

# Kern County Employees' Retirement Association

## **Actuarial Valuation and Review**

As of June 30, 2020



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

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December 1, 2020

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, 2020. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for July 1, 2021 to June 30, 2022.

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 Mark Hamwee, FSA, 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

A handwritten signature in black ink, appearing to read "Paul Angelo".

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

A handwritten signature in blue ink, appearing to read "Molly Calcagno".

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Molly Calcagno, ASA, MAAA, EA  
Actuary

JAC/jl

# Table of Contents

Section 1: Actuarial Valuation Summary.....	5
Purpose and Basis .....	5
Effect of Gain Sharing Provisions.....	7
Valuation Highlights.....	8
Summary of Key Valuation Results .....	11
Important Information about Actuarial Valuations.....	15
Section 2: Actuarial Valuation Results .....	17
A. Member Data .....	17
B. Financial Information.....	21
C. Actuarial Experience .....	25
D. Other Changes in the Actuarial Accrued Liability.....	30
E. Development of Unfunded Actuarial Accrued Liability .....	31
F. Recommended Contribution.....	32
G. Funded Status .....	54
H. Actuarial Balance Sheet .....	56
I. Volatility Ratios .....	57
J. Risk Assessment .....	59
Section 3: Supplemental Information.....	62
Exhibit A: Table of Plan Coverage.....	62
Exhibit B: Members in Active Service as of June 30, 2020 .....	73
Exhibit C: Reconciliation of Member Data .....	84
Exhibit D: Summary Statement of Income and Expenses on a Market Value Basis.....	85
Exhibit E: Summary Statement of Plan Assets.....	86
Exhibit F: Summary of Reported Reserve Information .....	87
Exhibit G: Development of the Fund through June 30, 2020.....	88

# Table of Contents

Exhibit H: Table of Amortization Bases .....	89
Exhibit I: Projection of UAAL Balances and Payments.....	93
Exhibit J: Definition of Pension Terms.....	95
Section 4: Actuarial Valuation Basis .....	99
Exhibit I: Actuarial Assumptions and Methods .....	99
Exhibit II: Summary of Plan Provisions.....	121
Exhibit III: Member Contribution Rates.....	128

# Section 1: Actuarial Valuation Summary

## Purpose and Basis

This report was prepared by Segal to present a valuation of the Kern County Employees' Retirement Association ("KCERA" or "the Association") as of June 30, 2020. 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, 2020, provided by KCERA;
- The assets of the plan as of June 30, 2020, provided by KCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the June 30, 2020 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the June 30, 2020 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.

## Section 1: Actuarial Valuation Summary

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 107 and 108.

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit H* starting 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* starting on page 93.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2021 through June 30, 2022.

## Section 1: Actuarial Valuation Summary

### 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 Reserve (SRBR) 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”) 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 further states 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 \$7.01 billion to \$7.26 billion (for a difference of about \$259 million) and would increase the employer’s contribution rate by about 4.1% of payroll.

# Section 1: Actuarial Valuation Summary

## Valuation Highlights

- Pg. 99 1. The results of this valuation reflect changes in the actuarial assumptions adopted by the Board for the June 30, 2020 valuation. These changes were documented in our Actuarial Experience Study and are also outlined in *Section 4, Exhibit I* of this report. The assumption changes resulted in an increase in the average employer contribution rate of 2.34% of payroll and an increase in the average member rate of 0.02% of payroll. Of the 2.34% increase in the employer rate, 0.21% is due to a decrease in the Normal Cost and 2.55% is due to an increase in the UAAL rate.
- Pgs. 26-27 2. The Market Value of Assets earned a return of 2.95% for the July 1, 2019 to June 30, 2020 plan year. The Valuation Value of Assets earned a return of 5.73% 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 2019-2020 plan year. This actuarial investment loss increased the average employer contribution rate by 0.79% of payroll.
- Pg. 55 3. The ratio of the Valuation Value of Assets to Actuarial Accrued Liabilities decreased slightly from 64.8% to 64.4%. The ratio of the Market Value of Assets to the Actuarial Accrued Liability decreased from 63.7% to 61.6%. The Association's UAAL (which is based on Pg. 31 the Valuation Value of Assets) has increased from \$2.33 billion to \$2.50 billion. The increase in UAAL is primarily due to the changes in actuarial assumptions adopted by the Board and 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*.
- Pg. 33 4. The average recommended employer contribution rate calculated in this valuation increased from 47.09% of payroll to 49.16% of payroll. This increase is primarily due to the changes in actuarial assumptions adopted by the Board and 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*.
- Pg. 34 5. The average member rate calculated in this valuation has increased from 6.67% of payroll to 6.74% of payroll. This change is primarily due to changes in member demographics amongst the tiers and the changes in actuarial assumption adopted by the Board. A complete reconciliation of the Association's average member rate is provided in *Section 2, Subsection F*.
- Pgs. 37-38, 43 6. 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 rates shown in the report along with the Tier IIB employer rate.
- Pgs. 44-45 7. Consistent with last year, 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.



## Section 1: Actuarial Valuation Summary

- Pg. 22 8. The total unrecognized net investment loss as of June 30, 2020 is about \$196 million as compared to an unrecognized net investment loss of \$72 million in the previous valuation. This deferred investment loss of \$196 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 \$196 million represent about 4.4% of the Market Value of Assets. Unless offset by future investment gains or other favorable experience, the recognition of the \$196 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 64.4% to 61.6%.

For comparison purposes, if all the net deferred losses in the June 30, 2019 valuation had been recognized immediately in the June 30, 2019 valuation, the funded ratio in last year's valuation would have decreased from 64.8% to 63.7%.

- 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 49.16% of payroll to 51.76% of payroll.

For comparison purposes, if all the net deferred losses in the June 30, 2019 valuation had been recognized immediately in the June 30, 2019 valuation, the average employer contribution rate in last year's valuation would have increased from 47.09% of payroll to 48.07% of payroll.

- Pg. 87 9. During 2019-2020 there were no "excess earnings" credited to the valuation reserves or the SRBR. Also, at June 30, 2020, 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, 2020, 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*.

- Pg. 59 10. The Actuarial Standards Board approved Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment, which was first 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.

## Section 1: Actuarial Valuation Summary

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, 2020 actuarial valuation, which includes a discussion of key risks that may affect the Association, can be found in *Section 2, Subsection J*.

11. On July 30, 2020, the California Supreme Court issued a decision in the case of Alameda County Deputy Sheriffs' Association et al. v. Alameda County Employees' Retirement Association (ACERA) and Board of Retirement of ACERA. That decision has important implications for KCERA and its members. In particular, the decision requires pension systems like KCERA to exclude certain pay items from a legacy member's compensation earnable. It should be noted that neither the June 30, 2020 assets provided by KCERA nor the liabilities we calculated using the membership data provided by KCERA reflect the financial impact of the California Supreme Court decision.
12. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2020. Due to the COVID-19 pandemic, market conditions have changed significantly during 2020. The plan's funded status does not reflect short-term fluctuations of the market, but rather is based on the market values on the last day of the plan year. While it is impossible to determine how the pandemic will continue to affect market conditions prior to next year's valuation, Segal is available to prepare projections of potential outcomes upon request.

## Section 1: Actuarial Valuation Summary

### Summary of Key Valuation Results

		June 30, 2020		June 30, 2019	
		Total Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)	Total Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>Employer Contribution Rates:<sup>2</sup></b>	• County General without Courts	40.38%	\$170,942	38.63%	\$155,050
	• Courts	40.28%	13,201	38.35%	12,412
	• County Safety	78.08%	108,481	73.24%	103,301
	• District Category I	53.16%	3,265	51.61%	3,226
	• District Category II	50.57%	1,295	49.56%	1,173
	• District Category III	46.46%	13,407	43.95%	11,873
	• District Category V	43.86%	618	41.43%	520
	• District Category VI	60.43%	223	57.64%	245
	• Declining Employers <sup>3</sup>	317.37%	530	298.14%	480
	<b>All Categories Combined</b>	<b>49.16%</b>	<b>\$311,962</b>	<b>47.09%</b>	<b>\$288,280</b>

<sup>1</sup> Based on projected annual compensation for each valuation date.

<sup>2</sup> 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.

<sup>3</sup> 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).

## Section 1: Actuarial Valuation Summary

### Summary of Key Valuation Results (continued)

		June 30, 2020		June 30, 2019	
		Total Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)	Total Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>Average Member Contribution Rates:</b>	• County General Tier I without Courts	5.33%	\$7,878	5.13%	\$8,093
	• County General Tier IIA without Courts	6.78%	4,673	6.52%	4,544
	• County General Tier IIB without Courts	6.23%	12,873	6.25%	10,871
	• Courts Tier I	8.16%	1,166	8.15%	1,280
	• Courts Tier IIA	6.50%	237	6.26%	203
	• Courts Tier IIB	6.23%	924	6.25%	839
	• County Safety Tier I	6.82%	6,918	6.76%	7,177
	• County Safety Tier IIA	9.34%	715	9.27%	688
	• County Safety Tier IIB	13.07%	3,900	14.00%	3,845
	• District Category I Tier I	3.16%	139	3.12%	154
	• District Category I Tier IIA	6.22%	41	6.08%	47
	• District Category I Tier IIB	6.23%	68	6.25%	33
	• District Category II Tier I	5.53%	92	4.94%	88
	• District Category II Tier IIB	6.23%	56	6.25%	37
	• District Category II Tier III	7.35%	0	7.30%	0
	• District Category III Tier I (Buttonwillow)	8.67%	3	8.40%	3
	• District Category III Tier I (SJVAPCD)	12.27%	2,447	12.21%	2,382
	• District Category III Tier IIA (Buttonwillow)	6.23%	0	6.25%	0
	• District Category III Tier IIA (SJVAPCD)	6.73%	70	6.69%	79
	• District Category III Tier IIB	6.23%	488	6.25%	393
	• District Category V Tier I	5.63%	8	5.70%	8
	• District Category V Tier IIA	6.08%	24	5.95%	23
	• District Category V Tier IIB	6.23%	54	6.25%	45
	• District Category VI Tier I	0.00%	0	0.00%	0
	• District Category VI Tier IIB	6.23%	0	6.25%	0
	• Declining Employers Tier I	5.50%	9	5.70%	9
	• Declining Employers Tier IIB	6.23%	0	6.25%	0
	<b>All Categories Combined</b>	<b>6.74%</b>	<b>\$42,783</b>	<b>6.67%</b>	<b>\$40,841</b>

<sup>1</sup> Based on projected annual compensation for each valuation date.

## Section 1: Actuarial Valuation Summary

### Summary of Key Valuation Results (continued)

		June 30, 2020 (\$ in '000s)	June 30, 2019 (\$ in '000s)
<b>Actuarial Accrued Liability as of June 30:<sup>2</sup></b>	• Retired members and beneficiaries	\$4,591,235	\$4,307,189
	• Inactive vested members <sup>1</sup>	231,940	206,769
	• Active members	<u>2,182,414</u>	<u>2,108,537</u>
	• Total Actuarial Accrued Liability	\$7,005,589	\$6,622,495
	• Normal Cost for plan year beginning June 30	128,583	129,299
<b>Assets as of June 30:</b>	• Market Value of Assets (MVA) <sup>3</sup>	\$4,312,314	\$4,219,235
	• Valuation Value of Assets (VVA)	4,508,548	4,291,573
<b>Funded status as of June 30:</b>	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	\$2,693,275	\$2,403,260
	• Funded percentage on MVA basis	61.56%	63.71%
	• Unfunded Actuarial Accrued Liability on Valuation Value of Assets basis	2,497,041	\$2,330,922
	• Funded percentage on VVA basis	64.36%	64.80%
<b>Key assumptions:</b>	• Net investment return	7.25%	7.25%
	• Price inflation	2.75%	3.00%
	• Payroll growth	3.25%	3.50%

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes liabilities associated with benefits paid by the Supplemental Retiree Benefits Reserve. These liabilities are included in a separate valuation report.

<sup>3</sup> Excludes non-valuation reserves.

## Section 1: Actuarial Valuation Summary

### Summary of Key Valuation Results (continued)

		June 30, 2020	June 30, 2019	Change From Prior Year
<b>Demographic data as of June 30:</b>	<b>Active Members:</b>			
	• Number of members	9,326	9,197	1.4%
	• Average age	41.9	41.9	0.0
	• Average service	9.5	9.5	0.0
	• Total projected compensation	\$634,569,637	\$612,277,277	3.6%
	• Average projected compensation	\$68,043	\$66,574	2.2%
	<b>Retired Members and Beneficiaries:</b>			
	• Number of members:			
	– Service retired	6,559	6,382	2.8%
	– Disability retired	883	893	-1.1%
	– Beneficiaries	<u>1,225</u>	<u>1,220</u>	0.4%
	– Total	8,667	8,495	2.0%
	• Average age	69.4	69.2	0.2
	• Average monthly benefit <sup>1</sup>	\$3,465	\$3,363	3.0%
<b>Inactive Vested Members:</b>				
• Number of members <sup>2</sup>	3,143	2,877	9.2%	
• Average age	42.3	42.4	-0.1	
<b>Total Members:</b>	21,136	20,569	2.8%	

<sup>1</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

<sup>2</sup> Includes inactive members due a refund of member contributions.

## Section 1: Actuarial Valuation Summary

### 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 relies on a number of input items. These include:

<b>Plan of benefits</b>	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.
<b>Participant data</b>	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.
<b>Assets</b>	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.
<b>Actuarial assumptions</b>	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.
<b>Models</b>	Segal valuation results are based on proprietary actuarial modeling software. The actuarial valuation models generate a comprehensive set of liability and cost calculations that are presented to meet regulatory, legislative and client requirements. Our Actuarial Technology and Systems unit, comprised of both actuaries and programmers, is responsible for the initial development and maintenance of these models. The models have a modular structure that allows for a high degree of accuracy, flexibility and user control. The client team programs the assumptions and the plan provisions, validates the models, and reviews test lives and results, under the supervision of the responsible actuary

## Section 1: Actuarial Valuation Summary

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;
- Changes in statutory provisions; and
- Differences between the contribution rates determined by the valuation and those adopted by the Board of Retirement.<sup>1</sup>

Some actuarial results in this report are not rounded, but that does not imply precision.

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 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.

<sup>1</sup> KCERA has a proven track record of adopting the Actuarial Determined Contributions as determined by the valuation and based on the Board's Actuarial Funding Policy.



# Section 2: Actuarial Valuation Results

## 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: 2011 – 2020

Year Ended June 30	Active Members	Inactive Vested Members <sup>1</sup>	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
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
2020	9,326	3,143	8,667	11,810	1.27	0.93

<sup>1</sup> Includes inactive members due a refund of member contributions.

## Section 2: Actuarial Valuation Results

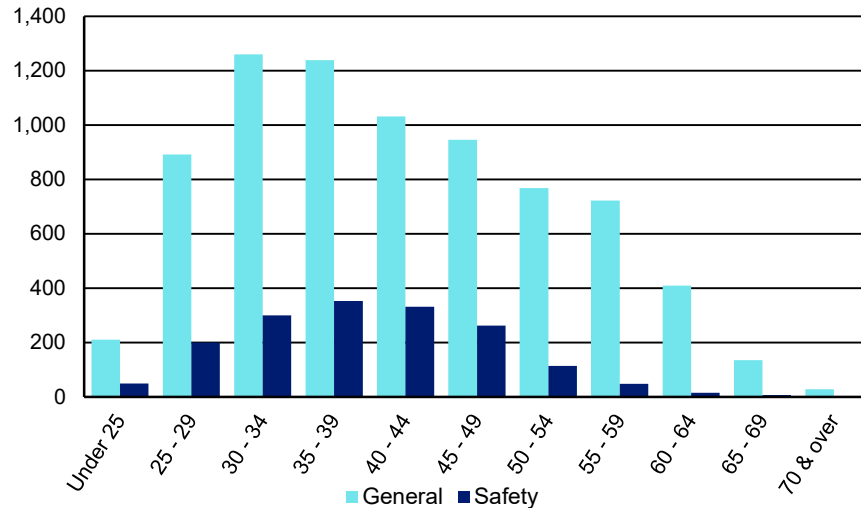
### Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 9,326 active members with an average age of 41.9, average years of service of 9.5 years and average compensation of \$68,043. The 9,197 active members in the prior valuation had an average age of 41.9, average service of 9.5 years and average compensation of \$66,574.

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

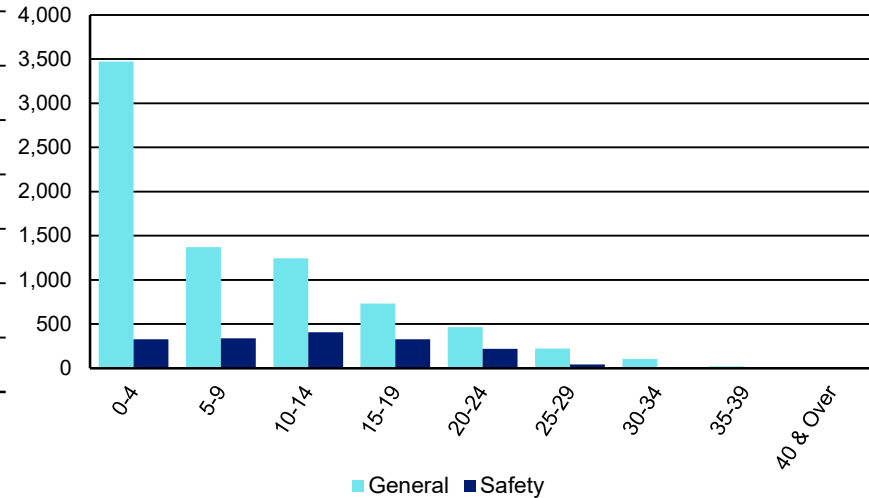
Distribution of Active Members as of June 30, 2020

Actives by Age



Average age	41.9
Prior year average age	41.9
Difference	0.0

Actives by Years of Service



Average years of service	9.5
Prior year average years of service	9.5
Difference	0.0

### Inactive Members

In this year's valuation, there were 3,143 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 2,877 in the prior valuation.

## Section 2: Actuarial Valuation Results

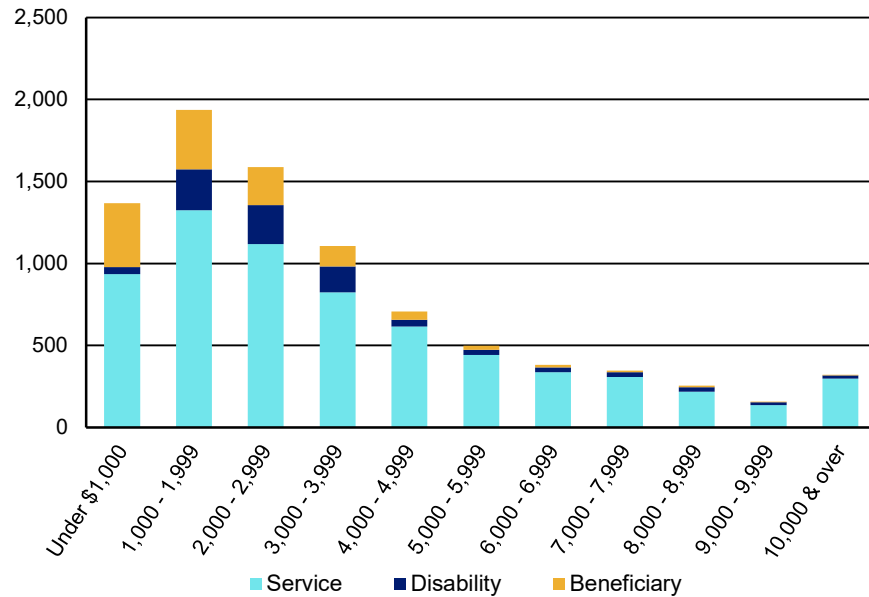
### Retired Members and Beneficiaries

As of June 30, 2020, 7,442 retired members and 1,225 beneficiaries were receiving total monthly benefits of \$30,028,202. For comparison, in the previous valuation, there were 7,275 retired members and 1,220 beneficiaries receiving monthly benefits of \$28,572,247.

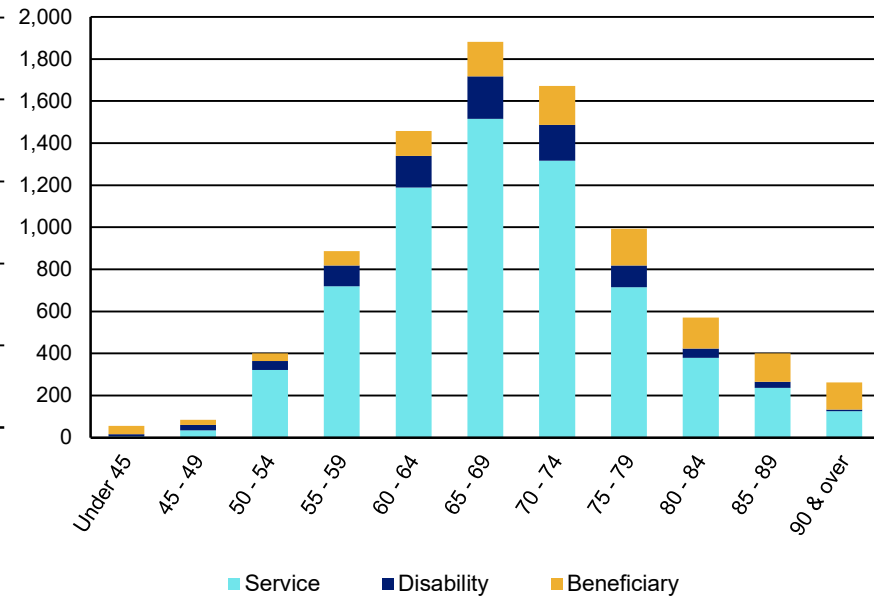
As of June 30, 2020, the average monthly benefit for retired members and beneficiaries is \$3,465, compared to \$3,363 in the previous valuation. The average age for retired members and beneficiaries is 69.4 in the current valuation, compared with 69.2 in the prior valuation.

