SRBR2	SRBR3	SRBR4
1. Active Members	9,197	381	-	-	7,999
2. Inactive Vested Members	2,877	182	-	-	2,749
3. Retirees and Beneficiaries	7,275	6,536	315	294	8,477
4. Total	19,349	7,099	315	294	19,225
5. Total monthly benefits in pay status as of June 30, 2019		$212,500	$44,900	$93,600	$165,200
6. Average monthly benefits in pay status as of June 30, 2019		$33	$143	$318	$19

C. Funding Status

Undistributed Earnings are the only source of funding for the SRBR Benefits. By their very nature, Undistributed Earnings are produced on an inconsistent basis and cannot be relied upon on to appear in any single period.

The actuarial assumptions and methods used to determine the Present Value of Future SRBR Benefits (PVB) are shown in *Section 3, Exhibit I*. These are the same assumptions and methods used in the regular June 30, 2019 KCERA valuation.

KCERA's funding target for the SRBR is based on the PVB. They include all Tier 1, Tier 2, Tier 4 and Death Benefits, as well as all current and projected future Tier 3 benefits.

The table below shows the funding status of the SRBR benefits before reflecting deferred investment losses.

FUNDING STATUS OF SRBR BENEFITS BEFORE REFLECTING DEFERRED INVESTMENT LOSSES

	June 30, 2019	June 30, 2018
1. Available SRBR Reserves before Reflecting Deferred Investment Losses		
a. Total SRBR	$168,536,000	$177,089,000
b. 0.5% COLA Account	41,991,000	49,370,000
c. Available SRBR Reserve (1.a. – 1.b.)	$126,545,000	$127,719,000
2. Present Value of SRBR Benefits (PVB)		
a. Death Benefits	$17,241,000	$16,774,000
b. SRBR1	26,125,000	26,736,000
c. SRBR2	2,582,000	3,037,000
d. SRBR3	9,220,000	9,300,000
e. SRBR4	30,985,000	30,817,000
f. Total	$86,153,000	$86,664,000
3. PVB minus Reserves (2.f.) – (1.c.)	-$40,392,000	-$41,055,000
4. Funding Ratio before Reflecting Deferred Investment Losses (1.c.) ÷ (2.f.)	146.9%	147.4%

The Board’s SRBR policy requires that the funding status be more than 120% in two consecutive valuations, *taking into account the current status of deferred investment gains and losses not yet recognized under the asset smoothing method* and any recent or potential changes in actuarial assumptions, prior to implementing any benefit increases.

The table below shows the funding status of the SRBR benefits after reflecting deferred investment losses.

FUNDING STATUS OF SRBR BENEFITS AFTER REFLECTING DEFERRED INVESTMENT LOSSES

	June 30, 2019	June 30, 2018
1. Available SRBR Reserves after Reflecting Deferred Investment Losses	$124,444,000	$124,909,000
2. Present Value of SRBR Benefits (PVB)		
a. Death Benefits	$17,241,000	$16,774,000
b. SRBR1	26,125,000	26,736,000
c. SRBR2	2,582,000	3,037,000
d. SRBR3	9,220,000	9,300,000
e. SRBR4	30,985,000	30,817,000
f. Total	$86,153,000	$86,664,000
3. PVB minus Reserves (2.f.) – (1.c.)	-$38,291,000	-$38,245,000
4. Funding Ratio after Reflecting Deferred Investment Losses (1.c.) ÷ (2.f.)	144.4%	144.1%

The funding status of the SRBR benefits as measured by the funding ratio decreased slightly from 147.7% as of June 30, 2018 to 146.9% as of June 30, 2019 prior to reflecting any deferred investment gains or losses.

The following table details the changes in the funding ratio from the prior year's valuation to the current year's valuation.

The slight decrease in the funding status for the SRBR benefits was primarily due to an investment loss, since the rate of return on the available SRBR (after smoothing) during 2018-2019 was about 4.5%, which is less than the 7.25% assumption (based on the June 30, 2018 valuation) and an inflation loss. These losses were offset to some extent by the passage of time (i.e., expected changes in the funding status) and other liability gains.

RECONCILIATION OF FUNDING RATIO FOR SRBR BENEFITS

1.	Funding Ratio as of June 30, 2018	147.4%
2.	Changes due to:	
	a. Passage of Time (Expected Changes)	3.8%
	b. Investment Loss	-4.0%
	c. Inflation Loss	-0.7%
	d. Other Liability Gain	0.4%
	e. Total	-0.5%
3.	Funding Ratio as of June 30, 2019	146.9%

Note: Results are prior to reflecting any deferred investment gains or losses as of each valuation date.

D. Risk Assessment

Since the actuarial valuation results are dependent on a fixed set of assumptions and data as of a specific date, there is risk that emerging results may differ, perhaps significantly, as actual experience is fluid and will not exactly track current assumptions. This potential divergence may have a significant impact on the future financial condition of the plan.

Our separate risk assessment report dated September 4, 2019 contains a detailed analysis of the potential range of future measurements, including measurements specific to the SRBR. This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the plan's financial health, as well as a reference to historical trends and maturity measures.

Risk Assessments

- Asset/Liability Mismatch Risk (the potential that future plan experience does not affect asset and liability values in the same way, causing them to diverge)

  The most significant asset/liability mismatch risk to the plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first mismatch is evident in annual valuations: when asset values deviate from assumptions, they are typically independent from liability changes. The second mismatch can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any changes in the expected experience of asset growth rates.

  Asset/liability mismatch can also be caused by demographic assumption risk such as longevity, which affects liabilities but have no impact on asset levels. This risk is also discussed below.

- Investment Risk (the risk that investment returns will be different than expected)

  The investment return assumption is a long-term, static assumption for valuation purposes even though in reality market experience can be quite volatile in any given year. That volatility can cause significant changes in the financial condition of the plan, affecting both funded status and contribution rates. The inherent year-to-year volatility is reduced by smoothing through the Actuarial Value of Assets, however investment experience can still have a sizable impact.

- Longevity Risk (the risk that mortality experience will be different than expected)

  The actuarial valuation includes current life expectancy assumptions and an expectation of future improvement in life expectancy, which are significant assumptions given the relatively long duration of liabilities for pension plans. Emerging plan experience that does not match these expectations will result in increases or decreases in the actuarially determined contribution over time. This risk can be reduced by using tables appropriate for the plan (public experience tables) that are weighted by benefit levels, and by using generational mortality projections.

- Other Risks

  In addition to longevity, the valuation includes a variety of other assumptions that are unlikely to match future experience exactly. One example is projected salary scales over time. As salary is central to the determination of benefits paid in retirement, deviations from the projected salary scales could have a material impact on the benefits anticipated for each member. Examples of demographic assumptions include retirement, termination and disability assumptions, and will likely vary in significance for different groups (for example, disability assumptions are typically more significant for safety groups).

For the evaluation of historical trends and maturity measures, please see *Section 2, Subsection J* of the June 30, 2019 Actuarial Valuation and Review for KCERA.

Section 3: Actuarial Valuation Basis

EXHIBIT I – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions:	The same actuarial assumptions used in the KCERA June 30, 2019 Actuarial Valuation and Review.
Actuarial Cost Method:	Not applicable, since only the Present Value of Future Benefits (PVB) is determined in this report.
Actuarial Value of Assets:	Supplemental Retiree Benefit Reserve value as of valuation date.
Changed Actuarial Assumptions and Methods:	None.

EXHIBIT II – SUMMARY OF PLAN PROVISIONS

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

Plan Year:	July 1 through June 30
Benefits Provided:	The SRBR currently provides five categories of benefits:
Tier 1	$35.50 per month payable to retirees who were hired on or before July 1, 1994. Upon the death of the retired member, 60% of the Tier 1 SRBR benefit continues to the retired member's beneficiary.
Tier 2	Three additional monthly stipends payable to retirees: • $1.372 per year of service for members who retired prior to 1985. This was granted July 1, 1994. • $5.470 per year of service for members who retired prior to 1985. This was granted July 1, 1996. • $10.276 per year of service for members who retired prior to 1981. This was granted July 1, 1997. Upon the death of the retired member, 60% of the Tier 2 SRBR benefit continues to the retired member's beneficiary.
Tier 3	Additional benefits to maintain 82% purchasing power protection. Upon death, this benefit continues to be paid to the retired member's beneficiary based on the applicable continuation percentage under the member's form of payment elected at retirement. There is a cap on the maximum annual inflation used in the calculation of the SRBR Tier 3 benefits of 4%.
Tier 4	$21 per month granted starting July 1, 2018, payable to retirees who were hired prior to July 1, 2018. Upon the death of the retired member, 60% of the Tier 2 SRBR benefit continues to the retired member's beneficiary.
Death Benefit	An additional one-time post-retirement death benefit of $5,000 is paid to a retired member's beneficiary upon the death of the retired member.
Changed Plan Provisions:	There have been no changes in plan provisions since the last valuation.