#### Distribution of Retired Members and Beneficiaries as of June 30, 2020

Retired Members and Beneficiaries  
by Type and Monthly Amount



Retired Members and Beneficiaries  
by Type and Age



## Section 2: Actuarial Valuation Results

### 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 Data Statistics: 2011 – 2020

Year Ended June 30	Active Members			Retired Members and Beneficiaries		
	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
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
2020	9,326	41.9	9.5	8,667	69.4	3,465

## Section 2: Actuarial Valuation Results

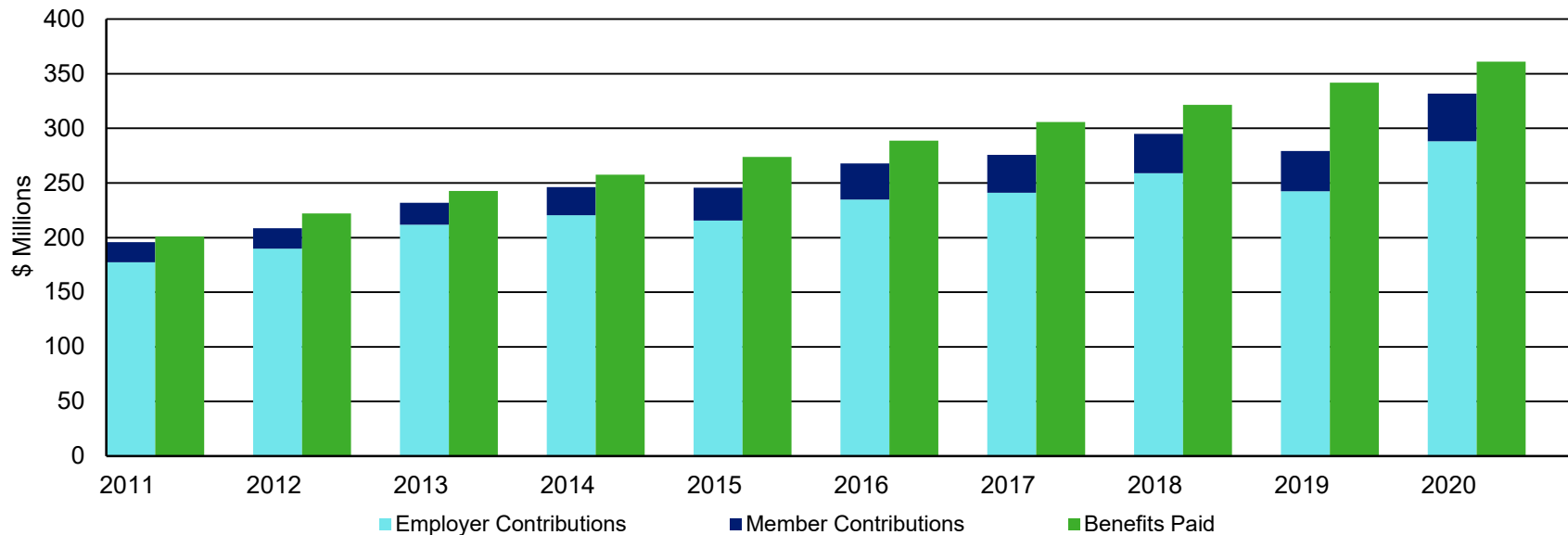
### B. Financial Information

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 Made with Benefits for Years Ended June 30, 2011 – 2020



## Section 2: Actuarial Valuation Results

### Determination of Actuarial Value of Assets for Year Ended June 30, 2020

<b>1 Market Value of Assets</b>						<b>\$4,438,794,794</b>
<b>2</b>		<b>Actual Return</b>	<b>Expected Return</b>	<b>Investment Gain / (Loss)</b>	<b>Percent Deferred</b>	<b>Unrecognized Amount</b>
a)	Six-month period ended 6/30/2015	\$113,483,725	\$134,126,222	\$(20,642,498)	0%	\$0
b)	Six-month period ended 12/31/2015	(130,277,891)	137,880,456	(268,158,347)	0%	0
c)	Six-month period ended 6/30/2016	102,742,734	132,508,089	(29,765,355)	10%	(2,976,535)
d)	Six-month period ended 12/31/2016	160,552,179	135,836,079	24,716,100	20%	4,943,220
e)	Six-month period ended 6/30/2017	266,054,594	141,194,926	124,859,668	30%	37,457,900
f)	Six-month period ended 12/31/2017	253,352,676	148,484,992	104,867,684	40%	41,947,074
g)	Six-month period ended 6/30/2018	14,305,836	152,145,120	(137,839,284)	50%	(68,919,642)
h)	Six-month period ended 12/31/2018	(133,735,888)	151,819,366	(285,555,254)	60%	(171,333,153)
i)	Six-month period ended 6/30/2019	347,954,553	145,751,611	202,202,941	70%	141,542,059
j)	Six-month period ended 12/31/2019	202,028,683	157,497,125	44,531,558	80%	35,625,246
k)	Six-month period ended 6/30/2020	(74,167,569)	164,189,074	(238,356,644)	90%	(214,520,980)
l)	Total unrecognized return <sup>1</sup>					\$(196,234,810)
<b>3</b>	<b>Preliminary Actuarial Value of Assets: 1 – 2l</b>					<b>\$4,635,029,604</b>
<b>4</b>	<b>Corridor around Market Value of Assets</b>					
a)	Minimum – 50% of Market Value					\$2,219,397,397
b)	Maximum – 150% of Market Value					6,658,192,191
<b>5</b>	<b>Final Actuarial Value of Assets</b>					<b>\$4,635,029,604</b>
<b>6</b>	<b>Actuarial Value of Assets as a percentage of Market Value of Assets: 5 / 1</b>					104.4%
<b>7</b>	<b>Non-valuation reserves:<sup>2</sup></b>					
a)	Supplemental Retiree Benefit Reserve (SRBR) Unallocated to 0.5% COLA benefits					\$126,481,333
b)	COLA Contribution Reserve					0
c)	Subtotal					\$126,481,333
<b>8</b>	<b>Valuation Value of Assets: 5 – 7c</b>					<b>\$4,508,548,272</b>

Note: Results may not add due to rounding.

<sup>1</sup> Deferred return as of June 30, 2020 recognized in each of the next five years:

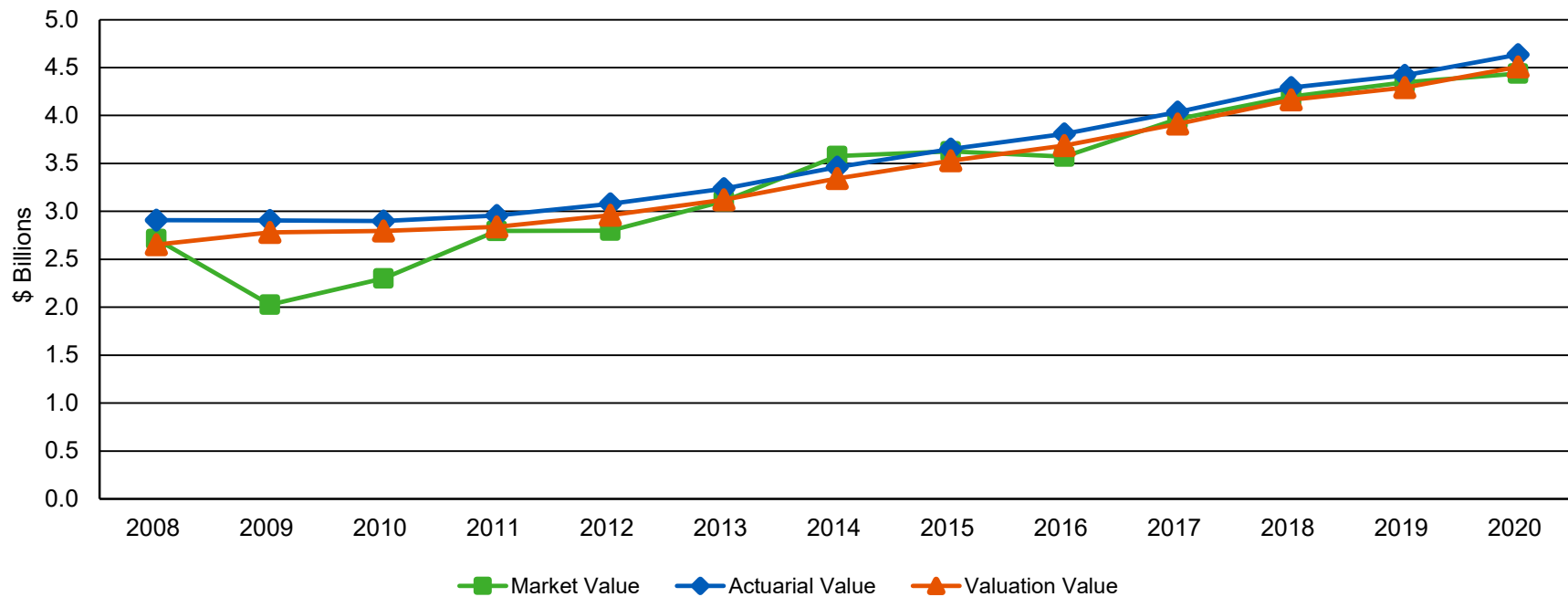
(a)	Amount recognized on June 30, 2021	\$(35,091,182)
(b)	Amount recognized on June 30, 2022	(49,543,833)
(c)	Amount recognized on June 30, 2023	(69,219,408)
(d)	Amount recognized on June 30, 2024	(18,544,723)
(e)	Amount recognized on June 30, 2025	(23,835,664)
(f)	Subtotal	\$(196,234,810)

<sup>2</sup> Because the Contingency Reserve is negative as of June 30, 2020, it is not excluded from the valuation value of assets per the Board's Interest Crediting Policy.

## Section 2: Actuarial Valuation Results

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 the Actuarial Value, 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 – 2020



## Section 2: Actuarial Valuation Results

### Allocation of Valuation Value of Assets as of June 30, 2020

	County General	District <sup>1</sup>	County Safety	Total
Member Deposit Reserves	\$287,434,022	\$31,090,256	\$143,396,605	\$461,920,883
Employer Advance Reserves	475,973,601	48,621,285	527,844,083	1,052,438,968
Cost-of-Living Reserves – 2%	802,938,574	62,866,270	571,879,238	1,437,684,082
Cost-of-Living Reserves – 0.5% <sup>2</sup>	18,547,399	1,452,173	13,210,067	33,209,640
Retired Member Reserves	1,052,447,817 <sup>3</sup>	78,565,146 <sup>3</sup>	408,636,469	1,539,649,432
Contingency Reserve <sup>4</sup>	(9,535,308)	(805,205)	(6,014,221)	(16,354,734)
<b>Valuation Value of Assets</b>	<b>\$2,627,806,106</b>	<b>\$221,789,925</b>	<b>\$1,658,952,241</b>	<b>\$4,508,548,272</b>

Note: Results may not add due to rounding.

<sup>1</sup> Includes Valuation Value of Assets allocated to the declining employers as follows:

Berrenda Mesa \$5,383,000  
Inyokern \$143,000

<sup>2</sup> Allocated in proportion to the Cost-of-Living Reserve – 2%.

<sup>3</sup> Allocated in proportion to the retired member and beneficiary Actuarial Accrued Liability for these groups.

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



## Section 2: Actuarial Valuation Results

### 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.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. The changes in actuarial assumptions based on the experience study performed earlier this year are reflected in this valuation.

The net total loss is \$52.0 million, which includes \$65.1 million from investment losses, a gain of \$2.7 from contribution experience and \$10.4 in gains from all other sources. The net experience variation from individual sources other than investments and contributions was 0.1% 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, 2020

<b>1</b>	Net loss from investments <sup>1</sup>	\$(65,123,000)
<b>2</b>	Net gain from contribution experience	2,746,000
<b>3</b>	Net gain from other experience <sup>2</sup>	<u>10,414,000</u>
<b>4</b>	<b>Net experience loss: 1 + 2 + 3</b>	<b>\$(51,963,000)</b>

<sup>1</sup> Details on next page.

<sup>2</sup> See *Section 2, Subsection E* for further details. Does not include the effect of plan or assumption changes, if any.

## Section 2: Actuarial Valuation Results

### 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 2.95% for the year ended June 30, 2020.

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 2019-2020 plan year was 5.73%. 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, 2020 with regard to its investments.

#### Investment Experience for Year Ended June 30, 2020

	Market Value	Actuarial Value	Valuation Value
<b>1</b> Net investment income	\$127,861,225	\$251,758,339	\$245,000,434
<b>2</b> Average value of assets	4,328,356,815	4,400,694,511	4,277,560,311
<b>3</b> Rate of return: <b>1 ÷ 2</b>	2.95%	5.72%	5.73%
<b>4</b> Assumed rate of return	7.25%	7.25%	7.25%
<b>5</b> Expected investment income: <b>2 x 4</b>	313,805,869	319,050,352	310,123,123
<b>6</b> Actuarial gain/(loss): <b>1 - 5</b>	<b>\$(185,944,644)</b>	<b>\$(67,292,013)</b>	<b>\$(65,122,689)</b>

## Section 2: Actuarial Valuation Results

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: 2011 – 2020

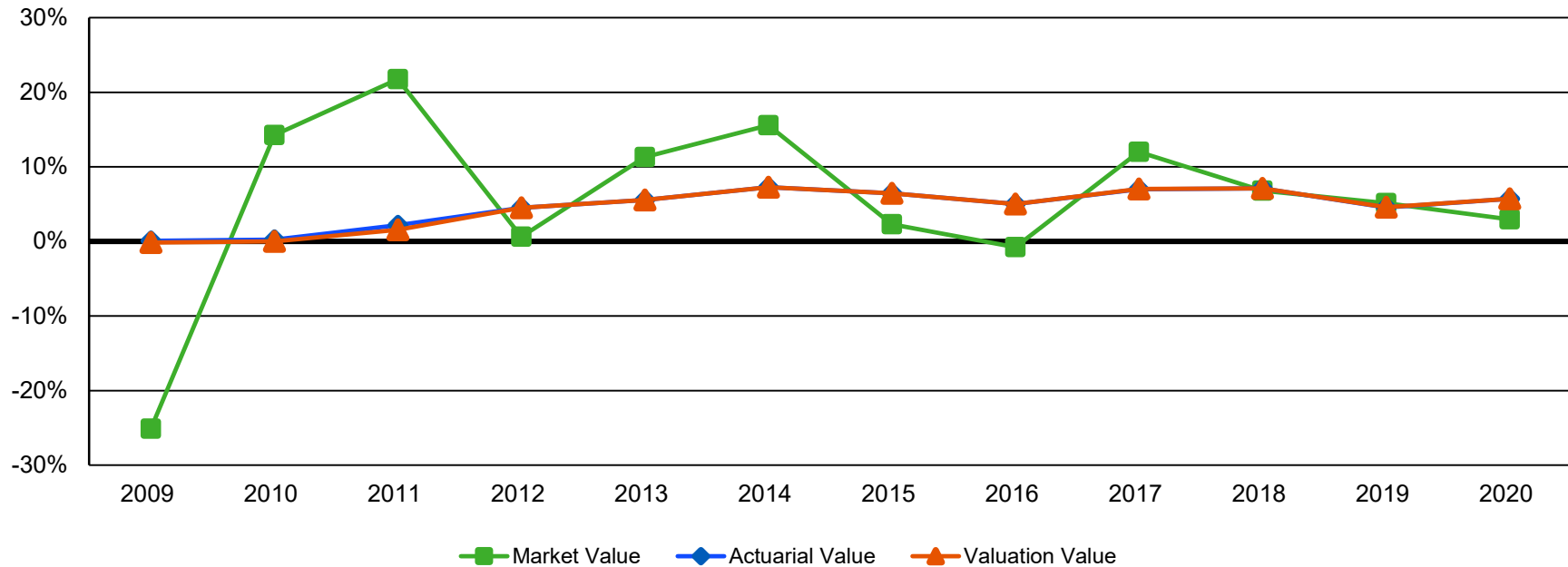
Year Ended June 30	Market Value Investment Return		Actuarial Value Investment Return		Valuation Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent
2011	\$499,791,014	21.74%	\$62,849,280	2.17%	\$43,965,998	1.57%
2012	17,681,865	0.63%	133,360,035	4.52%	128,187,974	4.52%
2013	315,415,541	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%
2020	127,861,225	2.95%	251,758,339	5.72%	245,000,434	5.73%
<b>Most recent five-year geometric average return</b>		<b>5.14%</b>		<b>5.86%</b>		<b>5.87%</b>
<b>Most recent ten-year geometric average return</b>		<b>7.04%</b>		<b>5.61%</b>		<b>5.57%</b>

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

## Section 2: Actuarial Valuation Results

Section 2, 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 Ended June 30, 2009 – 2020



## Section 2: Actuarial Valuation Results

### Contributions

Contributions for the year ended June 30, 2020 totaled \$331.8 million, compared to the projected amount of \$329.1 million. This resulted in a gain of \$2.7 million from contribution experience for the year, when adjusted for timing.

### Non-Investment 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, 2020 amounted to \$10.4 million, which is 0.1% of the Actuarial Accrued Liability. See *Section 2, Subsection E* for a detailed development of the Unfunded Actuarial Accrued Liability.

## Section 2: Actuarial Valuation Results

### D. Other Changes in the Actuarial Accrued Liability

The Actuarial Accrued Liability as of June 30, 2020 is \$7.0 billion, an increase of \$0.4 billion, or 5.8%, 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 and Methods

The results of this valuation reflect changes in the actuarial assumptions adopted by the Board for the June 30, 2020 valuation. The assumption changes resulted in an increase of \$146.6 million in the Actuarial Accrued Liability.

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*.

## Section 2: Actuarial Valuation Results

### E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended June 30, 2020

<b>1</b>	<b>Unfunded Actuarial Accrued Liability at beginning of year</b>	<b>\$2,330,922</b>
2	Total Normal Cost at middle of year <sup>1</sup>	127,955
3	Expected administrative expenses	5,507
4	Expected employer and member contributions <sup>2</sup>	(329,121)
5	Interest	<u>163,197</u>
6	Expected Unfunded Actuarial Accrued Liability at end of year	\$2,298,460
7	Changes due to:	
	a) Investment return less than expected (after “smoothing”)	\$65,123
	b) Actual contributions greater than expected in item 4	(2,746)
	c) Individual salary increases lower than expected	(13,666)
	d) Other experience loss	3,252
	e) Changes in actuarial assumptions	<u>146,618</u>
	Total changes	<u>\$198,581</u>
<b>8</b>	<b>Unfunded Actuarial Accrued Liability at end of year</b>	<b>\$2,497,041</b>

Note: The sum of items 7c through 7d equals the “Net gain from other experience” shown in *Section 2, Subsection C*.

<sup>1</sup> Excludes administrative expense load.

<sup>2</sup> Includes contributions towards administration expenses.

## Section 2: Actuarial Valuation Results

### 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, 2020, the average recommended employer contribution is 49.16% 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, 2020 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 Ended June 30

	2020		2019	
	Amount (\$ in '000s)	% of Projected Compensation <sup>1</sup>	Amount (\$ in '000s)	% of Projected Compensation <sup>1</sup>
<b>1</b> Total Normal Cost <sup>2</sup>	\$128,583	20.26%	\$129,299	21.12%
<b>2</b> Expected member contributions	<u>42,783</u>	<u>6.74%</u>	<u>40,841</u>	<u>6.67%</u>
<b>3</b> Employer Normal Cost: <b>1 – 2</b>	\$85,800	13.52%	\$88,458	14.45%
<b>4</b> Actuarial Accrued Liability	\$7,005,589		\$6,622,495	
<b>5</b> Valuation Value of Assets	<u>4,508,548</u>		<u>4,291,573</u>	
<b>6</b> Unfunded Actuarial Accrued Liability: <b>4 – 5</b>	\$2,497,041		\$2,330,922	
<b>7</b> Payment on Unfunded Actuarial Accrued Liability	<u>226,162</u>	<u>35.64%</u>	<u>199,822</u>	<u>32.64%</u>
<b>8</b> Total average recommended employer contribution: <b>3 + 7</b>	\$311,962	49.16%	\$288,280	47.09%
<b>9</b> Projected compensation	<b>\$634,570</b>		<b>\$612,277</b>	

<sup>1</sup> Contributions are assumed to be paid at the middle of the year.

<sup>2</sup> Includes administrative expense load.