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Kern County Employees' Retirement Association

Governmental Accounting Standards (GAS) 67
Actuarial Valuation as of June 30, 2019

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December 4, 2019

Board of Retirement
Kern County Employees' Retirement Association
11125 River Run Blvd.
Bakersfield, CA 93311

Dear Board Members:

We are pleased to submit this Governmental Accounting Standard (GAS) 67 Actuarial Valuation as of June 30, 2019. It contains various information that will need to be disclosed in order to comply with GAS 67.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist KCERA in preparing items related to the pension plan in their financial report. The census and financial information on which our calculations were based was provided by KCERA. 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, MAAA, Enrolled Actuary. 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 expectations for the Association.

We look forward to reviewing this report with you and to answering any questions.

Sincerely,

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

By:

Paul Angelo, EA, FSA, MAAA, FCA	John Monroe, ASA, EA, MAAA
Senior Vice President and Actuary	Vice President and Actuary

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SECTION 1

VALUATION SUMMARY

SECTION 2

GAS 67 INFORMATION

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required by Governmental Accounting Standard (GAS) 67 as of June 30, 2019. This valuation is based on:

- The benefit provisions of KCERA, as administered by the Board of Retirement;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2018, provided by KCERA;
- The assets of the Plan as of June 30, 2019, provided by KCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board for the June 30, 2019 valuation; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc. adopted by the Board for the June 30, 2019 valuation.

General Observations on GAS 67 Actuarial Valuation

The following points should be considered when reviewing this GAS 67 report:

- The Governmental Accounting Standards Board (GASB) rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for actual pension funding purposes. Employers and plans develop and adopt funding policies under current practices.
- When measuring pension liability GASB uses the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as KCERA uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on generally the same basis as KCERA's Actuarial Accrued Liability (AAL) measure for funding. We note that the same is generally true for the Normal Cost component of the annual plan cost for funding and financial reporting.
- The Plan's Fiduciary Net Position includes assets held for the Supplemental Retiree Benefit Reserve (SRBR). The TPL reflects all future projected benefits expected to be paid from the SRBR for members as of the valuation date.
- The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is very similar to an Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis. The exception is that the NPL is reduced by the excess of the SRBR assets over the TPL associated with the SRBR benefits.

- For this report, the reporting dates for the Plan are June 30, 2019 and June 30, 2018. The NPL was measured as of June 30, 2019 and June 30, 2018, respectively, and was determined based upon rolling forward the results from actuarial valuations as of June 30, 2018 and June 30, 2017. In addition, any changes in actuarial assumptions or plan provisions that occurred between the valuation date and the measurement date have been reflected. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement dates.

Significant Issues in Valuation Year

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

- The NPL increased from $2.33 billion as of June 30, 2018 to $2.38 billion as of June 30, 2019 primarily due to the 5.14% return on the market value of assets during 2018-2019 (that was lower than the assumed return of 7.25%), offset to some extent by gains from lower than expected active salary increases during 2017-2018 (because liabilities are rolled forward from June 30, 2018 to June 30, 2019, this change is not reflected until this valuation as of June 30, 2019). Changes in these values during the last two fiscal years ending June 30, 2018 and June 30, 2019 can be found in Exhibit 3 of Section 2.

- All results shown in this report are on a combined basis including both the regular statutory (non-SRBR) benefits and the SRBR benefits. For purposes of illustration, separate values for the TPL, Plan's Fiduciary Net Position and NPL for the regular statutory (non-SRBR) benefits and the SRBR benefits as of June 30, 2019 are shown in the table below:

	Regular Benefits (Non-SRBR)	SRBR Benefits	Total KCERA
Total Pension Liability (TPL)	$6,646,533,719	$81,750,744	$6,728,284,463
Plan's Fiduciary Net Position	4,219,235,088	126,544,972	4,345,780,060
Net Pension Liability (NPL)	2,427,298,631	(44,794,228)	2,382,504,403

- The discount rate used to determine the TPL and NPL as of June 30, 2019 and June 30, 2018 was 7.25%, following the same assumption used by the Association in the funding valuations as of the same dates. The detailed derivation of the discount rate of 7.25% used in the calculation of the TPL and NPL as of June 30, 2019 can be found in Exhibit 5 of Section 2. The discount rate assumptions have been developed without taking into consideration any impact of the 50/50 allocation of future excess earnings between the retirement and SRBR asset pools.

- As discussed previously in our separate letter regarding the treatment of the SRBR for financial reporting purposes, the Actuarial Standard of Practice (ASOP) No. 4 ("Measuring Pension Obligations and Determining Pension Plan Costs or

Contributions") was revised in December 2013, effective for measurement dates on or after December 31, 2014. The revised ASOP states that some plan provisions, including "gain sharing" provisions, "may create pension obligations that are difficult to appropriately measure using traditional valuation procedures." ASOP No. 4 now indicates that "for such plan provisions, the actuary should consider using alternative valuation procedures, such as stochastic modeling… to reflect the impact of variations in experience from year to year." The 50% allocation of future excess earnings to the SRBR for KCERA is a clear example of the gain sharing provisions referenced by ASOP No. 4.