## Section 2: Actuarial Valuation Results

### Reconciliation of Average Recommended Employer Contribution Rate

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

#### Reconciliation from June 30, 2019 to June 30, 2020

	Contribution Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>1</b> Average Recommended Employer Contribution as of June 30, 2019	<b>47.09%</b>	<b>\$288,280</b>
<b>2</b> Effect of investment return less than expected (after "smoothing")	0.79%	5,013
<b>3</b> Effect of actual contributions greater than expected	(0.03%)	(190)
<b>4</b> Effect of individual salary increases lower than expected	(0.16%)	(1,015)
<b>5</b> Effect of amortizing prior year's UAAL over a smaller than expected projected total payroll	0.12%	761
<b>6</b> Effect of changes in demographics of members amongst tiers on Normal Cost	(0.90%)	(5,711)
<b>7</b> Effect of other experience gain <sup>2</sup>	(0.09%)	9,975
<b>8</b> Effect of changes in actuarial assumptions	<u>2.34%</u>	<u>14,849</u>
<b>9</b> Total change	2.07%	\$23,682
<b>10</b> Average Recommended Employer Contribution as of June 30, 2020	<b>49.16%</b>	<b>\$311,962</b>

<sup>1</sup> Based on projected compensation for each valuation date shown.

<sup>2</sup> Other differences in actual versus expected experience. Estimated annual dollar cost also reflects the change in total projected compensation from the prior valuation.

## Section 2: Actuarial Valuation Results

### Reconciliation of Average Recommended Member Contribution Rate

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

#### Reconciliation from June 30, 2019 to June 30, 2020

		Contribution Rate	Estimated Annual Dollar Amount <sup>1</sup> (\$ in '000s)
<b>1</b>	<b>Average Recommended Member Contribution as of June 30, 2019</b>	<b>6.67%</b>	<b>\$40,841</b>
<b>2</b>	Effect of changes in member demographics amongst tiers	0.03%	190
<b>3</b>	Effect of net other changes <sup>2</sup>	0.02%	1,625
<b>4</b>	Effect of changes in actuarial assumptions	<u>0.02%</u>	<u>127</u>
<b>5</b>	Total change	0.07%	1,942
<b>6</b>	<b>Average Recommended Member Contribution as of June 30, 2020</b>	<b>6.74%</b>	<b>\$42,783</b>

<sup>1</sup> Based on projected compensation for each valuation date shown.

<sup>2</sup> Other differences in actual versus expected experience. Estimated annual dollar cost also reflects the change in total projected compensation from the prior valuation.

## Section 2: Actuarial Valuation Results

### 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 <sup>1</sup>
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% <sup>2</sup>	Yes	Yes	Yes	3/12/2011 <sup>3</sup>
Safety – County Tier I	County Safety Tier I	31664.1 (3% @ 50)	31639.25	3/200 of FAS1 at age 50 <sup>4</sup>	Yes	Yes	Yes	Varies <sup>1</sup>

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 <sup>5</sup>	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 <sup>4</sup>	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

<sup>1</sup> See next page for member contribution rates by employee association and bargaining unit.

<sup>2</sup> Court employees in Tier I pay an additional 8% of the base salary for their entire career.

<sup>3</sup> 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).

<sup>4</sup> Safety Tier I and Safety Tier IIA members stop paying contributions upon attaining 30 years of continuous county service.

<sup>5</sup> KCPA (Prosecutors) employee association adopted Tier IIA effective July 5, 2008.

## Section 2: Actuarial Valuation Results

### 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 <sup>1</sup>	1/6 <sup>th</sup> Rate Start <sup>1</sup>	1/3 <sup>rd</sup> Rate Start <sup>1</sup>	“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 <sup>2</sup>	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 <sup>3</sup>	5/4/2013	5/3/2014	3/31/2007 <sup>4</sup>
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 <sup>4</sup>
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 <sup>5</sup>

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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.

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

## Section 2: Actuarial Valuation Results

### 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 <sup>1</sup>
District – Berrenda Mesa Water Tier I	Declining Employers Tier I	31676.17 (3% @ 60) <sup>2</sup>	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%) <sup>3</sup>	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) <sup>2</sup>	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) <sup>4</sup>	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 <sup>5</sup>	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 <sup>6</sup>
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

<sup>1</sup> 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).

<sup>2</sup> District Category IV adopted the 3% @ 60 Formula on a prospective basis only. Member contribution rates are the same as General Tier I.

<sup>3</sup> 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.

<sup>4</sup> For Kern County Water Agency (District Category I) employees hired prior to August 22, 2004, the employer picks up 100% of all member contributions.

<sup>5</sup> 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.

<sup>6</sup> 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.

## Section 2: Actuarial Valuation Results

### 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 <sup>1</sup>	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 <sup>1</sup>	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 <sup>1</sup>	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 <sup>1</sup>	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 <sup>1</sup>	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 <sup>2</sup>	7/31/2012	No	Yes
District – Shafter Recreation & Park Tier IIA <sup>1</sup>	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 <sup>1</sup>	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 <sup>1</sup>	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

<sup>1</sup> These districts adopted Tier IIA, but had no Tier IIA employees as of the valuation date.

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

## Section 2: Actuarial Valuation Results

### 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	Tier Adoption Date	Soc Sec Integration	Pre-Tax
District – Berrenda Mesa Water Tier IIB <sup>1</sup>	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 <sup>1</sup>	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 <sup>1</sup>	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 <sup>1</sup>	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 <sup>1</sup>	District Category II Tier III	7522.20(a) (2.50% @ 67)	7522.30(a)	50% of Normal Cost rate	1/1/2013	No	No

<sup>1</sup> These districts adopted Tier IIB or Tier III, but had no employees in those tiers as of the valuation date.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Current Valuation

June 30, 2020 Actuarial Valuation

	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>County General Tier I without Courts</b>								
Normal Cost	13.58%	\$20,072	4.28%	\$6,326	1.33%	\$1,965	19.19%	\$28,363
UAAL	21.26%	31,423	3.40%	5,025	4.89%	7,228	29.55%	43,676
<b>Total Contributions</b>	<b>34.84%</b>	<b>\$51,495</b>	<b>7.68%</b>	<b>\$11,351</b>	<b>6.22%</b>	<b>\$9,193</b>	<b>48.74%</b>	<b>\$72,039</b>
<b>County General Tier IIA without Courts</b>								
Normal Cost	3.87%	\$2,667	2.15%	\$1,482	0.66%	\$455	6.68%	\$4,604
UAAL	21.26%	14,653	3.40%	2,343	4.89%	3,370	29.55%	20,366
<b>Total Contributions</b>	<b>25.13%</b>	<b>\$17,320</b>	<b>5.55%</b>	<b>\$3,825</b>	<b>5.55%</b>	<b>\$3,825</b>	<b>36.23%</b>	<b>\$24,970</b>
<b>County General Tier IIB without Courts</b>								
Normal Cost	4.87%	\$10,063	1.04%	\$2,149	0.32%	\$661	6.23%	\$12,873
UAAL	21.26%	43,930	3.40%	7,026	4.89%	10,104	29.55%	61,060
<b>Total Contributions</b>	<b>26.13%</b>	<b>\$53,993</b>	<b>4.44%</b>	<b>\$9,175</b>	<b>5.21%</b>	<b>\$10,765</b>	<b>35.78%</b>	<b>\$73,933</b>
<b>County General without Courts – Combined</b>								
Normal Cost	7.75%	\$32,802	2.35%	\$9,957	0.73%	\$3,081	10.83%	\$45,840
UAAL	21.26%	90,006	3.40%	14,394	4.89%	20,702	29.55%	125,102
<b>Total Contributions</b>	<b>29.01%</b>	<b>\$122,808</b>	<b>5.75%</b>	<b>\$24,351</b>	<b>5.62%</b>	<b>\$23,783</b>	<b>40.38%</b>	<b>\$170,942</b>
<b>Courts Tier I</b>								
Normal Cost	10.75%	\$1,536	4.28%	\$612	1.33%	\$190	16.36%	\$2,338
UAAL	21.26%	3,038	3.40%	486	4.89%	699	29.55%	4,223
<b>Total Contributions</b>	<b>32.01%</b>	<b>\$4,574</b>	<b>7.68%</b>	<b>\$1,098</b>	<b>6.22%</b>	<b>\$889</b>	<b>45.91%</b>	<b>\$6,561</b>
<b>Courts Tier IIA</b>								
Normal Cost	4.15%	\$151	2.15%	\$78	0.66%	\$25	6.96%	\$254
UAAL	21.26%	775	3.40%	124	4.89%	178	29.55%	1,077
<b>Total Contributions</b>	<b>25.41%</b>	<b>\$926</b>	<b>5.55%</b>	<b>\$202</b>	<b>5.55%</b>	<b>\$203</b>	<b>36.51%</b>	<b>\$1,331</b>
<b>Courts Tier IIB</b>								
Normal Cost	4.87%	\$723	1.04%	\$154	0.32%	\$47	6.23%	\$924
UAAL	21.26%	3,155	3.40%	505	4.89%	725	29.55%	4,385
<b>Total Contributions</b>	<b>26.13%</b>	<b>\$3,878</b>	<b>4.44%</b>	<b>\$659</b>	<b>5.21%</b>	<b>\$772</b>	<b>35.78%</b>	<b>\$5,309</b>

<sup>1</sup> Based on June 30, 2020 projected compensation as shown on page 46.



## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Current Valuation (continued)

June 30, 2020 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>Courts – Combined</b>								
Normal Cost	7.35%	\$2,410	2.58%	\$844	0.80%	\$262	10.73%	\$3,516
UAAL	21.26%	6,968	3.40%	1,115	4.89%	1,602	29.55%	9,685
<b>Total Contributions</b>	<b>28.61%</b>	<b>\$9,378</b>	<b>5.98%</b>	<b>\$1,959</b>	<b>5.69%</b>	<b>\$1,864</b>	<b>40.28%</b>	<b>\$13,201</b>
<b>County Safety Tier I</b>								
Normal Cost	17.60%	\$17,852	6.48%	\$6,573	2.08%	\$2,110	26.16%	\$26,535
UAAL	35.71%	36,222	7.83%	7,942	11.67%	11,838	55.21%	56,002
<b>Total Contributions</b>	<b>53.31%</b>	<b>\$54,074</b>	<b>14.31%</b>	<b>\$14,515</b>	<b>13.75%</b>	<b>\$13,948</b>	<b>81.37%</b>	<b>\$82,537</b>
<b>County Safety Tier IIA</b>								
Normal Cost	10.97%	\$840	4.99%	\$382	1.58%	\$121	17.54%	\$1,343
UAAL	35.71%	2,734	7.83%	600	11.67%	893	55.21%	4,227
<b>Total Contributions</b>	<b>46.68%</b>	<b>\$3,574</b>	<b>12.82%</b>	<b>\$982</b>	<b>13.25%</b>	<b>\$1,014</b>	<b>72.75%</b>	<b>\$5,570</b>
<b>County Safety Tier IIB</b>								
Normal Cost	9.88%	\$2,948	2.43%	\$725	0.76%	\$227	13.07%	\$3,900
UAAL	35.71%	10,656	7.83%	2,336	11.67%	3,482	55.21%	16,474
<b>Total Contributions</b>	<b>45.59%</b>	<b>\$13,604</b>	<b>10.26%</b>	<b>\$3,061</b>	<b>12.43%</b>	<b>\$3,709</b>	<b>68.28%</b>	<b>\$20,374</b>
<b>County Safety – Combined</b>								
Normal Cost	15.58%	\$21,640	5.53%	\$7,680	1.76%	\$2,458	22.87%	\$31,778
UAAL	35.71%	49,612	7.83%	10,878	11.67%	16,213	55.21%	76,703
<b>Total Contributions</b>	<b>51.29%</b>	<b>\$71,252</b>	<b>13.36%</b>	<b>\$18,558</b>	<b>13.43%</b>	<b>\$18,671</b>	<b>78.08%</b>	<b>\$108,481</b>
<b>All County with Courts – Combined</b>								
Normal Cost	9.55%	\$56,852	3.11%	\$18,481	0.97%	\$5,801	13.63%	\$81,134
UAAL	24.63%	146,586	4.43%	26,387	6.48%	38,517	35.54%	211,490
<b>Total Contributions</b>	<b>34.18%</b>	<b>\$203,438</b>	<b>7.54%</b>	<b>\$44,868</b>	<b>7.45%</b>	<b>\$44,318</b>	<b>49.17%</b>	<b>\$292,624</b>
<b>District Category I Tier I</b>								
Normal Cost	15.75%	\$691	4.28%	\$188	1.33%	\$59	21.36%	\$938
UAAL	26.17%	1,149	4.81%	211	5.04%	221	36.02%	1,581
<b>Total Contributions</b>	<b>41.92%</b>	<b>\$1,840</b>	<b>9.09%</b>	<b>\$399</b>	<b>6.37%</b>	<b>\$280</b>	<b>57.38%</b>	<b>\$2,519</b>

<sup>1</sup> Based on June 30, 2020 projected compensation as shown on page 46.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Current Valuation (continued)

June 30, 2020 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>District Category I Tier IIA</b>								
Normal Cost	4.43%	\$29	2.15%	\$14	0.66%	\$4	7.24%	\$47
UAAL	26.17%	171	4.81%	32	5.04%	33	36.02%	236
<b>Total Contributions</b>	<b>30.60%</b>	<b>\$200</b>	<b>6.96%</b>	<b>\$46</b>	<b>5.70%</b>	<b>\$37</b>	<b>43.26%</b>	<b>\$283</b>
<b>District Category I Tier IIB</b>								
Normal Cost	4.87%	\$53	1.04%	\$11	0.32%	\$4	6.23%	\$68
UAAL	26.17%	287	4.81%	53	5.04%	55	36.02%	395
<b>Total Contributions</b>	<b>31.04%</b>	<b>\$340</b>	<b>5.85%</b>	<b>\$64</b>	<b>5.36%</b>	<b>\$59</b>	<b>42.25%</b>	<b>\$463</b>
<b>District Category I – Combined</b>								
Normal Cost	12.58%	\$773	3.48%	\$213	1.08%	\$67	17.14%	\$1,053
UAAL	26.17%	1,607	4.81%	296	5.04%	309	36.02%	2,212
<b>Total Contributions</b>	<b>38.75%</b>	<b>\$2,380</b>	<b>8.29%</b>	<b>\$509</b>	<b>6.12%</b>	<b>\$376</b>	<b>53.16%</b>	<b>\$3,265</b>
<b>District Category II Tier I</b>								
Normal Cost	13.38%	\$222	4.28%	\$71	1.33%	\$23	18.99%	\$316
UAAL	26.17%	435	4.81%	80	5.04%	84	36.02%	599
<b>Total Contributions</b>	<b>39.55%</b>	<b>\$657</b>	<b>9.09%</b>	<b>\$151</b>	<b>6.37%</b>	<b>\$107</b>	<b>55.01%</b>	<b>\$915</b>
<b>District Category II Tier IIB</b>								
Normal Cost	4.87%	\$44	1.04%	\$9	0.32%	\$3	6.23%	\$56
UAAL	26.17%	235	4.81%	43	5.04%	46	36.02%	324
<b>Total Contributions</b>	<b>31.04%</b>	<b>\$279</b>	<b>5.85%</b>	<b>\$52</b>	<b>5.36%</b>	<b>\$49</b>	<b>42.25%</b>	<b>\$380</b>
<b>District Category II Tier III</b>								
Normal Cost	5.78%	\$0	1.20%	\$0	0.37%	\$0	7.35%	\$0
UAAL	26.17%	0	4.81%	0	5.04%	0	36.02%	0
<b>Total Contributions</b>	<b>31.95%</b>	<b>\$0</b>	<b>6.01%</b>	<b>\$0</b>	<b>5.41%</b>	<b>\$0</b>	<b>43.37%</b>	<b>\$0</b>
<b>District Category II – Combined</b>								
Normal Cost	10.38%	\$266	3.12%	\$80	1.05%	\$26	14.55%	\$372
UAAL	26.17%	670	4.81%	123	5.04%	130	36.02%	923
<b>Total Contributions</b>	<b>36.55%</b>	<b>\$936</b>	<b>7.93%</b>	<b>\$203</b>	<b>6.09%</b>	<b>\$156</b>	<b>50.57%</b>	<b>\$1,295</b>

<sup>1</sup> Based on June 30, 2020 projected compensation as shown on page 46.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Current Valuation (continued)

June 30, 2020 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>District Category III Tier I (Buttonwillow)</b>								
Normal Cost	10.24%	\$4	4.28%	\$2	1.33%	\$0	15.85%	\$6
UAAL	26.17%	10	4.81%	2	5.04%	2	36.02%	14
<b>Total Contributions</b>	<b>36.41%</b>	<b>\$14</b>	<b>9.09%</b>	<b>\$4</b>	<b>6.37%</b>	<b>\$2</b>	<b>51.87%</b>	<b>\$20</b>
<b>District Category III Tier I (SJVAPCD)</b>								
Normal Cost	9.46%	\$1,886	2.14%	\$427	0.67%	\$134	12.27%	\$2,447
UAAL	26.17%	5,218	4.81%	959	5.04%	1,005	36.02%	7,182
<b>Total Contributions</b>	<b>35.63%</b>	<b>\$7,104</b>	<b>6.95%</b>	<b>\$1,386</b>	<b>5.71%</b>	<b>\$1,139</b>	<b>48.29%</b>	<b>\$9,629</b>
<b>District Category III Tier IIA (Buttonwillow)</b>								
Normal Cost	3.83%	\$0	2.15%	\$0	0.66%	\$0	6.64%	\$0
UAAL	26.17%	0	4.81%	0	5.04%	0	36.02%	0
<b>Total Contributions</b>	<b>30.00%</b>	<b>\$0</b>	<b>6.96%</b>	<b>\$0</b>	<b>5.70%</b>	<b>\$0</b>	<b>42.66%</b>	<b>\$0</b>
<b>District Category III Tier IIA (SJVAPCD)</b>								
Normal Cost	5.31%	\$55	1.09%	\$11	0.33%	\$4	6.73%	\$70
UAAL	26.17%	273	4.81%	50	5.04%	53	36.02%	376
<b>Total Contributions</b>	<b>31.48%</b>	<b>\$328</b>	<b>5.90%</b>	<b>\$61</b>	<b>5.37%</b>	<b>\$57</b>	<b>42.75%</b>	<b>\$446</b>
<b>District Category III Tier IIB</b>								
Normal Cost	4.87%	\$382	1.04%	\$82	0.32%	\$24	6.23%	\$488
UAAL	26.17%	2,051	4.81%	377	5.04%	396	36.02%	2,824
<b>Total Contributions</b>	<b>31.04%</b>	<b>\$2,433</b>	<b>5.85%</b>	<b>\$459</b>	<b>5.36%</b>	<b>\$420</b>	<b>42.25%</b>	<b>\$3,312</b>
<b>District Category III – Combined</b>								
Normal Cost	8.06%	\$2,327	1.81%	\$522	0.57%	\$162	10.44%	\$3,011
UAAL	26.17%	7,552	4.81%	1,388	5.04%	1,456	36.02%	10,396
<b>Total Contributions</b>	<b>34.23%</b>	<b>\$9,879</b>	<b>6.62%</b>	<b>\$1,910</b>	<b>5.61%</b>	<b>\$1,618</b>	<b>46.46%</b>	<b>\$13,407</b>
<b>District Category V Tier 1</b>								
Normal Cost	13.28%	\$19	4.28%	\$6	1.33%	\$2	18.89%	\$27
UAAL	26.17%	38	4.81%	7	5.04%	7	36.02%	52
<b>Total Contributions</b>	<b>39.45%</b>	<b>\$57</b>	<b>9.09%</b>	<b>\$13</b>	<b>6.37%</b>	<b>\$9</b>	<b>54.91%</b>	<b>\$79</b>

<sup>1</sup> Based on June 30, 2020 projected compensation as shown on page 46.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Current Valuation (continued)

June 30, 2020 Actuarial Valuation

	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>District Category V Tier IIA</b>								
Normal Cost	4.57%	\$18	2.15%	\$9	0.66%	\$3	7.38%	\$30
UAAL	26.17%	105	4.81%	19	5.04%	21	36.02%	145
<b>Total Contributions</b>	<b>30.74%</b>	<b>\$123</b>	<b>6.96%</b>	<b>\$28</b>	<b>5.70%</b>	<b>\$24</b>	<b>43.40%</b>	<b>\$175</b>
<b>District Category V Tier IIB</b>								
Normal Cost	4.87%	\$42	1.04%	\$9	0.32%	\$3	6.23%	\$54
UAAL	26.17%	226	4.81%	41	5.04%	43	36.02%	310
<b>Total Contributions</b>	<b>31.04%</b>	<b>\$268</b>	<b>5.85%</b>	<b>\$50</b>	<b>5.36%</b>	<b>\$46</b>	<b>42.25%</b>	<b>\$364</b>
<b>District Category V – Combined</b>								
Normal Cost	5.63%	\$79	1.65%	\$24	0.56%	\$8	7.84%	\$111
UAAL	26.17%	369	4.81%	67	5.04%	71	36.02%	507
<b>Total Contributions</b>	<b>31.80%</b>	<b>\$448</b>	<b>6.46%</b>	<b>\$91</b>	<b>5.60%</b>	<b>\$79</b>	<b>43.86%</b>	<b>\$618</b>
<b>District Category VI Tier I</b>								
Normal Cost	18.80%	\$70	4.28%	\$16	1.33%	\$4	24.41%	\$90
UAAL	26.17%	97	4.81%	18	5.04%	18	36.02%	133
<b>Total Contributions</b>	<b>44.97%</b>	<b>\$167</b>	<b>9.09%</b>	<b>\$34</b>	<b>6.37%</b>	<b>\$22</b>	<b>60.43%</b>	<b>\$223</b>
<b>District Category VI Tier IIB</b>								
Normal Cost	4.87%	\$0	1.04%	\$0	0.32%	\$0	6.23%	\$0
UAAL	26.17%	0	4.81%	0	5.04%	0	36.02%	0
<b>Total Contributions</b>	<b>31.04%</b>	<b>\$0</b>	<b>5.85%</b>	<b>\$0</b>	<b>5.36%</b>	<b>\$0</b>	<b>42.25%</b>	<b>\$0</b>
<b>District Category VI – Combined</b>								
Normal Cost	18.80%	\$70	4.28%	\$16	1.33%	\$4	24.41%	\$90
UAAL	26.17%	97	4.81%	18	5.04%	18	36.02%	133
<b>Total Contributions</b>	<b>44.97%</b>	<b>\$167</b>	<b>9.09%</b>	<b>\$34</b>	<b>6.37%</b>	<b>\$22</b>	<b>60.43%</b>	<b>\$223</b>
<b>Declining Employers Tier 1 (Berrenda)</b>								
Normal Cost	12.68%	\$21	3.60%	\$6	1.19%	\$2	17.47%	\$29
UAAL	189.86%	317	62.12%	104	41.40%	69	293.38%	490
<b>Total Contributions<sup>2</sup></b>	<b>202.54%</b>	<b>\$338</b>	<b>65.72%</b>	<b>\$110</b>	<b>42.59%</b>	<b>\$71</b>	<b>310.85%</b>	<b>\$519</b>

<sup>1</sup> Based on June 30, 2020 projected compensation as shown on page 46.