After several meetings with KCERA and its auditors, and based on information regarding another SRBR system that included discussions with GASB staff, it was previously determined that future allocations to the SRBR should be treated as an additional "outflow" (i.e., assets not available to fund the benefits included in the determination of the TPL) against the Plan's Fiduciary Net Position in the GASB crossover test[1] (see Appendix A).

However, as noted earlier, the Plan's Fiduciary Net Position <u>includes</u> assets held for the SRBR, and the TPL <u>includes</u> all projected future benefits expected to be paid from the SRBR for members as of the valuation date. This treatment was also discussed with KCERA and its auditors and determined to be appropriate. Therefore, any outflows due to the 50/50 excess earnings allocation would not affect the outcome of the crossover test since the crossover test is performed based on the combined results of the statutory (non-SRBR) benefits and the SRBR.

- Based on discussions with KCERA and their auditors, starting with the June 30, 2016 measurement date for the employers, employer paid member contributions are excluded from employer contributions in the determination of the Actuarially Determined Contribution (ADC). The amount of employer paid member contributions was estimated by first determining what the employer contribution rates would have been during the year, excluding any employer paid member contributions. The actual employer contribution rates were then adjusted by the ratio of the employer contribution rates determined above and the employer contribution rates determined in the annual actuarial valuation. The result is the employer contributions excluding any employer paid member contributions. This change was not been applied on a retroactive basis prior to the 2015-2016 fiscal year.
- Various other information that is required to be disclosed can be found throughout Exhibits 1 through 4 in Section 2.

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1 *The purpose of the GASB crossover test is to determine if the full expected return (or 7.25% in this case) can be used as the discount rate to determine the TPL and the NPL. That is, if there is no crossover point where the projected benefit payments would exceed the Plan's Fiduciary Net Position, then the full expected return assumption can be used. As detailed later in this report, KCERA does pass the crossover test, which means that the full 7.25% investment rate of return assumption can be used as the discount rate to determine the TPL and the resulting NPL.*

Summary of Key Valuation Results

	2019	2018
Disclosure elements for fiscal year ending June 30:		
Service Cost[1]	$122,868,764	$123,407,183
Total Pension Liability	6,728,284,463	6,529,662,330
Plan's Fiduciary Net Position	4,345,780,060	4,198,862,285
Net Pension Liability	2,382,504,403	2,330,800,045
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions[2]	$229,120,000	$242,534,000
Actual contributions	229,120,000	242,534,000
Contribution deficiency (excess)	0	0
Demographic data for plan year ending June 30:[3]		
Number of retired members and beneficiaries	8,495	8,301
Number of vested terminated members[4]	2,877	2,604
Number of active members	9,197	8,867
Key assumptions as of June 30:		
Investment rate of return	7.25%	7.25%
Inflation rate	3.00%	3.00%
Projected salary increases[5]	General: 4.00% to 9.00% and Safety: 4.00% to 12.50%	General: 4.00% to 9.00% and Safety: 4.00% to 12.50%

(1) *Excludes administrative expense load. The service cost is based on the previous year's valuation, meaning the June 30, 2019 and June 30, 2018 values are based on the valuations as of June 30, 2018 and June 30, 2017, respectively. The service costs were calculated using the assumptions shown in the 2018 column as there were no changes in actuarial assumptions between the June 30, 2018 and June 30, 2017 valuations.*

(2) *See footnote (1) under Exhibit 4 on page 9.*

(3) *Data as of June 30, 2018 is used in the measurement of the TPL as of June 30, 2019.*

(4) *Includes terminated members due a refund of member contributions.*

(5) *Includes inflation at 3.00% plus real across-the-board salary increase of 0.50% plus merit and promotional increases that vary by service.*

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 (as well as the plan summary included in our funding valuation 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 KCERA. 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 measurement date, as provided by KCERA.
- **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 Board to assist KCERA in preparing items related to the pension plan in their financial report. 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 cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If KCERA 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 KCERA, it is not a fiduciary in its capacity as actuaries and consultants with respect to KCERA.