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

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Current Valuation (continued)

June 30, 2020 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>Declining Employers Tier 1 (Inyokern)</b>								
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
<b>Total Contributions<sup>2</sup></b>	<b>N/A</b>	<b>\$9</b>	<b>N/A</b>	<b>\$1</b>	<b>N/A</b>	<b>\$1</b>	<b>N/A</b>	<b>\$11</b>
<b>Declining Employers – Combined</b>								
Normal Cost	12.57%	\$21	3.60%	\$6	1.20%	\$2	17.37%	\$29
UAAL	195.21%	326	62.87%	105	41.92%	70	300.00%	501
<b>Total Contributions</b>	<b>207.78%</b>	<b>\$347</b>	<b>66.47%</b>	<b>\$111</b>	<b>43.12%</b>	<b>\$72</b>	<b>317.37%</b>	<b>\$530</b>
<b>All Districts – Combined</b>								
Normal Cost	8.95%	\$3,536	2.18%	\$861	0.68%	\$269	11.81%	\$4,666
UAAL	26.88%	10,621	5.05%	1,997	5.21%	2,054	37.14%	14,672
<b>Total Contributions</b>	<b>35.83%</b>	<b>\$14,157</b>	<b>7.23%</b>	<b>\$2,858</b>	<b>5.89%</b>	<b>\$2,323</b>	<b>48.95%</b>	<b>\$19,338</b>
<b>All Employers – Combined</b>								
Normal Cost	9.52%	\$60,388	3.05%	\$19,342	0.95%	\$6,070	13.52%	\$85,800
UAAL	24.77%	157,207	4.47%	28,384	6.40%	40,571	35.64%	226,162
<b>Total Contributions</b>	<b>34.29%</b>	<b>\$217,595</b>	<b>7.52%</b>	<b>\$47,726</b>	<b>7.35%</b>	<b>\$46,641</b>	<b>49.16%</b>	<b>\$311,962</b>

<sup>1</sup> Based on June 30, 2020 projected compensation as shown on page 46.

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

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Current Valuation (continued)

	June 30, 2020 Projected Compensation (\$ in '000s)		June 30, 2020 Projected Compensation (\$ in '000s)
County General Tier I without Courts	\$147,803	District Category I Tier I	4,390
County General Tier IIA without Courts	68,921	District Category I Tier IIA	655
County General Tier IIB without Courts	206,633	District Category I Tier IIB	1,097
Courts Tier I	14,291	District Category II Tier I	1,662
Courts Tier IIA	3,644	District Category II Tier IIB	899
Courts Tier IIB	14,839	District Category II Tier III	0
County Safety Tier I	101,434	District Category III Tier I (Buttonwillow)	39
County Safety Tier IIA	7,657	District Category III Tier I (SJVAPCD)	19,939
County Safety Tier IIB	29,839	District Category III Tier IIA (Buttonwillow)	0
		District Category III Tier IIA (SJVAPCD)	1,043
		District Category III Tier IIB	7,839
		District Category V Tier I	145
		District Category V Tier IIA	402
		District Category V Tier IIB	862
		District Category VI Tier I	370
		District Category VI Tier IIB	0
		Declining Employers Tier 1 (Berrenda)	167
		Declining Employers Tier 1 (Inyokern)	0
		All Districts	\$39,509
All County with Courts	\$595,061	Total	\$634,570

Note: As of June 30, 2020, the COLA Contribution Reserve was zero and, therefore, not available to offset the 2% COLA contribution rate.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Prior Valuation

June 30, 2019 Actuarial Valuation

	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>County General Tier I without Courts</b>								
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
<b>Total Contributions</b>	<b>33.74%</b>	<b>\$53,224</b>	<b>7.08%</b>	<b>\$11,168</b>	<b>5.60%</b>	<b>\$8,835</b>	<b>46.42%</b>	<b>\$73,227</b>
<b>County General Tier IIA without Courts</b>								
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
<b>Total Contributions</b>	<b>24.06%</b>	<b>\$16,770</b>	<b>5.01%</b>	<b>\$3,492</b>	<b>4.95%</b>	<b>\$3,449</b>	<b>34.02%</b>	<b>\$23,711</b>
<b>County General Tier IIB without Courts</b>								
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
<b>Total Contributions</b>	<b>24.86%</b>	<b>\$43,241</b>	<b>3.93%</b>	<b>\$6,835</b>	<b>4.62%</b>	<b>\$8,036</b>	<b>33.41%</b>	<b>\$58,112</b>
<b>County General without Courts – Combined</b>								
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
<b>Total Contributions</b>	<b>28.21%</b>	<b>\$113,235</b>	<b>5.36%</b>	<b>\$21,495</b>	<b>5.06%</b>	<b>\$20,320</b>	<b>38.63%</b>	<b>\$155,050</b>
<b>Courts Tier I</b>								
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
<b>Total Contributions</b>	<b>30.72%</b>	<b>\$4,825</b>	<b>7.08%</b>	<b>\$1,112</b>	<b>5.60%</b>	<b>\$880</b>	<b>43.40%</b>	<b>\$6,817</b>
<b>Courts Tier IIA</b>								
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
<b>Total Contributions</b>	<b>24.32%</b>	<b>\$786</b>	<b>5.01%</b>	<b>\$162</b>	<b>4.95%</b>	<b>\$161</b>	<b>34.28%</b>	<b>\$1,109</b>
<b>Courts Tier IIB</b>								
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
<b>Total Contributions</b>	<b>24.86%</b>	<b>\$3,338</b>	<b>3.93%</b>	<b>\$528</b>	<b>4.62%</b>	<b>\$620</b>	<b>33.41%</b>	<b>\$4,486</b>

<sup>1</sup> Based on June 30, 2019 projected compensation as shown on page 53.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Prior Valuation (continued)

June 30, 2019 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>Courts – Combined</b>								
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
<b>Total Contributions</b>	<b>27.65%</b>	<b>\$8,949</b>	<b>5.57%</b>	<b>\$1,802</b>	<b>5.13%</b>	<b>\$1,661</b>	<b>38.35%</b>	<b>\$12,412</b>
<b>County Safety Tier I</b>								
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
<b>Total Contributions</b>	<b>50.65%</b>	<b>\$53,773</b>	<b>13.57%</b>	<b>\$14,407</b>	<b>12.00%</b>	<b>\$12,739</b>	<b>76.22%</b>	<b>\$80,919</b>
<b>County Safety Tier IIA</b>								
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
<b>Total Contributions</b>	<b>44.45%</b>	<b>\$3,299</b>	<b>12.38%</b>	<b>\$919</b>	<b>11.62%</b>	<b>\$863</b>	<b>68.45%</b>	<b>\$5,081</b>
<b>County Safety Tier IIB</b>								
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
<b>Total Contributions</b>	<b>42.67%</b>	<b>\$11,718</b>	<b>9.60%</b>	<b>\$2,636</b>	<b>10.73%</b>	<b>\$2,947</b>	<b>63.00%</b>	<b>\$17,301</b>
<b>County Safety – Combined</b>								
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
<b>Total Contributions</b>	<b>48.77%</b>	<b>\$68,790</b>	<b>12.73%</b>	<b>\$17,962</b>	<b>11.74%</b>	<b>\$16,549</b>	<b>73.24%</b>	<b>\$103,301</b>
<b>All County with Courts – Combined</b>								
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
<b>Total Contributions</b>	<b>33.22%</b>	<b>\$190,974</b>	<b>7.18%</b>	<b>\$41,259</b>	<b>6.71%</b>	<b>\$38,530</b>	<b>47.11%</b>	<b>\$270,763</b>
<b>District Category I Tier I</b>								
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
<b>Total Contributions</b>	<b>40.58%</b>	<b>\$2,007</b>	<b>8.37%</b>	<b>\$414</b>	<b>5.68%</b>	<b>\$281</b>	<b>54.63%</b>	<b>\$2,702</b>

<sup>1</sup> Based on June 30, 2019 projected compensation as shown on page 53.



## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Prior Valuation (continued)

June 30, 2019 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>District Category I Tier IIA</b>								
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
<b>Total Contributions</b>	<b>29.33%</b>	<b>\$226</b>	<b>6.30%</b>	<b>\$48</b>	<b>5.03%</b>	<b>\$39</b>	<b>40.66%</b>	<b>\$313</b>
<b>District Category I Tier IIB</b>								
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
<b>Total Contributions</b>	<b>29.69%</b>	<b>\$158</b>	<b>5.22%</b>	<b>\$28</b>	<b>4.70%</b>	<b>\$25</b>	<b>39.61%</b>	<b>\$211</b>
<b>District Category I – Combined</b>								
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
<b>Total Contributions</b>	<b>38.25%</b>	<b>\$2,391</b>	<b>7.84%</b>	<b>\$490</b>	<b>5.52%</b>	<b>\$345</b>	<b>51.61%</b>	<b>\$3,226</b>
<b>District Category II Tier I</b>								
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
<b>Total Contributions</b>	<b>38.76%</b>	<b>\$691</b>	<b>8.37%</b>	<b>\$149</b>	<b>5.68%</b>	<b>\$101</b>	<b>52.81%</b>	<b>\$941</b>
<b>District Category II Tier IIB</b>								
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
<b>Total Contributions</b>	<b>29.69%</b>	<b>\$174</b>	<b>5.22%</b>	<b>\$30</b>	<b>4.70%</b>	<b>\$28</b>	<b>39.61%</b>	<b>\$232</b>
<b>District Category II Tier III</b>								
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
<b>Total Contributions</b>	<b>30.56%</b>	<b>\$0</b>	<b>5.35%</b>	<b>\$0</b>	<b>4.75%</b>	<b>\$0</b>	<b>40.66%</b>	<b>\$0</b>
<b>District Category II – Combined</b>								
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
<b>Total Contributions</b>	<b>36.54%</b>	<b>\$865</b>	<b>7.56%</b>	<b>\$179</b>	<b>5.46%</b>	<b>\$129</b>	<b>49.56%</b>	<b>\$1,173</b>

<sup>1</sup> Based on June 30, 2019 projected compensation as shown on page 53.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Prior Valuation (continued)

June 30, 2019 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>District Category III Tier I (Buttonwillow)</b>								
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
<b>Total Contributions</b>	<b>35.30%</b>	<b>\$13</b>	<b>8.37%</b>	<b>\$4</b>	<b>5.68%</b>	<b>\$1</b>	<b>49.35%</b>	<b>\$18</b>
<b>District Category III Tier I (SJVAPCD)</b>								
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
<b>Total Contributions</b>	<b>34.26%</b>	<b>\$6,685</b>	<b>6.27%</b>	<b>\$1,224</b>	<b>5.04%</b>	<b>\$982</b>	<b>45.57%</b>	<b>\$8,891</b>
<b>District Category III Tier IIA (Buttonwillow)</b>								
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
<b>Total Contributions</b>	<b>28.83%</b>	<b>\$0</b>	<b>6.30%</b>	<b>\$0</b>	<b>5.03%</b>	<b>\$0</b>	<b>40.16%</b>	<b>\$0</b>
<b>District Category III Tier IIA (SJVAPCD)</b>								
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
<b>Total Contributions</b>	<b>30.10%</b>	<b>\$353</b>	<b>5.24%</b>	<b>\$62</b>	<b>4.71%</b>	<b>\$56</b>	<b>40.05%</b>	<b>\$471</b>
<b>District Category III Tier IIB</b>								
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
<b>Total Contributions</b>	<b>29.69%</b>	<b>\$1,869</b>	<b>5.22%</b>	<b>\$329</b>	<b>4.70%</b>	<b>\$295</b>	<b>39.61%</b>	<b>\$2,493</b>
<b>District Category III – Combined</b>								
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
<b>Total Contributions</b>	<b>33.02%</b>	<b>\$8,920</b>	<b>5.99%</b>	<b>\$1,619</b>	<b>4.94%</b>	<b>\$1,334</b>	<b>43.95%</b>	<b>\$11,873</b>
<b>District Category V Tier 1</b>								
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
<b>Total Contributions</b>	<b>38.00%</b>	<b>\$54</b>	<b>8.37%</b>	<b>\$12</b>	<b>5.68%</b>	<b>\$9</b>	<b>52.05%</b>	<b>\$75</b>

<sup>1</sup> Based on June 30, 2019 projected compensation as shown on page 53.

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Prior Valuation (continued)

June 30, 2019 Actuarial Valuation

	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>District Category V Tier IIA</b>								
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
<b>Total Contributions</b>	<b>29.46%</b>	<b>\$116</b>	<b>6.30%</b>	<b>\$24</b>	<b>5.03%</b>	<b>\$20</b>	<b>40.79%</b>	<b>\$160</b>
<b>District Category V Tier IIB</b>								
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
<b>Total Contributions</b>	<b>29.69%</b>	<b>\$213</b>	<b>5.22%</b>	<b>\$38</b>	<b>4.70%</b>	<b>\$34</b>	<b>39.61%</b>	<b>\$285</b>
<b>District Category V – Combined</b>								
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
<b>Total Contributions</b>	<b>30.52%</b>	<b>\$383</b>	<b>5.90%</b>	<b>\$74</b>	<b>5.01%</b>	<b>\$63</b>	<b>41.43%</b>	<b>\$520</b>
<b>District Category VI Tier I</b>								
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
<b>Total Contributions</b>	<b>43.59%</b>	<b>\$186</b>	<b>8.37%</b>	<b>\$36</b>	<b>5.68%</b>	<b>\$23</b>	<b>57.64%</b>	<b>\$245</b>
<b>District Category VI Tier IIB</b>								
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
<b>Total Contributions</b>	<b>29.69%</b>	<b>\$0</b>	<b>5.22%</b>	<b>\$0</b>	<b>4.70%</b>	<b>\$0</b>	<b>39.61%</b>	<b>\$0</b>
<b>District Category VI – Combined</b>								
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
<b>Total Contributions</b>	<b>43.59%</b>	<b>\$186</b>	<b>8.37%</b>	<b>\$36</b>	<b>5.68%</b>	<b>\$23</b>	<b>57.64%</b>	<b>\$245</b>
<b>Declining Employers Tier 1 (Berrenda)</b>								
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
<b>Total Contributions<sup>2</sup></b>	<b>196.07%</b>	<b>\$315</b>	<b>53.67%</b>	<b>\$86</b>	<b>41.65%</b>	<b>\$68</b>	<b>291.39%</b>	<b>\$469</b>

<sup>1</sup> Based on June 30, 2019 projected compensation as shown on page 53.

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

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Prior Valuation (continued)

June 30, 2019 Actuarial Valuation								
	Basic		2% COLA		0.5% COLA		Total	
	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)	Rate	Estimated Annual Amount <sup>1</sup> (\$ in '000s)
<b>Declining Employers Tier 1 (Inyokern)</b>								
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
<b>Total Contributions<sup>2</sup></b>	<b>N/A</b>	<b>\$9</b>	<b>N/A</b>	<b>\$1</b>	<b>N/A</b>	<b>\$1</b>	<b>N/A</b>	<b>\$11</b>
<b>Declining Employers – Combined</b>								
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
<b>Total Contributions</b>	<b>201.24%</b>	<b>\$324</b>	<b>54.04%</b>	<b>\$87</b>	<b>42.86%</b>	<b>\$69</b>	<b>298.14%</b>	<b>\$480</b>
<b>All Districts – Combined</b>								
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
<b>Total Contributions</b>	<b>34.87%</b>	<b>\$13,069</b>	<b>6.64%</b>	<b>\$2,485</b>	<b>5.23%</b>	<b>\$1,963</b>	<b>46.74%</b>	<b>\$17,517</b>
<b>All Employers – Combined</b>								
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
<b>Total Contributions</b>	<b>33.33%</b>	<b>\$204,043</b>	<b>7.15%</b>	<b>\$43,744</b>	<b>6.61%</b>	<b>\$40,493</b>	<b>47.09%</b>	<b>\$288,280</b>

<sup>1</sup> Based on June 30, 2019 projected compensation as shown on page 53.

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

## Section 2: Actuarial Valuation Results

### Recommended Employer Contribution Rates – Prior Valuation (continued)

	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 1 (Berrenda)	161
		Declining Employers Tier 1 (Inyokern)	0
		All Districts	\$37,477
All County with Courts	\$574,800	Total	\$612,277

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

## Section 2: Actuarial Valuation Results

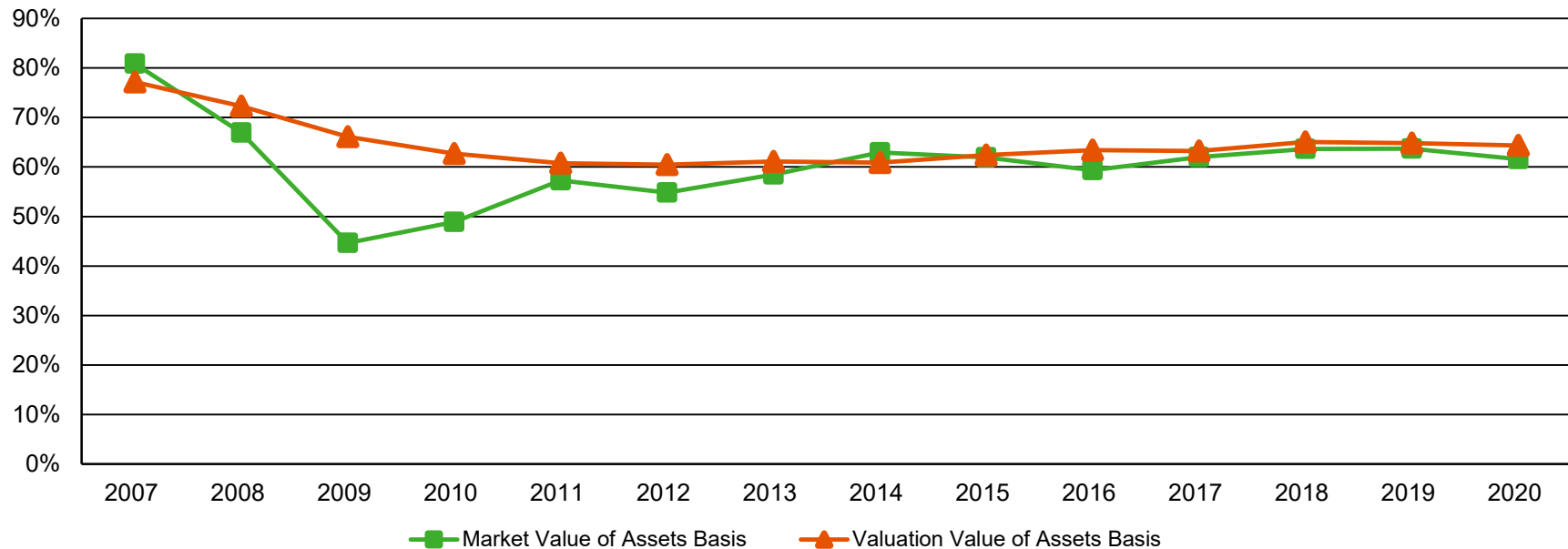
### G. Funded Status

A commonly reported piece of information regarding the plan's financial status is the funded ratio. These ratios compare the Market, Actuarial and Valuation Value of Assets to the Actuarial Accrued Liability of the plan. High ratios indicate a 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 changes.

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 Actuarial, Valuation or Market Value of Assets is used.

Funded Ratio for Years Ended June 30, 2007 – 2020



## Section 2: Actuarial Valuation Results

### Schedule of Funding Progress for Years Ended June 30, 2011 – 2020

Actuarial Valuation Date as of June 30	Valuation Value of Assets <sup>1</sup> (a)	Actuarial Accrued Liability (AAL) <sup>2</sup> (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (%) (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll (%) [(b) - (a)] / (c)
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%
2020	4,508,548,000	7,005,589,000	2,497,041,000	64.4%	634,570,000	393.5%

<sup>1</sup> Excludes 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).

<sup>2</sup> Excludes liabilities held for SRBR Reserves Unallocated to 0.5% COLA benefits.

## Section 2: Actuarial Valuation Results

### 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 for Year Ended

	June 30, 2020 (\$ in '000s)	June 30, 2019 (\$ in '000s)
Actuarial Present Value of Future Benefits		
• Present value of benefits for retired members and beneficiaries	\$4,591,235	\$4,307,189
• Present value of benefits for inactive vested members <sup>1</sup>	231,940	206,769
• Present value of benefits for active members	<u>3,164,715</u>	<u>3,133,629</u>
<b>Total Actuarial Present Value of Future Benefits</b>	<b>\$7,987,890</b>	<b>\$7,647,587</b>
Current and future assets		
• Total Valuation Value of Assets	\$4,508,548	\$4,291,573
• Present value of future contributions by members	374,416	363,761
• Present value of future employer contributions for:		
– Entry age Normal Cost	607,885	661,331
– Unfunded Actuarial Accrued Liability	<u>2,497,041</u>	<u>2,330,922</u>
<b>Total of current and future assets</b>	<b>\$7,987,890</b>	<b>\$7,647,587</b>

<sup>1</sup> Includes inactive members due a refund of member contributions.



## Section 2: Actuarial Valuation Results

### 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 7.0. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 7.0% 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 11.0, but is 9.1 for General compared to 18.0 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.

## Section 2: Actuarial Valuation Results

### Volatility Ratios for Years Ended 2011 – 2020

Year Ended June 30	Asset Volatility Ratio			Liability Volatility Ratio		
	General	Safety	Total	General	Safety	Total
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
2020	5.7	11.8	7.0	9.1	18.0	11.0

## Section 2: Actuarial Valuation Results

### 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 condition, 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 7.0% 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%.

## Section 2: Actuarial Valuation Results

- 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. Effective with the June 30, 2020 valuation, the Board has adopted a benefit-weighted mortality table with the generational projection approach.

- 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 has increased from 60.8% to 64.4%. For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 54.
- The geometric average investment return on the Actuarial Value of Assets over the last 10 years was 5.61%. This includes a high of a 7.28% return and a low of 2.17%. The average over the last 5 years 5.86%. For more details see the Investment Return table in *Section 2, Subsection C* on page 27.
- One of the primary sources 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. The assumption changes in 2020 again updated mortality tables adding \$147 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.

## Section 2: Actuarial Valuation Results

- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in the *Section 3, Exhibit I, Projection of UAAL Balances and Payments* 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 0.80 to 0.93. An increased ratio indicates that the plan has grown in maturity over time. This is to be expected, but is also informative to understanding plan sensitivity to particular risks. For more details see *Section 2, Subsection A, Member Data* on page 17.

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. Over the past year, benefits paid were \$35 million more than contributions received (net of administrative expenses). 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 21.

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* on page 57.

# Section 3: Supplemental Information

## Exhibit A: Table of Plan Coverage

### Total Plan

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	9,326	9,197	1.4%
• Average age	41.9	41.9	0.0
• Average years of service	9.5	9.5	0.0
• Total projected compensation	\$634,569,637	\$612,277,277	3.6%
• Average projected compensation	\$68,043	\$66,574	2.2%
• Account balances	\$384,784,461	\$348,829,754	10.3%
• Total active vested members	5,568	5,607	-0.7%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	3,143	2,877	9.2%
• Average age	42.3	42.4	-0.1
<b>Retired members:</b>			
• Number in pay status	6,559	6,382	2.8%
• Average age	68.9	68.7	0.2
• Average monthly benefit <sup>2</sup>	\$3,754	\$3,653	2.8%
<b>Disabled members:</b>			
• Number in pay status	883	893	-1.1%
• Average age	67.7	67.0	0.7
• Average monthly benefit <sup>2</sup>	\$3,333	\$3,235	3.0%
<b>Beneficiaries:</b>			
• Number in pay status	1,225	1,220	0.4%
• Average age	73.6	73.4	0.2
• Average monthly benefit <sup>2</sup>	\$2,012	\$1,941	3.7%

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General Tier I County with Courts

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	2,191	2,425	-9.6%
• Average age	51.0	50.6	0.4
• Average years of service	18.8	18.1	0.7
• Total projected compensation	\$162,093,865	\$173,455,102	-6.5%
• Average projected compensation	\$73,982	\$71,528	3.4%
• Account balances	\$146,508,105	\$142,797,480	2.6%
• Total active vested members	2,188	2,421	-9.6%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	948	993	-4.5%
• Average age	48.9	48.2	0.7
<b>Retired members:</b>			
• Number in pay status	4,987	4,882	2.2%
• Average age	69.7	69.4	0.3
• Average monthly benefit <sup>2</sup>	\$3,194	\$3,097	3.1%
<b>Disabled members:</b>			
• Number in pay status	451	462	-2.4%
• Average age	68.7	68.1	0.6
• Average monthly benefit <sup>2</sup>	\$2,015	\$1,976	2.0%
<b>Beneficiaries:</b>			
• Number in pay status	786	787	-0.1%
• Average age	74.6	74.5	0.1
• Average monthly benefit <sup>2</sup>	\$1,687	\$1,618	4.3%

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General Tier IIA County with Courts

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	1,026	1,073	-4.4%
• Average age	45.3	44.4	0.9
• Average years of service	9.4	8.4	1.0
• Total projected compensation	\$72,564,278	\$72,932,791	-0.5%
• Average projected compensation	\$70,725	\$67,971	4.1%
• Account balances	\$43,508,370	\$38,319,883	13.5%
• Total active vested members	939	968	-3.0%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	488	500	-2.4%
• Average age	43.7	42.6	1.1
<b>Retired members:</b>			
• Number in pay status	57	43	32.6%
• Average age	66.0	66.1	-0.1
• Average monthly benefit <sup>2</sup>	\$731	\$718	1.8%
<b>Disabled members:</b>			
• Number in pay status	1	1	0.0%
• Average age	58.9	57.9	1.0
• Average monthly benefit <sup>2</sup>	\$2,544	\$2,482	2.5%
<b>Beneficiaries:</b>			
• Number in pay status	5	5	0.0%
• Average age	61.8	60.8	1.0
• Average monthly benefit <sup>2</sup>	\$648	\$633	2.4%

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.



## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### General Tier IIB County with Courts

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	3,999	3,527	13.4%
• Average age	36.9	36.4	0.5
• Average years of service	3.0	2.5	0.5
• Total projected compensation	\$221,472,104	\$187,364,283	18.2%
• Average projected compensation	\$55,382	\$53,123	4.3%
• Account balances	\$40,189,986	\$28,227,226	42.4%
• Total active vested members	786	496	58.5%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	1,171	884	32.5%
• Average age	36.8	36.1	0.7
<b>Retired members:</b>			
• Number in pay status	3	2	50.0%
• Average age	67.6	66.6	1.0
• Average monthly benefit <sup>2</sup>	\$710	\$613	15.8%
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Districts Tier I

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	242	252	-4.0%
• Average age	47.8	47.2	0.6
• Average years of service	16.4	15.7	0.7
• Total projected compensation	\$26,711,469	\$27,006,392	-1.1%
• Average projected compensation	\$110,378	\$107,168	3.0%
• Account balances	\$23,753,321	\$20,469,943	16.0%
• Total active vested members	242	252	-4.0%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	144	147	-2.0%
• Average age	49.9	49.1	0.8
<b>Retired members:</b>			
• Number in pay status	288	280	2.9%
• Average age	67.6	67.1	0.5
• Average monthly benefit <sup>2</sup>	\$3,994	\$3,877	3.0%
<b>Disabled members:</b>			
• Number in pay status	11	11	0.0%
• Average age	65.8	64.8	1.0
• Average monthly benefit <sup>2</sup>	\$2,419	\$2,360	2.5%
<b>Beneficiaries:</b>			
• Number in pay status	38	37	2.7%
• Average age	73.5	73.7	-0.2
• Average monthly benefit <sup>2</sup>	\$2,443	\$2,186	11.8%

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Districts Tier IIA

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	21	25	-16.0%
• Average age	41.6	40.7	0.9
• Average years of service	9.5	8.4	1.1
• Total projected compensation	\$2,100,012	\$2,338,376	-10.2%
• Average projected compensation	\$100,001	\$93,535	6.9%
• Account balances	\$1,008,569	\$948,895	6.3%
• Total active vested members	21	25	-16.0%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	9	5	80.0%
• Average age	37.6	32.6	5.0
<b>Retired members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Districts Tier IIB

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	162	131	23.7%
• Average age	35.2	34.2	1.0
• Average years of service	2.8	2.4	0.4
• Total projected compensation	\$10,697,620	\$8,131,917	31.6%
• Average projected compensation	\$66,035	\$62,076	6.4%
• Account balances	\$1,795,128	\$1,204,940	49.0%
• Total active vested members	32	15	113.3%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	23	15	53.3%
• Average age	32.9	31.3	1.6
<b>Retired members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Districts Tier III

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• 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
<b>Inactive vested members:<sup>1</sup></b>			
• Number	0	0	N/A
• Average age	N/A	N/A	N/A
<b>Retired members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Safety Tier I

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	1,107	1,194	-7.3%
• Average age	43.4	42.8	0.6
• Average years of service	16.7	16.1	0.6
• Total projected compensation	\$101,434,245	\$106,164,961	-4.5%
• Average projected compensation	\$91,630	\$88,915	3.1%
• Account balances	\$106,853,187	\$100,346,006	6.5%
• Total active vested members	1,106	1,194	-7.4%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	237	239	-0.8%
• Average age	42.0	41.6	0.4
<b>Retired members:</b>			
• Number in pay status	1,223	1,174	4.2%
• Average age	66.0	66.1	-0.1
• Average monthly benefit <sup>2</sup>	\$6,130	\$6,030	1.7%
<b>Disabled members:</b>			
• Number in pay status	420	419	0.2%
• Average age	66.7	66.0	0.7
• Average monthly benefit <sup>2</sup>	\$4,774	\$4,647	2.7%
<b>Beneficiaries:</b>			
• Number in pay status	396	391	1.3%
• Average age	71.6	71.4	0.2
• Average monthly benefit <sup>2</sup>	\$2,632	\$2,584	1.9%

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Safety Tier IIA

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	98	100	-2.0%
• Average age	36.5	35.3	1.2
• Average years of service	8.4	7.4	1.0
• Total projected compensation	\$7,656,577	\$7,422,341	3.2%
• Average projected compensation	\$78,128	\$74,223	5.3%
• Account balances	\$5,272,647	\$4,344,382	21.4%
• Total active vested members	97	96	1.0%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	21	20	5.0%
• Average age	35.2	34.2	1.0
<b>Retired members:</b>			
• Number in pay status	1	1	0.0%
• Average age	65.9	64.9	1.0
• Average monthly benefit <sup>2</sup>	\$984	\$960	2.5%
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.

## Section 3: Supplemental Information

### Exhibit A: Table of Plan Coverage (continued)

#### Safety Tier IIB

Category	Year Ended June 30		Change From Prior Year
	2020	2019	
<b>Active members in valuation:</b>			
• Number	480	470	2.1%
• Average age	31.6	31.0	0.6
• Average years of service	3.9	3.2	0.7
• Total projected compensation	\$29,839,467	\$27,461,115	8.7%
• Average projected compensation	\$62,166	\$58,428	6.4%
• Account balances	\$15,895,148	\$12,170,999	30.6%
• Total active vested members	157	140	12.1%
<b>Inactive vested members:<sup>1</sup></b>			
• Number	102	74	37.8%
• Average age	32.5	32.2	0.3
<b>Retired members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Disabled members:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A
<b>Beneficiaries:</b>			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit <sup>2</sup>	N/A	N/A	N/A

<sup>1</sup> Includes inactive members due a refund of member contributions.

<sup>2</sup> Excludes monthly benefits paid from the Supplemental Retiree Benefit Reserve.



## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation

#### Total Plan

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	261	260	1	--	--	--	--	--	--	--
	\$47,378	\$47,389	\$44,602	--	--	--	--	--	--	--
25 – 29	1,092	969	122	1	--	--	--	--	--	--
	\$53,528	\$52,119	\$64,532	\$76,362	--	--	--	--	--	--
30 – 34	1,560	955	481	124	--	--	--	--	--	--
	\$60,668	\$54,273	\$68,568	\$79,274	--	--	--	--	--	--
35 – 39	1,592	614	391	467	119	1	--	--	--	--
	\$69,557	\$57,731	\$67,419	\$81,679	\$89,972	\$76,763	--	--	--	--
40 – 44	1,363	365	225	376	306	90	1	--	--	--
	\$72,618	\$54,505	\$65,483	\$78,365	\$86,374	\$93,228	\$64,583	--	--	--
45 – 49	1,209	246	172	260	280	211	40	--	--	--
	\$78,248	\$63,898	\$66,208	\$79,042	\$87,542	\$89,670	\$87,804	--	--	--
50 – 54	882	164	121	164	155	160	90	28	--	--
	\$73,820	\$58,803	\$64,916	\$71,552	\$78,504	\$83,379	\$86,623	\$91,829	--	--
55 – 59	771	127	98	144	110	129	84	60	19	--
	\$73,127	\$58,527	\$68,037	\$72,212	\$77,162	\$79,297	\$78,373	\$82,803	\$84,921	--
60 – 64	424	71	71	78	67	69	34	24	7	3
	\$71,544	\$63,295	\$63,283	\$68,442	\$71,238	\$75,145	\$82,733	\$97,042	\$97,421	\$75,734
65 – 69	142	25	25	31	17	21	16	3	3	1
	\$75,482	\$69,114	\$66,630	\$74,814	\$94,789	\$74,335	\$72,475	\$103,998	\$80,188	\$121,055
70 & over	30	4	3	6	6	5	3	3	--	--
	\$75,017	\$66,064	\$76,612	\$69,005	\$82,484	\$86,573	\$83,339	\$54,867	--	--
<b>Total</b>	<b>9,326</b>	<b>3,800</b>	<b>1,710</b>	<b>1,651</b>	<b>1,060</b>	<b>686</b>	<b>268</b>	<b>118</b>	<b>29</b>	<b>4</b>
	<b>\$68,043</b>	<b>\$55,073</b>	<b>\$66,837</b>	<b>\$77,693</b>	<b>\$84,136</b>	<b>\$84,747</b>	<b>\$82,756</b>	<b>\$87,670</b>	<b>\$87,449</b>	<b>\$87,064</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### General Tier I County with Courts

Age	Years of Service									
	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	--	--	--	--	--	--	--
	\$72,787	--	\$72,787	--	--	--	--	--	--	--
30 – 34	21	--	1	20	--	--	--	--	--	--
	\$54,118	--	\$52,617	\$54,193	--	--	--	--	--	--
35 – 39	201	2	4	157	37	1	--	--	--	--
	\$73,278	\$128,271	\$76,902	\$73,507	\$68,849	\$76,763	--	--	--	--
40 – 44	360	--	4	175	148	32	1	--	--	--
	\$71,740	--	\$79,472	\$67,322	\$76,510	\$73,099	\$64,583	--	--	--
45 – 49	440	--	6	133	177	104	20	--	--	--
	\$78,001	--	\$69,519	\$73,696	\$81,880	\$78,054	\$74,570	--	--	--
50 – 54	420	--	4	92	127	111	67	19	--	--
	\$74,067	--	\$89,188	\$63,712	\$74,004	\$78,142	\$81,908	\$69,996	--	--
55 – 59	434	2	1	93	91	110	69	54	14	--
	\$72,541	\$79,167	\$47,572	\$66,518	\$71,744	\$74,751	\$73,973	\$78,350	\$71,751	--
60 – 64	222	--	1	42	62	57	29	23	6	2
	\$74,137	--	\$27,867	\$65,407	\$69,110	\$73,186	\$78,949	\$96,563	\$99,868	\$58,722
65 – 69	75	--	--	23	16	16	14	3	2	1
	\$75,656	--	--	\$66,356	\$96,442	\$69,862	\$63,858	\$103,998	\$80,041	\$121,055
70 & over	17	--	--	3	4	4	3	3	--	--
	\$75,576	--	--	\$69,774	\$71,131	\$94,082	\$83,339	\$54,867	--	--
<b>Total</b>	<b>2,191</b>	<b>4</b>	<b>22</b>	<b>738</b>	<b>662</b>	<b>435</b>	<b>203</b>	<b>102</b>	<b>22</b>	<b>3</b>
	<b>\$73,982</b>	<b>\$103,719</b>	<b>\$72,737</b>	<b>\$68,750</b>	<b>\$76,138</b>	<b>\$76,082</b>	<b>\$76,756</b>	<b>\$80,964</b>	<b>\$80,173</b>	<b>\$79,499</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### General Tier IIA County with Courts

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
25 – 29	13	3	10	--	--	--	--	--	--	--
	\$47,178	\$37,323	\$50,135	--	--	--	--	--	--	--
30 – 34	122	8	88	26	--	--	--	--	--	--
	\$62,820	\$61,723	\$61,825	\$66,522	--	--	--	--	--	--
35 – 39	245	28	111	106	--	--	--	--	--	--
	\$72,671	\$60,386	\$68,834	\$79,934	--	--	--	--	--	--
40 – 44	175	23	78	71	2	1	--	--	--	--
	\$72,910	\$54,348	\$65,925	\$87,029	\$63,673	\$60,632	--	--	--	--
45 – 49	159	18	73	68	--	--	--	--	--	--
	\$74,951	\$95,878	\$65,617	\$79,433	--	--	--	--	--	--
50 – 54	114	10	56	47	--	1	--	--	--	--
	\$68,703	\$48,893	\$61,888	\$81,542	--	\$45,052	--	--	--	--
55 – 59	96	10	47	36	1	2	--	--	--	--
	\$71,137	\$47,204	\$67,177	\$85,421	\$41,054	\$41,813	--	--	--	--
60 – 64	74	7	35	31	--	1	--	--	--	--
	\$68,781	\$87,165	\$64,199	\$69,500	--	\$78,160	--	--	--	--
65 – 69	23	4	11	8	--	--	--	--	--	--
	\$76,790	\$86,439	\$57,033	\$99,131	--	--	--	--	--	--
70 & over	5	2	2	1	--	--	--	--	--	--
	\$57,781	\$39,957	\$81,510	\$45,976	--	--	--	--	--	--
<b>Total</b>	<b>1,026</b>	<b>113</b>	<b>511</b>	<b>394</b>	<b>3</b>	<b>5</b>	--	--	--	--
	<b>\$70,725</b>	<b>\$64,329</b>	<b>\$64,922</b>	<b>\$80,417</b>	<b>\$56,133</b>	<b>\$53,494</b>	--	--	--	--

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### General Tier IIB County with Courts

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	201	200	1	--	--	--	--	--	--	--
	\$44,924	\$44,925	\$44,602	--	--	--	--	--	--	--
25 – 29	826	775	51	--	--	--	--	--	--	--
	\$51,042	\$50,718	\$55,974	--	--	--	--	--	--	--
30 – 34	1,070	840	228	2	--	--	--	--	--	--
	\$55,628	\$53,280	\$64,287	\$54,832	--	--	--	--	--	--
35 – 39	711	531	179	1	--	--	--	--	--	--
	\$57,916	\$57,236	\$59,999	\$45,613	--	--	--	--	--	--
40 – 44	427	319	107	1	--	--	--	--	--	--
	\$55,557	\$53,976	\$60,459	\$35,428	--	--	--	--	--	--
45 – 49	289	220	68	1	--	--	--	--	--	--
	\$60,004	\$60,315	\$59,291	\$39,891	--	--	--	--	--	--
50 – 54	198	147	49	2	--	--	--	--	--	--
	\$59,119	\$59,261	\$58,763	\$57,384	--	--	--	--	--	--
55 – 59	148	108	38	2	--	--	--	--	--	--
	\$58,628	\$58,648	\$58,995	\$50,587	--	--	--	--	--	--
60 – 64	96	62	33	1	--	--	--	--	--	--
	\$60,749	\$60,462	\$61,764	\$45,099	--	--	--	--	--	--
65 – 69	30	20	10	--	--	--	--	--	--	--
	\$68,396	\$66,594	\$71,999	--	--	--	--	--	--	--
70 & over	3	2	1	--	--	--	--	--	--	--
	\$83,720	\$92,172	\$66,818	--	--	--	--	--	--	--
<b>Total</b>	<b>3,999</b>	<b>3,224</b>	<b>765</b>	<b>10</b>	--	--	--	--	--	--
	<b>\$55,382</b>	<b>\$54,044</b>	<b>\$61,103</b>	<b>\$49,164</b>	--	--	--	--	--	--

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### Districts Tier I

Age	Years of Service									
	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	--	--	--	--	--	--
	\$76,362	--	--	\$76,362	--	--	--	--	--	--
30 – 34	8	--	6	2	--	--	--	--	--	--
	\$92,291	--	\$83,606	\$118,347	--	--	--	--	--	--
35 – 39	45	--	8	33	4	--	--	--	--	--
	\$101,231	--	\$98,369	\$101,750	\$102,678	--	--	--	--	--
40 – 44	52	--	2	29	19	2	--	--	--	--
	\$116,757	--	\$119,221	\$102,275	\$127,028	\$226,715	--	--	--	--
45 – 49	50	--	6	17	20	7	--	--	--	--
	\$114,342	--	\$109,005	\$98,474	\$129,259	\$114,835	--	--	--	--
50 – 54	27	--	1	5	9	4	7	1	--	--
	\$114,804	--	\$229,814	\$81,975	\$96,694	\$136,352	\$117,423	\$222,397	--	--
55 – 59	36	--	1	8	10	5	9	2	1	--
	\$114,119	--	\$111,610	\$85,225	\$119,163	\$145,884	\$110,414	\$136,296	\$127,514	--
60 – 64	15	--	--	4	3	5	3	--	--	--
	\$102,243	--	--	\$97,954	\$110,092	\$89,359	\$121,587	--	--	--
65 – 69	5	--	1	--	--	2	2	--	--	--
	\$110,739	--	\$66,468	--	--	\$110,818	\$132,796	--	--	--
70 & over	3	--	--	2	1	--	--	--	--	--
	\$85,844	--	--	\$79,366	\$98,800	--	--	--	--	--
<b>Total</b>	<b>242</b>	<b>--</b>	<b>25</b>	<b>101</b>	<b>66</b>	<b>25</b>	<b>21</b>	<b>3</b>	<b>1</b>	<b>--</b>
	<b>\$110,378</b>	<b>--</b>	<b>\$103,558</b>	<b>\$98,545</b>	<b>\$119,703</b>	<b>\$128,021</b>	<b>\$116,478</b>	<b>\$164,996</b>	<b>\$127,514</b>	<b>--</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### Districts Tier IIA