EXHIBIT 1

General Information – "Financial Statements", Note Disclosures and Required Supplementary Information for a Cost-Sharing Pension Plan

Plan Description

Plan administration. The Kern County Employees' Retirement Association (KCERA) was established by the County of Kern in 1945. KCERA is administered by the Board of Retirement and governed by the County Employees' Retirement Law of 1937 (California Government Code Section 31450 et. seq.), the California Public Employees' Pension Reform Act (CalPEPRA) and the bylaws, procedures and policies adopted by the KCERA Board. KCERA is a cost-sharing multiple employer defined benefit public employee retirement system whose main function is to provide retirement, disability, death, beneficiary, cost-of-living and supplemental retirement benefits to the General and Safety members employed by the County of Kern. KCERA also provides retirement benefits to the employee members of the Berrenda Mesa Water District, Buttonwillow Recreation and Park District, East Kern Cemetery District, Inyokern Community Services District, Kern County Water Agency, Kern Mosquito and Vector Control District, North of the River Sanitation District, San Joaquin Valley Unified Air Pollution Control District, Shafter Recreation and Park District, West Side Cemetery District, West Side Mosquito and Vector Control District, West Side Recreation and Park District, and the Kern County Superior Court, and the Kern County Hospital Authority.

The management of KCERA is vested with the KCERA Board of Retirement. The Board consists of nine members and two alternate members. The County Treasurer is elected by the general public and is a member of the Board of Retirement by law. Four members are appointed by the Board of Supervisors, one of whom may be a County Supervisor; two members are elected by the general membership; one member and one alternate member are elected by the safety membership; and one member and one alternate member are elected by the retired members of the Association. All members of the Board of Retirement serve terms of three years except for the County Treasurer whose term runs concurrent with his term as County Treasurer.

Plan membership. At June 30, 2019, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	8,495
Vested terminated members entitled to, but not yet receiving benefits[1]	2,877
Active members	9,197
Total	20,569

[1] *Includes terminated members due a refund of member contributions.*

Note: Data as of June 30, 2019 is not used in the measurement of the TPL as of June 30, 2019.

Benefits provided. KCERA provides retirement, disability, beneficiary, cost-of-living and supplemental retirement benefits to eligible employees. All regular full-time employees of the County of Kern or contracting districts who work 50% or more of the regular standard hours required become members of KCERA effective on the first day of the first full biweekly payroll period following the date of employment. There are separate retirement benefits for General and Safety members. Safety membership is extended to those involved in active law enforcement, fire suppression, and certain probation officers.

General members (excluding Tier III) are eligible to retire once they attain the age of 70 regardless of service or at age 50 and have acquired 10 or more years of retirement service credit. A member with 30 years of service is eligible to retire regardless of age. General Tier III members are eligible to retire once they have attained the age of 70 regardless of service or at age 52 and have acquired 5 or more years of retirement service credit.

Safety members are eligible to retire once they attain the age of 70 regardless of service or at age 50 and have acquired 10 or more years of retirement service credit. A member with 20 years of service is eligible to retire regardless of age.

The retirement benefit the member will receive is based upon age at retirement, final average compensation, years of retirement service credit and retirement plan and tier.

General member benefits for Tier I and Tier II are calculated pursuant to the provisions of California Government Code Sections 31676.17 and 31676.01, respectively. The monthly allowance is equal to 1/50th of final average compensation times years of accrued retirement service credit times age factor from Section 31676.17 (Tier I) or 1/90th of final average compensation times years of accrued retirement service credit times age factor from Section 31676.01 (Tier II). General Tier III member benefits are calculated pursuant to the provisions found in California Government Code Section 7522.20(a). The monthly allowance is equal to the final average compensation multiplied by years of accrued retirement credit multiplied by the age factor from Section 7522.20(a).

Safety member benefits for Tier I and Tier II are calculated pursuant to the provisions of California Government Code Sections 31664.1 and 31664, respectively. The monthly allowance is equal to 3% of final average compensation times years of accrued retirement service credit times age factor from 31664.1 (Tier I) or 1/50th (or 2%) of final average compensation times years of accrued retirement service credit times age factor from Section 31664 (Tier II).

For members in Tier I or Tier II, the maximum monthly retirement allowance is 100% of final average compensation. There is no final average compensation limit on the maximum retirement benefit for General Tier III members. However, the maximum amount of compensation earnable that can be taken into account for 2019 for members with membership dates on or after July 1, 1996 but before January 1, 2013 is $280,000. For members with membership dates on or after January 1, 2013 the maximum amount of pensionable compensation that can be taken into account for 2019 is equal to $124,180 for those enrolled in Social Security. These limits are adjusted on an annual basis. Members are exempt from paying member contributions and employers are exempt from paying employer contributions on compensation in excess of the annual cap.

Final average compensation consists of the highest 12 consecutive months of pensionable pay for a General Tier I or Tier IIA member or a Safety Tier I or Tier IIA member and the highest 36 consecutive months of pensionable pay for a General Tier IIB or Tier III member or a Safety Tier IIB member.