Age	Years of Service									
	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	4	--	4	--	--	--	--	--	--	--
	\$97,806	--	\$97,806	--	--	--	--	--	--	--
35 – 39	8	--	7	1	--	--	--	--	--	--
	\$90,212	--	\$90,311	\$89,519	--	--	--	--	--	--
40 – 44	3	1	2	--	--	--	--	--	--	--
	\$105,758	\$76,995	\$120,140	--	--	--	--	--	--	--
45 – 49	2	--	1	1	--	--	--	--	--	--
	\$92,968	--	\$59,318	\$126,618	--	--	--	--	--	--
50 – 54	2	--	2	--	--	--	--	--	--	--
	\$88,231	--	\$88,231	--	--	--	--	--	--	--
55 – 59	2	--	2	--	--	--	--	--	--	--
	\$153,713	--	\$153,713	--	--	--	--	--	--	--
60 – 64	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
65 – 69	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>21</b>	<b>1</b>	<b>18</b>	<b>2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
	<b>\$100,001</b>	<b>\$76,995</b>	<b>\$100,382</b>	<b>\$108,069</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### Districts Tier IIB

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	10	10	--	--	--	--	--	--	--	--
	\$60,357	\$60,357	--	--	--	--	--	--	--	--
25 – 29	51	47	4	--	--	--	--	--	--	--
	\$62,178	\$61,093	\$74,929	--	--	--	--	--	--	--
30 – 34	35	27	8	--	--	--	--	--	--	--
	\$69,322	\$65,815	\$81,160	--	--	--	--	--	--	--
35 – 39	29	23	6	--	--	--	--	--	--	--
	\$64,880	\$60,151	\$83,010	--	--	--	--	--	--	--
40 – 44	14	11	3	--	--	--	--	--	--	--
	\$60,688	\$60,626	\$60,916	--	--	--	--	--	--	--
45 – 49	6	3	3	--	--	--	--	--	--	--
	\$102,564	\$130,751	\$74,376	--	--	--	--	--	--	--
50 – 54	7	5	2	--	--	--	--	--	--	--
	\$73,598	\$44,327	\$146,776	--	--	--	--	--	--	--
55 – 59	6	3	3	--	--	--	--	--	--	--
	\$64,679	\$48,609	\$80,749	--	--	--	--	--	--	--
60 – 64	2	1	1	--	--	--	--	--	--	--
	\$58,581	\$41,943	\$75,220	--	--	--	--	--	--	--
65 – 69	2	1	1	--	--	--	--	--	--	--
	\$64,872	\$50,220	\$79,524	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>162</b>	<b>131</b>	<b>31</b>	--	--	--	--	--	--	--
	<b>\$66,035</b>	<b>\$62,245</b>	<b>\$82,048</b>	--	--	--	--	--	--	--

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### Districts Tier III

Age	Years of Service									
	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	--	--	--	--	--	--	--	--	--	--
<b>Total</b>	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--



## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### Safety Tier I

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
25 – 29	10	--	10	--	--	--	--	--	--	--
	\$91,697	--	\$91,697	--	--	--	--	--	--	--
30 – 34	114	--	44	70	--	--	--	--	--	--
	\$89,029	--	\$86,620	\$90,544	--	--	--	--	--	--
35 – 39	262	--	23	161	78	--	--	--	--	--
	\$90,548	--	\$83,211	\$87,337	\$99,340	--	--	--	--	--
40 – 44	302	--	11	99	137	55	--	--	--	--
	\$90,792	--	\$79,843	\$85,229	\$91,723	\$100,678	--	--	--	--
45 – 49	249	1	6	39	83	100	20	--	--	--
	\$94,179	\$54,269	\$82,801	\$88,359	\$89,566	\$99,989	\$101,037	--	--	--
50 – 54	109	--	4	18	19	44	16	8	--	--
	\$94,053	--	\$63,709	\$84,221	\$99,967	\$92,646	\$92,890	\$127,364	--	--
55 – 59	40	--	1	5	8	12	6	4	4	--
	\$94,346	--	\$67,764	\$70,851	\$90,810	\$99,473	\$80,913	\$116,176	\$120,368	--
60 – 64	14	--	1	--	2	6	2	1	1	1
	\$86,450	--	\$104,803	--	\$78,916	\$81,405	\$79,330	\$108,070	\$82,742	\$109,759
65 – 69	5	--	--	--	1	3	--	--	1	--
	\$74,085	--	--	--	\$68,333	\$73,869	--	--	\$80,482	--
70 & over	2	--	--	--	1	1	--	--	--	--
	\$84,058	--	--	--	\$111,580	\$56,536	--	--	--	--
<b>Total</b>	<b>1,107</b>	<b>1</b>	<b>100</b>	<b>392</b>	<b>329</b>	<b>221</b>	<b>44</b>	<b>13</b>	<b>6</b>	<b>1</b>
	<b>\$91,630</b>	<b>\$54,269</b>	<b>\$84,446</b>	<b>\$87,125</b>	<b>\$93,350</b>	<b>\$97,615</b>	<b>\$94,344</b>	<b>\$122,437</b>	<b>\$107,450</b>	<b>\$109,759</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### Safety Tier IIA

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
25 – 29	10	1	9	--	--	--	--	--	--	--
	\$76,368	\$73,600	\$76,676	--	--	--	--	--	--	--
30 – 34	40	--	39	1	--	--	--	--	--	--
	\$78,892	--	\$78,579	\$91,079	--	--	--	--	--	--
35 – 39	31	--	26	5	--	--	--	--	--	--
	\$77,099	--	\$77,252	\$76,305	--	--	--	--	--	--
40 – 44	7	1	6	--	--	--	--	--	--	--
	\$76,943	\$89,338	\$74,878	--	--	--	--	--	--	--
45 – 49	5	--	5	--	--	--	--	--	--	--
	\$87,560	--	\$87,560	--	--	--	--	--	--	--
50 – 54	3	--	3	--	--	--	--	--	--	--
	\$66,119	--	\$66,119	--	--	--	--	--	--	--
55 – 59	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
60 – 64	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
65 – 69	2	--	2	--	--	--	--	--	--	--
	\$86,196	--	\$86,196	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>98</b>	<b>2</b>	<b>90</b>	<b>6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
	<b>\$78,128</b>	<b>\$81,469</b>	<b>\$78,012</b>	<b>\$78,767</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>

## Section 3: Supplemental Information

### Exhibit B: Members in Active Service as of June 30, 2020 by Age, Years of Service, and Average Projected Compensation (continued)

#### Safety Tier IIB

Age	Years of Service									
	Total	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39	40 & over
Under 25	50	50	--	--	--	--	--	--	--	--
	\$54,648	\$54,648	--	--	--	--	--	--	--	--
25 – 29	180	143	37	--	--	--	--	--	--	--
	\$59,320	\$56,925	\$68,575	--	--	--	--	--	--	--
30 – 34	146	80	63	3	--	--	--	--	--	--
	\$64,781	\$60,060	\$70,037	\$80,328	--	--	--	--	--	--
35 – 39	60	30	27	3	--	--	--	--	--	--
	\$62,525	\$57,447	\$67,900	\$64,934	--	--	--	--	--	--
40 – 44	23	10	12	1	--	--	--	--	--	--
	\$64,088	\$59,282	\$67,949	\$65,811	--	--	--	--	--	--
45 – 49	9	4	4	1	--	--	--	--	--	--
	\$68,473	\$69,298	\$69,432	\$61,337	--	--	--	--	--	--
50 – 54	2	2	--	--	--	--	--	--	--	--
	\$110,926	\$110,926	--	--	--	--	--	--	--	--
55 – 59	9	4	5	--	--	--	--	--	--	--
	\$90,508	\$80,676	\$98,374	--	--	--	--	--	--	--
60 – 64	1	1	--	--	--	--	--	--	--	--
	\$93,237	\$93,237	--	--	--	--	--	--	--	--
65 – 69	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
70 & over	--	--	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--	--	--
<b>Total</b>	<b>480</b>	<b>324</b>	<b>148</b>	<b>8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
	<b>\$62,166</b>	<b>\$58,360</b>	<b>\$70,053</b>	<b>\$70,367</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>

## Section 3: Supplemental Information

### Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members <sup>1</sup>	Retired Members	Disabled Members	Beneficiaries	Total
<b>Number as of June 30, 2019</b>	<b>9,197</b>	<b>2,877</b>	<b>6,382</b>	<b>893</b>	<b>1,220</b>	<b>20,569</b>
• New members	996	138	N/A	N/A	71	1,205
• Terminations	(442)	442	N/A	N/A	N/A	0
• Contribution refunds	(206)	(184)	N/A	N/A	N/A	(390)
• Retirements	(251)	(79)	330	N/A	N/A	0
• New disabilities	(4)	0	(4)	8	N/A	0
• Return to work	48	(48)	0	0	N/A	0
• Died with or without beneficiary	(12)	(3)	(149)	(18)	(64)	(246)
• Data adjustments	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>(2)</u>	<u>(2)</u>
<b>Number as of June 30, 2020</b>	<b>9,326</b>	<b>3,143</b>	<b>6,559</b>	<b>883</b>	<b>1,225</b>	<b>21,136</b>

<sup>1</sup> Includes inactive members due a refund of member contributions.

## Section 3: Supplemental Information

### Exhibit D: Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended June 30, 2020	Year Ended June 30, 2019
Net assets at market value at the beginning of the year	\$4,345,780,060	\$4,198,862,286
<b>Contribution income:</b>		
• Employer contributions	\$288,293,446	\$242,424,569
• Employee contributions	43,477,770	36,827,443
• Less administrative expenses	<u>(5,523,229)</u>	<u>(4,766,651)</u>
Net contribution income	\$326,247,987	\$274,485,361
<b>Investment income:</b>		
• Interest, dividends, and other income	\$63,730,264	\$95,754,321
• Asset appreciation	98,537,566	126,870,360
• Less investment expenses	<u>(34,406,606)</u>	<u>(8,380,578)</u>
Net investment income	<u>\$127,861,224</u>	<u>\$214,244,103</u>
<b>Total income available for benefits</b>	<b>\$454,109,211</b>	<b>\$488,729,464</b>
<b>Less benefit payments:</b>		
• Retirement and survivor benefits	\$(338,894,982)	\$(320,894,761)
• Supplemental retirement benefits	(17,747,422)	(16,180,072)
• Refunds of member contributions	(4,451,963)	(4,736,856)
• Miscellaneous expenses	<u>(111)</u>	<u>0</u>
Net benefit payments	<b>\$(361,094,478)</b>	<b>\$(341,811,689)</b>
Change in net assets at market value	<b>\$93,014,733</b>	<b>\$146,917,775</b>
<b>Net assets at market value at the end of the year</b>	<b>\$4,438,794,794</b>	<b>\$4,345,780,060</b>

Note: Results may not add due to rounding.

## Section 3: Supplemental Information

### Exhibit E: Summary Statement of Plan Assets

	June 30, 2020	June 30, 2019
Cash equivalents	\$163,250,243	\$106,312,221
Capital assets	\$2,382,951	\$2,793,342
<b>Accounts receivable:</b>		
• Investments sold	\$137,112,878	\$313,517,037
• Interest and dividends	8,644,475	8,591,937
• Contributions and other receivables	<u>13,912,846</u>	<u>1,862,780</u>
Total accounts receivable	\$159,670,199	\$323,971,753
<b>Investments:</b>		
• Debt securities and bonds	\$1,403,561,154	\$1,659,500,045
• Equities	1,698,285,809	1,746,159,547
• Real estate investments	278,658,132	284,166,154
• Alternative investments	792,527,403	590,989,219
• Commodities	220,589,899	228,365,796
• Collateral held for securities lending	<u>184,159,900</u>	<u>97,934,932</u>
Total investments at market value	<u>\$4,577,782,296</u>	<u>\$4,607,115,692</u>
Total assets	\$4,903,085,689	\$5,040,193,009
<b>Accounts payable:</b>		
• Securities purchased	\$(275,979,493)	\$(593,500,967)
• Collateral held for securities lent	(184,159,900)	(97,934,932)
• Contributions and other liabilities	<u>(4,151,503)</u>	<u>(2,977,051)</u>
Total accounts payable	\$(464,290,896)	\$(694,412,949)
<b>Net assets at market value</b>	<b>\$4,438,794,794</b>	<b>\$4,345,780,060</b>
<b>Net assets at actuarial value</b>	<b>\$4,635,029,604</b>	<b>\$4,418,117,756</b>
<b>Net assets at valuation value</b>	<b>\$4,508,548,272</b>	<b>\$4,291,572,784</b>

Note: Results may not add due to rounding.

## Section 3: Supplemental Information

### Exhibit F: Summary of Reported Reserve Information

	June 30, 2020	June 30, 2019
Member Deposit Reserve – General & Courts	\$287,434,022	\$258,420,864
Member Deposit Reserve – Safety	143,396,605	128,906,425
Member Deposit Reserve – Special Districts	31,090,256	26,755,078
Employers Advance Reserve – General & Courts	475,973,601	419,411,182
Employers Advance Reserve – Safety	527,844,083	483,849,540
Employers Advance Reserve – Special Districts	48,621,285	40,864,461
Cost-of-Living Reserve – General & Courts	802,938,574	752,625,490
Cost-of-Living Reserve – Safety	571,879,238	535,881,725
Cost-of-Living Reserve – Special Districts	62,866,270	57,478,378
Retired Members – General, Courts & Special Districts	1,131,012,963	1,138,138,090
Retired Members – Safety	408,636,469	423,604,982
Supplemental Retiree Benefit Reserve (SRBR) – 0.5% COLA	33,209,640	41,991,304
Contingency Reserve <sup>1</sup>	<u>(16,354,734)</u>	<u>(16,354,734)</u>
Valuation Reserves (Valuation Value of Assets)	\$4,508,548,272	\$4,291,572,784
Supplemental Retiree Benefit Reserve (SRBR)	\$126,481,333	\$126,544,972
COLA Contribution Reserve	<u>0</u>	<u>0</u>
Total Reserves (Actuarial Value of Assets)	\$4,635,029,604	\$4,418,117,756
Market Stabilization Reserve	<u>\$(196,234,810)</u>	<u>\$(72,337,696)</u>
<b>Net Market Value of Assets</b>	<b>\$4,438,794,794</b>	<b>\$4,345,780,060</b>

Note: Results may not add due to rounding.

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

## Section 3: Supplemental Information

### Exhibit G: Development of the Fund through June 30, 2020

Year Ended June 30	Employer Contributions	Member Contributions	Administrative and Other Expenses	Net Investment Return <sup>1</sup>	Benefit Payments	Market Value of Assets at Year-End	Valuation Value of Assets at Year-End	Valuation Value as a Percent of Market Value
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%
2020	288,293,446	43,477,770	5,523,340	127,861,224	361,094,367	4,438,794,794	4,508,548,272	101.6%

Note: Results may not add due to rounding.

<sup>1</sup> 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.



## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases

#### General County with Courts

Type	Date Established	Initial Amount (\$ in '000s)	Initial Period	Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment <sup>1</sup> (\$ in '000s)
Restart Amortization	December 31, 2005	\$1,137,894 <sup>2</sup>	30	\$1,154,567	15.5	\$100,454
Actuarial Loss	June 30, 2012	36,175	18	30,675	10	3,758
Actuarial Loss	June 30, 2013	13,512	18	11,920	11	1,351
Actuarial Gain	June 30, 2014	(37,659)	18	(34,258)	12	(3,623)
Assumption Change	June 30, 2014	103,045	18	93,749	12	9,915
Actuarial Gain	June 30, 2015	(21,641)	18	(20,217)	13	(2,008)
Actuarial Gain	June 30, 2016	(2,590)	18	(2,461)	14	(231)
Actuarial Gain	June 30, 2017	(40,492)	18	(39,260)	15	(3,500)
Assumption Change	June 30, 2017	120,406	18	116,732	15	10,405
Actuarial Gain	June 30, 2018	(19,589)	18	(19,267)	16	(1,638)
Actuarial Loss	June 30, 2019	70,119	18	69,646	17	5,668
Actuarial Loss	June 30, 2020	24,813	18	24,813	18	1,940
Assumption Change	June 30, 2020	108,013	18	108,013	18	8,444
<b>Subtotal</b>				<b>\$1,494,652</b>		<b>\$130,935</b>

<sup>1</sup> As of middle of year.

<sup>2</sup> As of June 30, 2011.

## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases (continued)

Type	Date Established	Districts		Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment <sup>1</sup> (\$ in '000s)
		Initial Amount (\$ in '000s)	Initial Period			
Restart Amortization	December 31, 2005	\$86,149 <sup>2</sup>	30	\$87,409	15.5	\$7,605
Actuarial Loss	June 30, 2012	4,431	18	3,755	10	460
Actuarial Loss	June 30, 2013	1,620	18	1,422	11	161
Actuarial Loss	June 30, 2014	2,584	18	2,348	12	248
Assumption Change	June 30, 2014	7,390	18	6,727	12	711
Actuarial Gain	June 30, 2015	(31)	18	(21)	13	(2)
Actuarial Loss	June 30, 2016	5,060	18	4,821	14	453
Actuarial Loss	June 30, 2017	5,822	18	5,647	15	503
Assumption Change	June 30, 2017	11,343	18	10,988	15	979
Actuarial Loss	June 30, 2018	5,634	18	5,531	16	470
Actuarial Loss	June 30, 2019	14,365	18	14,271	17	1,161
Actuarial Loss	June 30, 2020	3,557	18	3,557	18	278
Assumption Change	June 30, 2020	10,306	18	10,306	18	806
<b>Districts Subtotal (Not Including Declining Employers)</b>				<b>\$156,761</b>		<b>\$13,833</b>
Declining Employer Restart Amortization (Berrenda Mesa)	June 30, 2019	4,147	18	4,024	17	406
Actuarial Loss (Berrenda Mesa)	June 30, 2020	556	18	556	18	54
Assumption Change (Berrenda Mesa)	June 30, 2020	267	18	267	18	26
Declining Employer Restart Amortization (Inyokern)	June 30, 2019	102	18	99	17	10
Actuarial Loss (Inyokern)	June 30, 2020	13	18	13	18	1
Assumption Change (Inyokern)	June 30, 2020	5	18	5	18	0
<b>Declining Employer Subtotal</b>				<b>\$4,964</b>		<b>\$497</b>
<b>Subtotal</b>				<b>\$161,725</b>		<b>\$14,330</b>

<sup>1</sup> As of middle of year.

<sup>2</sup> As of June 30, 2011.

## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases (continued)

#### Safety County

Type	Date Established	Initial Amount (\$ in '000s)	Initial Period	Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment <sup>1</sup> (\$ in '000s)
Restart Amortization	December 31, 2005	\$606,032 <sup>2</sup>	30	\$614,909	15.5	\$53,501
Actuarial Loss	June 30, 2012	37,591	18	31,862	10	3,903
Actuarial Loss	June 30, 2013	17,808	18	15,706	11	1,780
Actuarial Gain	June 30, 2014	(23,991)	18	(21,835)	12	(2,309)
Assumption Change	June 30, 2014	93,817	18	85,348	12	9,026
Actuarial Gain	June 30, 2015	(8,513)	18	(7,949)	13	(790)
Actuarial Gain	June 30, 2016	(4,514)	18	(4,317)	14	(405)
Actuarial Gain	June 30, 2017	(24,660)	18	(23,910)	15	(2,131)
Assumption Change	June 30, 2017	81,394	18	78,910	15	7,034
Actuarial Gain	June 30, 2018	(13,175)	18	(12,944)	16	(1,100)
Actuarial Loss	June 30, 2019	34,070	18	33,833	17	2,753
Actuarial Loss	June 30, 2020	23,024	18	23,024	18	1,800
Assumption Change	June 30, 2020	28,027	18	28,027	18	2,191
<b>Subtotal</b>				<b>\$840,664</b>		<b>\$75,253</b>

<sup>1</sup> As of middle of year.

<sup>2</sup> As of June 30, 2011.