The member may elect an unmodified retirement allowance, or choose an optional retirement allowance. The unmodified retirement allowance provides the highest monthly benefit and a 60% continuance to an eligible surviving spouse or domestic partner. An eligible surviving spouse or domestic partner is one married to or registered with the member one year prior to the effective retirement date. Certain surviving spouses or domestic partners may also be eligible if marriage or domestic partnership was at least two years prior to the date of death and the surviving spouse or domestic partner has attained age 55 on or prior to the date of death. There are four optional retirement allowances the member may choose. Each of the optional retirement allowances requires a reduction in the unmodified retirement allowance in order to allow the member the ability to provide certain benefits to a surviving spouse, domestic partner, or named beneficiary having an insurable interest in the life of the member to a surviving spouse, domestic partner, or named beneficiary having an insurable interest in the life of the member.

KCERA provides an annual cost-of-living benefit to all retirees. The cost-of-living adjustment, based upon the Consumer Price Index for the Los Angeles-Long Beach-Anaheim Area, is capped at 2.5%.

The County of Kern and contracting districts contribute to the retirement plan based upon actuarially determined contribution rates adopted by the Board of Retirement. Employer contribution rates are adopted annually based upon recommendations received from KCERA's actuary after the completion of the annual actuarial valuation. The average employer contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation and after reflecting the phase-in of the impact of the assumption changes) was 45.66% of compensation.

Members are required to make contributions to KCERA regardless of the retirement plan or tier in which they are included. The average member contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation) was 6.46% of compensation.

EXHIBIT 2
Net Pension Liability

The components of the Net Pension Liability are as follows:

	June 30, 2019	June 30, 2018
Total Pension Liability	$6,728,284,463	$6,529,662,330
Plan's Fiduciary Net Position	(4,345,780,060)	(4,198,862,285)
Net Pension Liability	$2,382,504,403	$2,330,800,045
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	64.59%	64.30%

The Net Pension Liability (NPL) for the plan was measured as of June 30, 2019 and June 30, 2018. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement dates while the Total Pension Liability (TPL) was determined based upon rolling forward the TPL from actuarial valuations as of June 30, 2018 and June 30, 2017, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of June 30, 2019 and June 30, 2018 are the same as those used in the KCERA actuarial valuation as of June 30, 2019 and June 30, 2018, respectively. The TPL and the Plan's Fiduciary Net Position include liabilities and assets held for the Supplemental Retiree Benefit Reserve (SRBR).

Actuarial assumptions and methods. The TPLs as of June 30, 2019 and June 30, 2018 that were measured by actuarial valuations as of June 30, 2018 and June 30, 2017, respectively, used the same actuarial assumptions and actuarial cost method as the June 30, 2019 and June 30, 2018 funding valuations. The actuarial assumptions used in both valuations were based on the results of an experience study for the period from July 1, 2013 through June 30, 2016. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	General: 4.00% to 9.00% and Safety: 4.00% to 12.50%, varying by service, including inflation
Investment rate of return	7.25%, net of pension plan investment expense, including inflation
Administrative expenses	0.90% of payroll allocated to both the employer and the member based on the components of the total average contribution rate (before expenses) for the employer and the member

Other assumptions	Same as those used in the June 30, 2019 and June 30, 2018 funding valuations. These assumptions were developed in the analysis of actuarial experience for the period July 1, 2013 through June 30, 2016.

The Entry Age Actuarial Cost Method used in KCERA's annual actuarial valuation has also been applied in measuring the service cost and TPL with one exception. For purposes of measuring the service cost and TPL, we have reflected the same plan provisions used in determining the member's Actuarial Present Value of Projected Benefits. This is different from the version of this method applied in KCERA's annual funding valuation, where the Normal Cost is determined as if the current benefit accrual rate had always been in effect.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses are shown in the following table. This information was used in the derivation of the long-term expected investment rate of return assumptions used in the June 30, 2019 and June 30, 2018 valuations. This information will change every three years based on the actuarial experience study.

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
Large Cap U.S. Equity	15%	5.61%
Small Cap U.S. Equity	4%	6.37%
Global Equity	6%	6.50%
Developed International Equity	8%	6.96%
Emerging Market Equity	4%	9.28%
U.S. Core Fixed Income	19%	1.06%
High Yield/Specialty	6%	3.65%
Emerging Market Debt	4%	3.85%
Core Real Estate	5%	4.37%
Value Added Real Estate	5%	6.00%
Commodities	4%	3.76%
Hedge Funds	10%	4.70%
Private Equity	5%	8.70%
Private Credit	5%	5.10%
Total	100%	

Discount rate. The discount rate used to measure the TPL was 7.25% as of June 30, 2019 and June 30, 2018. The projection of cash flows used to determine the discount rates assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employee and employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL as of both June 30, 2019 and June 30, 2018.