## Section 3: Supplemental Information

### Exhibit H: Table of Amortization Bases (continued)

#### Total KCERA

Type	Date Established	Initial Amount (\$ in '000s)	Initial Period	Outstanding Balance (\$ in '000s)	Years Remaining	Annual Payment <sup>1</sup> (\$ in '000s)
Restart Amortization	December 31, 2005	\$1,830,075 <sup>2</sup>	30	\$1,856,885	15.5	\$161,560
Actuarial Loss	June 30, 2012	78,197	18	66,292	10	8,121
Actuarial Loss	June 30, 2013	32,940	18	29,048	11	3,292
Actuarial Gain	June 30, 2014	(59,066)	18	(53,745)	12	(5,684)
Assumption Change	June 30, 2014	204,252	18	185,824	12	19,652
Actuarial Gain	June 30, 2015	(30,185)	18	(28,187)	13	(2,800)
Actuarial Gain	June 30, 2016	(2,044)	18	(1,957)	14	(183)
Actuarial Gain	June 30, 2017	(59,330)	18	(57,523)	15	(5,128)
Assumption Change	June 30, 2017	213,143	18	206,630	15	18,418
Actuarial Gain	June 30, 2018	(27,130)	18	(26,680)	16	(2,268)
Actuarial Loss	June 30, 2019	118,554	18	117,750	17	9,582
Declining Employer Restart (Berrenda)	June 30, 2019	4,147	18	4,024	17	406
Declining Employer Restart (Inyokern)	June 30, 2019	102	18	99	17	10
Actuarial Loss	June 30, 2020	51,394	18	51,394	18	4,018
Actuarial Loss (Berrenda)	June 30, 2020	556	18	556	18	54
Actuarial Loss (Inyokern)	June 30, 2020	13	18	13	18	1
Assumption Change	June 30, 2020	146,346	18	146,346	18	11,441
Assumption Change (Berrenda)	June 30, 2020	267	18	267	18	26
Assumption Change (Inyokern)	June 30, 2020	5	18	5	18	0
<b>KCERA Total</b>				<b>\$2,497,041</b>		<b>\$220,518</b>

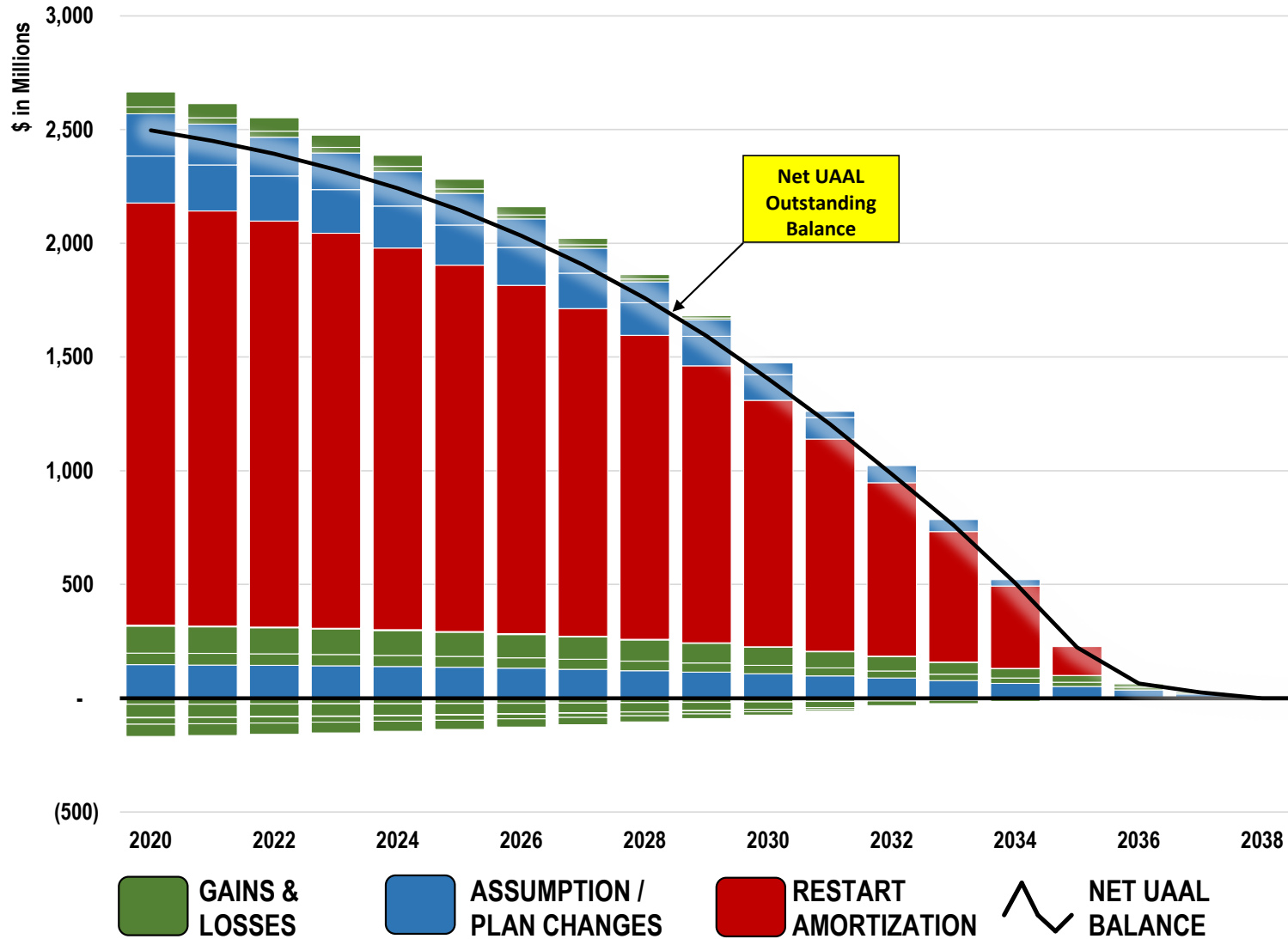
<sup>1</sup> As of middle of year.

<sup>2</sup> As of June 30, 2011.

## Section 3: Supplemental Information

### Exhibit I: Projection of UAAL Balances and Payments

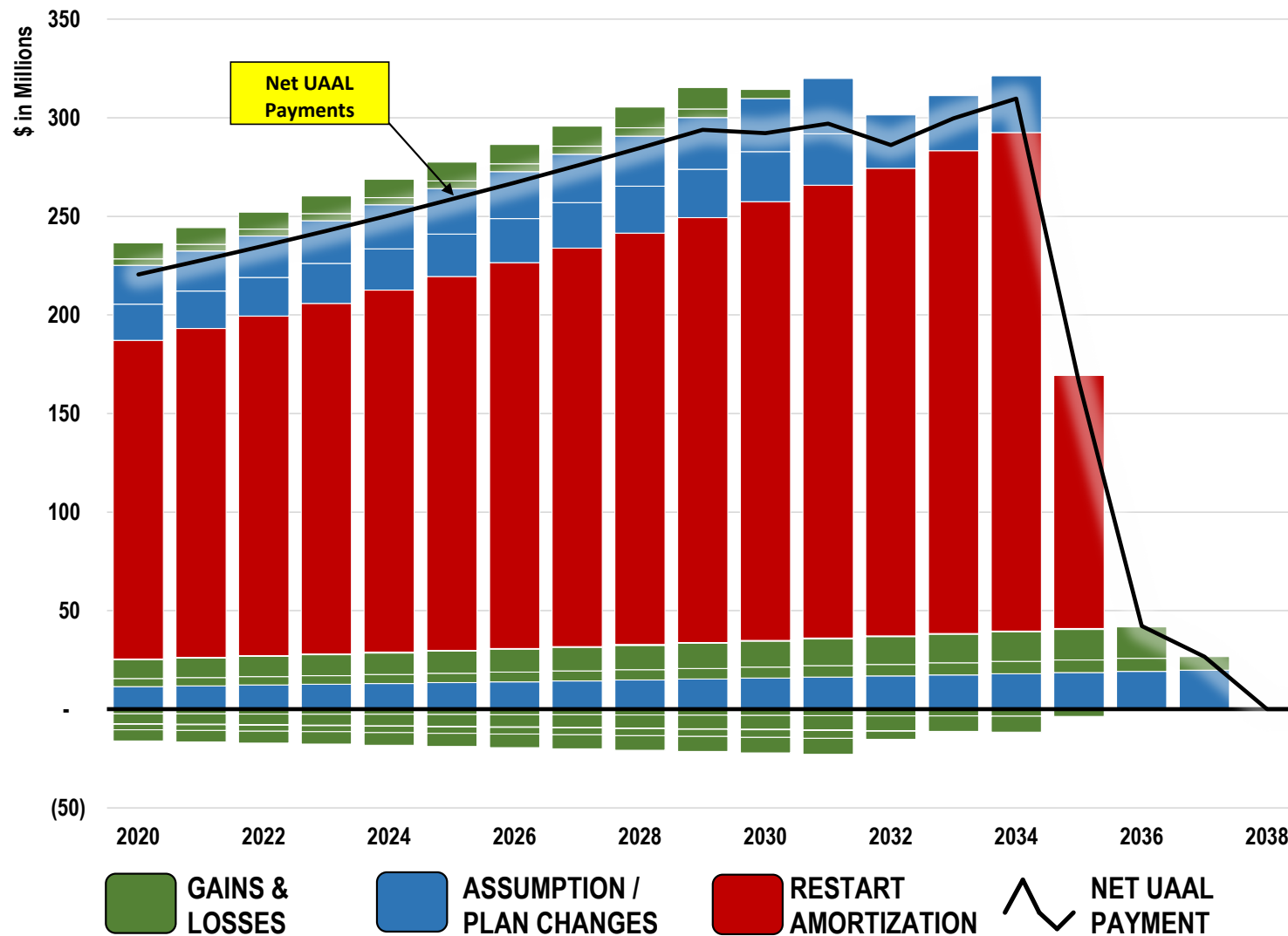
Outstanding Balance of \$2,497 Million in Net UAAL as of June 30, 2020



## Section 3: Supplemental Information

### Exhibit I: Projection of UAAL Balances and Payments (continued)

Annual Payments Required to Amortize \$2,497 Million in Net UAAL as of June 30, 2020



## Section 3: Supplemental Information

### Exhibit J: Definition of Pension Terms

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

<b>Actuarial Accrued Liability for Actives:</b>	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
<b>Actuarial Accrued Liability for Pensioners and Beneficiaries:</b>	The single-sum 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.
<b>Actuarial Cost Method:</b>	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 actuarially determined contribution.
<b>Actuarial Gain or Loss:</b>	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 in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.
<b>Actuarially Equivalent:</b>	Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.
<b>Actuarial Present Value (APV):</b>	<p>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:</p> <ul style="list-style-type: none"><li>Adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)</li><li>Multiplied by the probability of the occurrence of an event (such as survival, death, disability, withdrawal, etc.) on which the payment is conditioned, and</li><li>Discounted according to an assumed rate (or rates) of return to reflect the time value of money.</li></ul>

## Section 3: Supplemental Information

<b>Actuarial Present Value of Future Plan Benefits:</b>	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 Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund 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 when due.
<b>Actuarial Valuation:</b>	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. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the Actuarially Determined Contribution (ADC) and the Net Pension Liability (NPL).
<b>Actuarial Value of Assets (AVA):</b>	The value of the Fund'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 ADC.
<b>Actuarially Determined:</b>	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.
<b>Actuarially Determined Contribution (ADC):</b>	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.
<b>Amortization Method:</b>	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 UAAL. 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 UAAL. 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.
<b>Amortization Payment:</b>	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.



## Section 3: Supplemental Information

<b>Assumptions or Actuarial Assumptions:</b>	<p>The estimates upon which the cost of the Fund is calculated, including:</p> <p><u>Investment return</u> - the rate of investment yield that the Fund will earn over the long-term future;</p> <p><u>Mortality rates</u> - the death rates of employees and pensioners; life expectancy is based on these rates;</p> <p><u>Retirement rates</u> - the rate or probability of retirement at a given age or service;</p> <p><u>Disability rates</u> - the probability of disability retirement at a given age;</p> <p><u>Withdrawal rates</u> - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;</p> <p><u>Salary increase rates</u> - the rates of salary increase due to inflation and productivity growth.</p>
<b>Closed Amortization Period:</b>	<p>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 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Open Amortization Period.</p>
<b>Decrements:</b>	<p>Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.</p>
<b>Defined Benefit Plan:</b>	<p>A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.</p>
<b>Defined Contribution Plan:</b>	<p>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.</p>
<b>Employer Normal Cost:</b>	<p>The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.</p>
<b>Experience Study:</b>	<p>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 as deemed appropriate by the Actuary.</p>
<b>Funded Ratio:</b>	<p>The ratio of the Valuation Value of Assets (VVA) to the Actuarial Accrued Liability (AAL). Plans sometimes calculate a market funded ratio, using the Market Value of Assets (MVA), rather than the VVA.</p>
<b>Investment Return:</b>	<p>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.</p>

## Section 3: Supplemental Information

<b>Normal Cost:</b>	That portion of the Actuarial Present Value of pension plan benefits allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated.
<b>Open Amortization Period:</b>	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 determining the Amortization Period each year. In theory, if an Open Amortization Period with level percentage of payroll is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never decrease, but will become smaller each year, in relation to covered payroll, if the actuarial assumptions are realized.
<b>Payroll or Compensation:</b>	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.
<b>Unfunded Actuarial Accrued Liability:</b>	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.
<b>Valuation Date or Actuarial Valuation Date:</b>	The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.
<b>Valuation Value of Assets:</b>	The Actuarial Value of Assets reduced by the value of non-valuation reserves.

# Section 4: Actuarial Valuation Basis

## Exhibit I: Actuarial Assumptions and Methods

<b>Rationale for Assumptions:</b>	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2016 through June 30, 2019 Actuarial Experience Study dated August 3, 2020. Unless otherwise noted, all actuarial assumptions and methods shown below apply to members for all tiers. These assumptions were adopted by the Board.																										
<b><u>Economic Assumptions</u></b>																											
<b>Net Investment Return:</b>	7.25%; net of investment expenses. Based on the Actuarial Experience Study reference above, expected investment expenses represent about 0.40% of the Market Value of Assets.																										
<b>Administrative Expenses:</b>	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: <table border="1"> <thead> <tr> <th></th> <th>Average Contribution Rate Before Administrative Expense</th> <th>Weighting</th> <th>Total Loading</th> </tr> </thead> <tbody> <tr> <td>Employer</td> <td>48.37%</td> <td>87.95%</td> <td>0.79%</td> </tr> <tr> <td>Member</td> <td>6.63%</td> <td>12.05%</td> <td>0.11%</td> </tr> <tr> <td>Total</td> <td></td> <td>100.00%</td> <td>0.90%</td> </tr> </tbody> </table> <p>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.</p> <table border="1"> <thead> <tr> <th colspan="2">Allocation of Administrative Expense Load as a % of Payroll</th> </tr> </thead> <tbody> <tr> <td>Addition to Employer Basic Normal Cost Rate</td> <td>0.11%</td> </tr> <tr> <td>Addition to Employer Basic UAAL Rate</td> <td>0.68%</td> </tr> <tr> <td>Addition to Member Basic Rate</td> <td>0.11%</td> </tr> <tr> <td>Total Addition to Contribution Rates</td> <td>0.90%</td> </tr> </tbody> </table> <p>The administrative expense load is added to the Basic rates for employers and members.</p>		Average Contribution Rate Before Administrative Expense	Weighting	Total Loading	Employer	48.37%	87.95%	0.79%	Member	6.63%	12.05%	0.11%	Total		100.00%	0.90%	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%
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Total Addition to Contribution Rates	0.90%																										
<b>Member Contribution Crediting Rate:</b>	7.25%, compounded semi-annually.																										
<b>Consumer Price Index:</b>	Increase of 2.75% per year; retiree COLA increases due to CPI are assumed to be 2.50% per year.																										

## Section 4: Actuarial Valuation Basis

<b>Payroll Growth:</b>	Inflation of 2.75% per year plus “across the board” real salary increases of 0.50% per year.
<b>Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:</b>	Increase of 2.75% per year from the valuation date.
<b>Increase in Section 7522.10 Compensation Limit:</b>	Increase of 2.75% per year from the valuation date.
<b>Salary Increases:</b>	The annual rate of compensation increase includes: inflation at 2.75%, plus “across the board” salary increases of 0.50% per year, plus the following merit and promotion increases:

<b>Merit and Promotion Increases</b>		
<b>Years of Service</b>	<b>Rate (%)</b>	
	<b>General</b>	<b>Safety</b>
Less than 1	5.50	8.75
1 – 2	4.50	7.00
2 – 3	4.00	5.50
3 – 4	3.50	5.00
4 – 5	3.00	4.50
5 – 6	2.50	4.00
6 – 7	2.25	3.50
7 – 8	1.75	2.50
8 – 9	1.50	1.50
9 – 10	1.25	1.25
10 – 11	1.15	1.00
11 – 12	1.05	0.80
12 – 13	0.95	0.75
13 – 14	0.85	0.70
14 – 15	0.75	0.65
15 – 16	0.75	0.60
16 – 17	0.75	0.55
17 – 18	0.75	0.50
18 – 19	0.75	0.50
19 – 20	0.75	0.50
20 & Over	0.75	0.50

## Section 4: Actuarial Valuation Basis

### Demographic Assumptions:

#### Post-Retirement Mortality Rates:

##### *Healthy*

- **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 15% for females, projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

##### *Disabled*

- **General Members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates decreased by 5% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety Members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 5% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2019.

##### *Beneficiaries*

- **General and Safety Members:** Pub-2010 General Contingent Survivor Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 10% for males and females, projected generationally with the two-dimensional mortality improvement scale MP-2019.

The Pub-2010 mortality tables and adjustments as shown above with generational projection to the ages of participants as of the measurement date reasonably reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

## Section 4: Actuarial Valuation Basis

### Pre-Retirement Mortality Rates:

- **General Members:** Pub-2010 General Employee Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.
- **Safety Members:** Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

Age	Rate (%)			
	General		Safety	
	Male	Female	Male	Female
25	0.03	0.01	0.03	0.02
30	0.04	0.01	0.04	0.02
35	0.05	0.02	0.04	0.03
40	0.07	0.04	0.05	0.04
45	0.10	0.06	0.07	0.06
50	0.15	0.08	0.10	0.08
55	0.22	0.12	0.15	0.11
60	0.32	0.19	0.23	0.14
65	0.47	0.30	0.35	0.20

All pre-retirement deaths are assumed to be non-service connected. Note that generational projections beyond the base year (2010) are not reflected in the above mortality rates.

### Mortality Rates for Member Contributions:

- **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates increased by 15% for females, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 30% male and 70% female.
- **Safety Members:** Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 80% male and 20% female.

## Section 4: Actuarial Valuation Basis

### Disability Incidence:

Age	Rate (%)	
	General	Safety
20	0.02	0.05
25	0.03	0.07
30	0.04	0.10
35	0.07	0.19
40	0.09	0.28
45	0.13	0.39
50	0.18	1.08
55	0.26	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.

## Section 4: Actuarial Valuation Basis

### Termination:

Years of Service	Rate (%)	
	General	Safety
Less than 1	17.00	9.00
1 – 2	13.00	8.00
2 – 3	10.00	7.00
3 – 4	9.00	6.00
4 – 5	8.50	5.00
5 – 6	8.00	4.00
6 – 7	7.00	3.50
7 – 8	6.00	3.25
8 – 9	5.00	3.00
9 – 10	4.00	2.60
10 – 11	3.75	2.20
11 – 12	3.50	1.80
12 – 13	3.25	1.60
13 – 14	3.00	1.40
14 – 15	2.75	1.20
15 – 16	2.50	1.00
16 – 17	2.30	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.



## Section 4: Actuarial Valuation Basis

### Electing a Refund of Contributions upon Termination:

Years of Service	Rate (%)	
	General	Safety
Less than 5	100.00	100.00
5 – 6	36.00	44.00
6 – 7	34.00	40.00
7 – 8	32.00	38.00
8 – 9	30.00	32.00
9 – 10	28.00	30.00
10 – 11	26.00	26.00
11 – 12	25.00	25.00
12 – 13	24.00	21.00
13 – 14	23.00	18.00
14 – 15	22.00	15.00
15 – 16	21.00	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

## Section 4: Actuarial Valuation Basis

### Retirement Rates:

Age	Rate (%)						
	General Tier I		General Tiers IIA and IIB	General Tier III	Safety Tier I		Safety Tiers IIA and IIB
	<25 Years of Service	>25 Years of Service			<25 Years of Service	>25 Years of Service	
45	0.00	0.00	0.00	0.00	5.00	5.00	0.00
46	0.00	0.00	0.00	0.00	5.00	5.00	0.00
47	0.00	0.00	0.00	0.00	5.00	5.00	0.00
48	0.00	0.00	0.00	0.00	5.00	5.00	0.00
49	0.00	0.00	0.00	0.00	25.00	25.00	0.00
50	10.00	10.00	5.00	0.00	10.00	30.00	3.00
51	6.00	6.00	3.00	0.00	8.00	24.00	3.00
52	6.00	12.00	3.00	3.00	8.00	24.00	3.00
53	6.00	12.00	3.00	3.00	8.00	24.00	5.00
54	6.00	12.00	3.50	3.50	12.00	24.00	11.00
55	6.00	12.00	4.00	4.00	14.00	28.00	13.00
56	6.00	14.00	4.50	4.50	14.00	28.00	12.00
57	6.00	16.00	5.00	5.00	8.00	28.00	12.00
58	9.00	18.00	6.50	6.50	8.00	28.00	12.00
59	16.00	24.00	11.00	11.00	14.00	28.00	12.00
60	20.00	35.00	12.00	12.00	25.00	28.00	12.00
61	16.00	28.00	13.00	13.00	25.00	50.00	12.00
62	20.00	35.00	20.00	20.00	25.00	50.00	25.00
63	20.00	30.00	20.00	20.00	25.00	50.00	25.00
64	20.00	30.00	20.00	20.00	25.00	50.00	25.00
65	35.00	35.00	35.00	35.00	100.00	100.00	100.00
66	35.00	35.00	35.00	35.00	100.00	100.00	100.00
67	35.00	35.00	35.00	35.00	100.00	100.00	100.00
68	35.00	35.00	35.00	35.00	100.00	100.00	100.00
69	40.00	40.00	40.00	40.00	100.00	100.00	100.00
70	100.00	100.00	100.00	100.00	100.00	100.00	100.00

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

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

General Retirement Age: 57

Safety Retirement Age: 53

We assume that 45% of future General and 60% of future Safety deferred vested members will continue to work for a reciprocal employer. For reciprocal members, we assume 4.00% and 3.75% compensation increases per annum for General and Safety members, respectively.