The discount rate assumptions have been developed without taking into consideration any impact of the 50/50 allocation of future excess earnings between the retirement and Supplement Retirement Benefit Reserve (SRBR) asset pools.

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the NPL of the KCERA as of June 30, 2019, calculated using the discount rate of 7.25%, as well as what the KCERA's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)	Current Discount Rate (7.25%)	1% Increase (8.25%)
Net Pension Liability as of June 30, 2019	$3,269,998,294	$2,382,504,403	$1,652,493,587

EXHIBIT 3
Schedule of Changes in Net Pension Liability – Last Two Fiscal Years

	2019	2018
Total Pension Liability		
Service Cost	$122,868,764	$123,407,183
Interest	466,378,832	450,171,596
Change of benefit terms	0	31,033,606
Differences between expected and actual experience	(48,813,774)	(80,207,845)
Changes of assumptions	0	0
Benefit payments, including refunds of member contributions	(341,811,689)	(321,612,528)
Net change in Total Pension Liability	$198,622,133	$202,792,012
Total Pension Liability – beginning	6,529,662,330	6,326,870,318
Total Pension Liability – ending (a)	$6,728,284,463	$6,529,662,330
Plan's Fiduciary Net Position		
Contributions – employer[1]	$229,120,365	$242,533,859
Contributions – employee[1]	50,131,647	52,503,738
Net investment income	214,244,103	267,658,597
Benefit payments, including refunds of member contributions	(341,811,689)	(321,612,528)
Administrative expense	(4,766,651)	(5,116,557)
Other	0	0
Net change in Plan's Fiduciary Net Position	$146,917,775	$235,967,109
Plan's Fiduciary Net Position – beginning	4,198,862,285	3,962,895,176
Plan's Fiduciary Net Position – ending (b)	$4,345,780,060	$4,198,862,285
Net Pension Liability – ending (a) – (b)	$2,382,504,403	$2,330,800,045
Plan's Fiduciary Net Position as a percentage of the Total Pension Liability	64.59%	64.30%
Covered payroll[2]	$579,071,865	$576,728,789
Net Pension Liability as percentage of covered payroll	411.44%	404.14%

Notes to Schedule:

Benefit changes: None.

(1) *See footnote (1) under Exhibit 4 on page 9.*

(2) *Covered payroll represents payroll on which contributions to the pension plan are based.*

EXHIBIT 4

Schedule of Employer Contributions – Last Ten Fiscal Years

Year Ended June 30,	Actuarially Determined Contributions[1]	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll[2]	Contributions as a Percentage of Covered Payroll
2010	$151,127,000	$151,127,000	$0	$559,872,000	26.99%
2011	177,444,000	177,444,000	0	559,380,000	31.72%
2012	189,837,000	189,837,000	0	526,079,162	36.09%
2013	211,677,000	211,677,000	0	516,465,189	40.99%
2014	220,393,000	220,393,000	0	533,850,811	41.28%
2015	215,477,000	215,477,000	0	531,598,183	40.53%
2016	216,229,000	216,229,000	0	537,539,991	40.23%
2017	224,351,000	224,351,000	0	546,671,003	41.04%
2018	242,534,000	242,534,000	0	576,728,789	42.05%
2019	229,120,000	229,120,000	0	579,071,865	39.57%

See accompanying notes to this schedule on next page.

(1) *All "Actuarially Determined Contributions" through June 30, 2014 were determined as the "Annual Required Contribution" under GAS 25 and 27. Starting from 2016, actuarially determined contributions exclude employer paid member contributions.*

(2) *Covered payroll represents payroll on which contributions to the pension plan are based.*

Notes to Exhibit 4

Methods and used assumptions to establish "actuarially determined contribution" rates:		
Valuation date	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported	
Actuarial cost method	Entry Age Actuarial Cost Method	
Amortization method	Level percent of payroll for total unfunded liability	
Remaining amortization period	16.5 years as of June 30, 2019 for all UAAL as of June 30, 2011. Effective June 30, 2012, any changes in UAAL due to actuarial gains or losses or due to changes in actuarial assumptions or methods will be amortized over a 18-year closed period effective with each valuation. Any change in unfunded actuarial accrued liability that arises due to plan amendments is amortized over its own declining 15-year period (with exception of a change due to retirement incentives, which is amortized over a declining period of up to 5 years).	
Asset valuation method	Market value of assets (MVA) less unrecognized returns in each of the last five years. Unrecognized returns are equal to the difference between the actual market return and the expected return on a market value basis and are recognized semi-annually over a five-year period. The AVA cannot be less than 50% of MVA, nor greater than 150% of MVA. The Actuarial Value of Assets (AVA) is reduced by the value of the non-valuation reserves.	
Actuarial assumptions:	June 30, 2019 Valuation Date	June 30, 2018 Valuation Date
Investment rate of return	7.25%, net of pension plan investment expenses, including inflation	7.25%, net of pension plan investment expenses, including inflation
Inflation rate	3.00%	3.00%
Real across-the-board salary increase	0.50%	0.50%
Projected salary increases[1]	General: 4.00% to 9.00% and Safety: 4.00% to 12.50%	General: 4.00% to 9.00% and Safety: 4.00% to 12.50%
Administrative Expenses	0.90% of payroll allocated to both the employer and member based on the components of the total contribution rate (before expenses) for the employer and member.	0.90% of payroll allocated to both the employer and member based on the components of the total contribution rate (before expenses) for the employer and member.
Cost of living adjustments	2.50% (actual increases contingent upon CPI increases with a 2.50% maximum)	2.50% (actual increases contingent upon CPI increases with a 2.50% maximum)
Other assumptions	Same as those used in the June 30, 2019 funding actuarial valuation	Same as those used in the June 30, 2018 funding actuarial valuation

(1) *Includes inflation at 3.00% plus real across-the-board salary increase of 0.50% plus merit and promotional increases.*

EXHIBIT 5

Projection of Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2019 ($ in millions)

Year Beginning July 1,	Projected Beginning Plan's Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expense (d)	Projected Investment Earnings (e)	Projected Ending Plan's Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2018	$4,199	$279	$342	$5	$214	$4,346
2019	4,346	309	383	5	312	4,578
2020	4,578	316	383	5	329	4,835
2021	4,835	320	399	4	347	5,098
2022	5,098	325	415	4	366	5,369
2023	5,369	332	431	4	385	5,650
2024	5,650	337	448	4	405	5,939
2025	5,939	341	466	4	425	6,236
2026	6,236	346	483	4	446	6,542
2027	6,542	352	501	4	468	6,857
2028	6,857	357	519	4	490	7,182
2046	9,282	17	761	1	645	9,182
2047	9,182	15	763	1	637	9,070
2048	9,070	12	763	1	629	8,948
2066	6,074	0 *	578	0 *	419	5,915
2067	5,915	0 *	559	0 *	408	5,763
2068	5,763	0 *	540	0 *	397	5,621
2086	6,247	0	134	0	448	6,561
2087	6,561	0	116	0	471	6,916
2088	6,916	0	100	0	498	7,314
2106	22,919	0	1	0	1,662	24,579
2107	24,579	0	0 *	0	1,782	26,361
2108	26,361	0	0 *	0	1,911	28,272
2127	99,654	0	0 *	0	7,225	106,879
2128	106,879					
2128	Discounted Value: 48 **					

* Less than $1 million, when rounded.

** $106,879 million when discounted with interest at the rate of 7.25% per annum has a value of $48 million (or 1.15% of the Plan's Fiduciary Net Position) as of June 30, 2018.

EXHIBIT 5 (continued)

Projection of Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2019 ($ in millions)

Notes:

(1) Amounts may not total exactly due to rounding.

(2) Amounts shown in the year beginning July 1, 2018 row are actual amounts, based on the financial statements provided by KCERA.

(3) Years 2029-2045, 2049-2065, 2069-2085, 2089-2105, and 2109-2126 have been omitted from this table.

(4) Column (a): Except for the "discounted value" shown for 2128, none of the projected beginning Plan's Fiduciary Net Position amounts shown have been adjusted for the time value of money.

(5) Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of June 30, 2018); plus employer contributions to the unfunded actuarial accrued liability; plus employer and employee contributions to fund each year's annual administrative expenses. Contributions are assumed to occur halfway through the year, on average.

(6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GASB Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2018. The projected benefit payments reflect the cost of living increase assumption of 2.50% per annum and include projected benefits associated with the Supplemental Retiree Benefit Reserve. Benefit payments are assumed to occur halfway through the year, on average.

(7) Column (d): Projected administrative expenses are calculated as approximately 0.90% of the closed group payroll. Administrative expenses are assumed to occur halfway through the year, on average.

(8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.25% per annum.

(9) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected "cross-over date" when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.25% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2019 shown earlier in this report, pursuant to Paragraph 44 of GASB Statement No. 67.

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