## Section 4: Actuarial Valuation Basis

<b>Future Benefit Accruals:</b>	1.0 year of service per year of employment.
<b>Unknown Data for Members:</b>	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
<b>Definition of Active Members:</b>	All active members of KCERA as of the valuation date.
<b>Form of Payment:</b>	All active and inactive members are assumed to elect the unmodified option at retirement.
<b>Percent Married:</b>	For all active and inactive members, 70% 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.
<b>Age and Gender of Spouse:</b>	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.
<b><u>Actuarial Funding Policy</u></b>	
<b>Actuarial Cost Method:</b>	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").
<b>Actuarial Value of Assets:</b>	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.
<b>Valuation Value of Assets:</b>	The Actuarial Value of Assets reduced by the value of the non-valuation reserves (excluding the Contingency Reserve if it is negative).

## Section 4: Actuarial Valuation Basis

### **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.

## Section 4: Actuarial Valuation Basis

### 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 3.25%. Effective with the June 30, 2012 valuation, the June 30, 2011 UAAL is being amortized over a 24.5-year declining period (15.5 years as of June 30, 2020). 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".

## Section 4: Actuarial Valuation Basis

### 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.

## Section 4: Actuarial Valuation Basis

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.

## Section 4: Actuarial Valuation Basis

### **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 \$230,000 for 2020. 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 gains as they occur.



## Section 4: Actuarial Valuation Basis

<b>Changed Actuarial Assumptions and Methods:</b>	Based on the Actuarial Experience Study, the following assumptions were changed. Previously, these assumptions and methods were as follows:
<b>Prior Actuarial Assumptions:</b>	
<i>Consumer Price Index:</i>	Increase of 3.00% per year; retiree COLA increases due to CPI are assumed to be 2.50% per year.
<i>Payroll Growth:</i>	Inflation of 3.00% per year plus “across the board” real salary increases of 0.50% per year.
<i>Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:</i>	Increase of 3.00% per year from the valuation date.
<i>Increase in Section 7522.10 Compensation Limit:</i>	Increase of 3.00% per year from the valuation date.

## Section 4: Actuarial Valuation Basis

### Prior Actuarial Assumptions (continued):

#### *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.

Years of Service	Merit and Promotion Increases	
	Rate (%)	
	General	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 – 20	0.50	0.55
20 & Over	0.50	0.50

## Section 4: Actuarial Valuation Basis

### Prior Actuarial Assumptions (continued):

#### 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.

Age	Rate (%)			
	General		Safety	
	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. Note that generational projections beyond the base year (2014) are not reflected in the above mortality rates.

## Section 4: Actuarial Valuation Basis

### Prior Actuarial Assumptions (continued):

#### *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:*

Age	Rate (%)	
	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.

## Section 4: Actuarial Valuation Basis

### Prior Actuarial Assumptions (continued):

*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.

## Section 4: Actuarial Valuation Basis

### Prior Actuarial Assumptions (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

## Section 4: Actuarial Valuation Basis

### Prior Actuarial Assumptions (continued):

#### Retirement Rates:

Age	Rate (%)				
	General Tier 1	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

## Section 4: Actuarial Valuation Basis

### Prior Actuarial Assumptions (continued):

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

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

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.

#### *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.



## Section 4: Actuarial Valuation Basis

### 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.

<b>Plan Year:</b>	July 1 through June 30
<b>Membership Eligibility:</b>	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:
<i>General Tier I</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.
<i>General Tier IIA</i>	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.
<i>General Tier IIB</i>	All General members hired by the County or districts (other than West Side Recreation & Park) on or after January 1, 2013.
<i>General Tier III</i>	All General members hired by West Side Recreation & Park on or after January 1, 2013.
<i>Safety Tier I</i>	All members employed in active law enforcement, active fire suppression, probation, detention or criminal investigation hired prior to March 27, 2012.
<i>Safety Tier IIA</i>	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.
<i>Safety Tier IIB</i>	All member employee in active law enforcement, active fire suppression, probation, detention or criminal investigation hired on or after January 1, 2013.

## Section 4: Actuarial Valuation Basis

<b>Final Compensation for Benefit Determination:</b>		
<i>General Tiers I and IIA, Safety Tiers I and IIA</i>	Highest consecutive twelve months of compensation earnable (§31462.1) (FAS1).	
<i>General Tier IIB, General Tier III and Safety Tier IIB</i>	Highest consecutive thirty-six months of pensionable compensation (§7522.32 and §7522.34) (FAS3).	
<b>Compensation Limit:</b>		
<i>Non-General Tier III</i>	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, 2020 is \$285,000. The limit is indexed for inflation on an annual basis.	
<i>General Tier III</i>	Pensionable Compensation is limited to \$126,291 for 2020 (\$151,549, if not enrolled in Social Security). The limit is indexed for inflation on an annual basis.	
<b>Service:</b>		
Years of service (Yrs).		
<b>Service Retirement Eligibility:</b>		
<i>General Tiers I, IIA and IIB</i>	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).	
<i>General Tier III</i>	Age 52 with 5 years of service (§7522.20(a)), or age 70 regardless of service credit.	
<i>Safety Tiers I, IIA and IIB</i>	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).	
<b>Benefit Formula:</b>		
<i>General Tier I (§31676.17)</i>	<b>Retirement Age</b>	<b>Benefit Formula<sup>(1)</sup></b>
	50	$(2.00\% \times \text{FAS1} - 1/3\% \times 2.00\% \times \$350 \times 12) \times \text{Yrs}$
	55	$(2.50\% \times \text{FAS1} - 1/3\% \times 2.50\% \times \$350 \times 12) \times \text{Yrs}$
	60	$(3.00\% \times \text{FAS1} - 1/3\% \times 3.00\% \times \$350 \times 12) \times \text{Yrs}$
	62 and over	$(3.00\% \times \text{FAS1} - 1/3\% \times 3.00\% \times \$350 \times 12) \times \text{Yrs}$
<i>General Tier I<sup>(2)</sup> (§31676.14)</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	50	$1.48\% \times \text{FAS1} \times \text{Yrs}$
	55	$1.95\% \times \text{FAS1} \times \text{Yrs}$
	60	$2.44\% \times \text{FAS1} \times \text{Yrs}$
	62 and over	$2.61\% \times \text{FAS1} \times \text{Yrs}$

## Section 4: Actuarial Valuation Basis

### *General Tier IIA (§31676.01)*

<b>Retirement Age</b>	<b>Benefit Formula<sup>(1)</sup></b>
50	$(0.79\% \times \text{FAS1} - 1/3 \times 0.79\% \times \$350 \times 12) \times \text{Yrs}$
55	$(0.99\% \times \text{FAS1} - 1/3 \times 1.00\% \times \$350 \times 12) \times \text{Yrs}$
60	$(1.28\% \times \text{FAS1} - 1/3 \times 1.28\% \times \$350 \times 12) \times \text{Yrs}$
62	$(1.39\% \times \text{FAS1} - 1/3 \times 1.39\% \times \$350 \times 12) \times \text{Yrs}$
65 and over	$(1.62\% \times \text{FAS1} - 1/3 \times 1.62\% \times \$350 \times 12) \times \text{Yrs}$

### *General Tier IIB (§31676.01)*

<b>Retirement Age</b>	<b>Benefit Formula<sup>(1)</sup></b>
50	$(0.79\% \times \text{FAS3} - 1/3 \times 0.79\% \times \$350 \times 12) \times \text{Yrs}$
55	$(0.99\% \times \text{FAS3} - 1/3 \times 1.00\% \times \$350 \times 12) \times \text{Yrs}$
60	$(1.28\% \times \text{FAS3} - 1/3 \times 1.28\% \times \$350 \times 12) \times \text{Yrs}$
62	$(1.39\% \times \text{FAS3} - 1/3 \times 1.39\% \times \$350 \times 12) \times \text{Yrs}$
65 and over	$(1.62\% \times \text{FAS3} - 1/3 \times 1.62\% \times \$350 \times 12) \times \text{Yrs}$

<sup>(1)</sup> Benefits for some District Members are not integrated with Social Security.

<sup>(2)</sup> 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.

### *General Tier III (§7522.20(a))*

<b>Retirement Age</b>	<b>Benefit Formula</b>
52	$1.00\% \times \text{FAS3} \times \text{Yrs}$
55	$1.30\% \times \text{FAS3} \times \text{Yrs}$
60	$1.80\% \times \text{FAS3} \times \text{Yrs}$
62	$2.00\% \times \text{FAS3} \times \text{Yrs}$
65	$2.30\% \times \text{FAS3} \times \text{Yrs}$
67 and over	$2.50\% \times \text{FAS3} \times \text{Yrs}$

### *Safety Tier I (§31664.1)*

<b>Retirement Age</b>	<b>Benefit Formula</b>
50	$(3.00\% \times \text{FAS1} - 1/3 \times 3.00\% \times \$350 \times 12) \times \text{Yrs}$
55	$(3.00\% \times \text{FAS1} - 1/3 \times 3.00\% \times \$350 \times 12) \times \text{Yrs}$
60 and over	$(3.00\% \times \text{FAS1} - 1/3 \times 3.00\% \times \$350 \times 12) \times \text{Yrs}$

## Section 4: Actuarial Valuation Basis

<i>Safety Tier IIA (§31664)</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	50	$(2.00\% \times \text{FAS1} - 1/3 \times 2.00\% \times \$350 \times 12) \times \text{Yrs}$
	55	$(2.62\% \times \text{FAS1} - 1/3 \times 2.62\% \times \$350 \times 12) \times \text{Yrs}$
<i>Safety Tier IIB (§31664)</i>	<b>Retirement Age</b>	<b>Benefit Formula</b>
	60 and over	$(2.62\% \times \text{FAS1} - 1/3 \times 2.62\% \times \$350 \times 12) \times \text{Yrs}$
	50	$(2.00\% \times \text{FAS3} - 1/3 \times 2.00\% \times \$350 \times 12) \times \text{Yrs}$
	55	$(2.62\% \times \text{FAS3} - 1/3 \times 2.62\% \times \$350 \times 12) \times \text{Yrs}$
	57 and over	$(2.62\% \times \text{FAS3} - 1/3 \times 2.62\% \times \$350 \times 12) \times \text{Yrs}$
<b>Maximum Benefit:</b>		
<i>Non-General Tier III</i>	100% of final compensation (§31676.14, §31676.17, §31676.01, §31664.1, §31664).	
<i>General Tier III</i>	There is no final compensation limit on the maximum retirement benefit.	
<b>Non-Service Connected Disability:</b>		
<i>Eligibility</i>	Five years of service (§31720).	
<i>Benefit</i>	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.	
<b>Service Connected Disability:</b>		
<i>Eligibility</i>	No age or service requirements (§31720).	
<i>Benefit</i>	50% of the Final Compensation or 100% of Service Retirement benefit, if greater (§31727.4).	

## Section 4: Actuarial Valuation Basis

<b>Pre-Retirement Death:</b>	
<i>All Members</i>	
<i>Eligibility</i>	None.
<i>Basic lump sum benefit</i>	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).
<i>Service Connected Death</i>	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.
<i>Vested Members</i>	
<i>Eligibility</i>	Five years of service.
<i>Basic benefit</i>	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: <ul style="list-style-type: none"><li>• A lump sum payment of up to six months' compensation (see above), and</li><li>• A monthly (60%) benefit reduced by actuarial equivalent of the lump sum payment (§31781.3).</li></ul>
<b>Death After Retirement:</b>	
<i>All Members</i>	
<i>Service Retirement or Non-Service Connected Disability Retirement</i>	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).
<i>Service Connected Disability</i>	Unless another option was selected at retirement, 100% of member's unmodified allowance continued to eligible spouse (§31786).
<b>Withdrawal Benefits:</b>	
<i>Less than Five Years of Service</i>	Refund of accumulated employee contributions with interest (§31628) or entitled to earned benefits commencing any time after eligible to retire (§31629.5) if eligible for benefits at a reciprocal system.
<i>Five or More Years of Service</i>	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.
<b>Post-retirement Cost-of-Living Benefits:</b>	Future changes based on changes to the Consumer Price Index to a maximum of 2.50% per year. (§31870.4)
<b>Supplemental Retiree Benefit Reserve:</b>	The Association provides Supplemental Retiree Benefit Reserve benefits for eligible retirees. These benefits have been excluded from this valuation.

## Section 4: Actuarial Valuation Basis

<b>Member Contributions:</b>	Please refer to <i>Section 4, Exhibit III</i> 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.
<i>General Tier I (non-SJVAPCD)</i>	
<i>Basic</i>	Entry age based rates that provide for an average annuity at age 55 equal to 1/100 of FAS (\$31621.8).
<i>General Tier I (SJVAPCD)</i>	
<i>Basic</i>	Entry age based rates that provide for 50% of total Normal Cost Rate.
<i>General Tier IIA (non-SJVAPCD)</i>	
<i>Basic</i>	Entry age based rates that provide for an average annuity at age 60 equal to 1/120 of FAS (\$31621).
<i>General Tier IIA (SJVAPCD)</i>	
<i>Basic</i>	Entry age based rates that provide for 50% of total Normal Cost Rate.
<i>General Tiers IIB and III</i>	Non-entry age based rates that provide for 50% of total Normal Cost Rate.
<i>Safety Tier I</i>	
<i>Basic</i>	Entry age based rates that provide for an average annuity at age 50 equal to 1/100 of FAS (\$31639.25).
<i>Supplemental</i>	Entry age based rates that provide for an average annuity at age 50 equal to 1/200 of FAS (Resolution #2004-144).
<i>Safety "3" Tier I</i>	
<i>Basic and Supplemental</i>	At all entry ages, the member contribution rate for the above Safety Tier I members who enter the plan at age 27.
<i>Safety Tier IIA</i>	
<i>Basic</i>	Entry age based rates that provide for an average annuity at age 50 equal to 1/100 of FAS (\$31639.25).
<i>Safety "3" Tier IIA</i>	
<i>Basic</i>	At all entry ages, the member contribution rate for the above Safety Tier IIA members who enter the plan at age 27.
<i>Safety Tier IIB</i>	Non-entry age based rates that provide for 50% of total Normal Cost Rate.
<b>Other Information:</b>	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.
<b>Changed Plan Provisions:</b>	There have been no changes in plan provisions since the last valuation.

## Section 4: Actuarial Valuation Basis

**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.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates

General Tier I Members' (non-SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	Integrated		Non-Integrated
	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation	All Compensation
16	4.35%	6.52%	6.52%
17	4.43%	6.65%	6.65%
18	4.51%	6.77%	6.77%
19	4.60%	6.90%	6.90%
20	4.68%	7.02%	7.02%
21	4.77%	7.15%	7.15%
22	4.86%	7.29%	7.29%
23	4.95%	7.42%	7.42%
24	5.04%	7.56%	7.56%
25	5.13%	7.70%	7.70%
26	5.23%	7.84%	7.84%
27	5.33%	7.99%	7.99%
28	5.42%	8.13%	8.13%
29	5.52%	8.28%	8.28%
30	5.63%	8.44%	8.44%
31	5.73%	8.59%	8.59%
32	5.83%	8.75%	8.75%
33	5.95%	8.92%	8.92%
34	6.05%	9.08%	9.08%
35	6.17%	9.25%	9.25%
36	6.29%	9.43%	9.43%
37	6.41%	9.61%	9.61%
38	6.53%	9.80%	9.80%
39	6.66%	9.99%	9.99%



## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier I Members' (non-SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	Integrated		Non-Integrated
	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation	All Compensation
40	6.79%	10.19%	10.19%
41	6.93%	10.39%	10.39%
42	7.06%	10.59%	10.59%
43	7.19%	10.78%	10.78%
44	7.32%	10.98%	10.98%
45	7.45%	11.18%	11.18%
46	7.58%	11.37%	11.37%
47	7.70%	11.55%	11.55%
48	7.79%	11.69%	11.69%
49	7.88%	11.82%	11.82%
50	7.94%	11.91%	11.91%
51	7.98%	11.97%	11.97%
52	7.99%	11.99%	11.99%
53	7.99%	11.98%	11.98%
54 & Over	7.93%	11.90%	11.90%

Interest: 7.25% per annum  
 COLA: None  
 Administrative Expenses: 0.11% of payroll added to Basic rates  
 Mortality: See Section 4, Exhibit I  
 Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See Section 4, Exhibit I)  
 Note: These rates are determined before any pickups by the employer, if any.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier I Members' (SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
16	9.22%
17	9.40%
18	9.57%
19	9.76%
20	9.93%
21	10.11%
22	10.31%
23	10.49%
24	10.69%
25	10.89%
26	11.09%
27	11.30%
28	11.50%
29	11.72%
30	11.94%
31	12.16%
32	12.38%
33	12.63%
34	12.85%
35	13.09%
36	13.35%
37	13.61%
38	13.88%
39	14.15%

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier I Members' (SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
40	14.43%
41	14.71%
42	15.00%
43	15.27%
44	15.55%
45	15.84%
46	16.11%
47	16.36%
48	16.56%
49	16.74%
50	16.87%
51	16.96%
52	16.99%
53	16.97%
54 & Over	16.86%

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.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier IIA Members' (non-SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	Integrated		Non-Integrated
	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation	All Compensation
16	3.15%	4.72%	4.72%
17	3.21%	4.81%	4.81%
18	3.27%	4.90%	4.90%
19	3.33%	4.99%	4.99%
20	3.39%	5.08%	5.08%
21	3.45%	5.18%	5.18%
22	3.51%	5.27%	5.27%
23	3.58%	5.37%	5.37%
24	3.65%	5.47%	5.47%
25	3.71%	5.57%	5.57%
26	3.78%	5.67%	5.67%
27	3.85%	5.78%	5.78%
28	3.93%	5.89%	5.89%
29	3.99%	5.99%	5.99%
30	4.07%	6.10%	6.10%
31	4.15%	6.22%	6.22%
32	4.22%	6.33%	6.33%
33	4.30%	6.45%	6.45%
34	4.38%	6.57%	6.57%
35	4.46%	6.69%	6.69%
36	4.54%	6.81%	6.81%
37	4.63%	6.94%	6.94%
38	4.71%	7.07%	7.07%
39	4.80%	7.20%	7.20%

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier IIA Members' (non-SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	Integrated		Non-Integrated
	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation	All Compensation
40	4.89%	7.33%	7.33%
41	4.98%	7.47%	7.47%
42	5.07%	7.61%	7.61%
43	5.17%	7.76%	7.76%
44	5.27%	7.91%	7.91%
45	5.38%	8.07%	8.07%
46	5.49%	8.23%	8.23%
47	5.59%	8.39%	8.39%
48	5.69%	8.54%	8.54%
49	5.80%	8.70%	8.70%
50	5.91%	8.86%	8.86%
51	6.00%	9.00%	9.00%
52	6.09%	9.14%	9.14%
53	6.17%	9.25%	9.25%
54	6.24%	9.36%	9.36%
55	6.29%	9.43%	9.43%
56	6.32%	9.48%	9.48%
57	6.33%	9.49%	9.49%
58	6.33%	9.49%	9.49%
59 & Over	6.28%	9.42%	9.42%

Interest: 7.25% per annum  
 COLA: None  
 Administrative Expenses: 0.11% of payroll added to Basic rates  
 Mortality: See *Section 4, Exhibit I*  
 Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)  
 Note: These rates are determined before any pickups by the employer, if any.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier IIA Members' (SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
16	4.66%
17	4.75%
18	4.84%
19	4.92%
20	5.01%
21	5.11%
22	5.20%
23	5.30%
24	5.40%
25	5.50%
26	5.60%
27	5.70%
28	5.81%
29	5.91%
30	6.02%
31	6.14%
32	6.25%
33	6.36%
34	6.48%
35	6.60%
36	6.72%
37	6.85%
38	6.98%
39	7.10%

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier IIA Members' (SJVAPCD) Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Entry Age	All Compensation
40	7.23%
41	7.37%
42	7.51%
43	7.66%
44	7.81%
45	7.96%
46	8.12%
47	8.28%
48	8.43%
49	8.58%
50	8.74%
51	8.88%
52	9.02%
53	9.13%
54	9.24%
55	9.30%
56	9.35%
57	9.36%
58	9.36%
59 & Over	9.30%

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.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

General Tier IIB Members' Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

All Members	Integrated		Non-Integrated
	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation	All Compensation
Basic	3.33%	5.00%	5.00%
2% COLA	0.71%	1.07%	1.07%
0.5% COLA	<u>0.21%</u>	<u>0.32%</u>	<u>0.32%</u>
Total	4.26%	6.39%	6.39%

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, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

All Members	All Compensation <sup>1</sup>
Basic	5.78%
2% COLA	1.20%
0.5% COLA	<u>0.37%</u>
Total	7.35%

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.

<sup>1</sup> 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 2020 is \$126,291 (reference: Section 7522.10). These amounts should be adjusted for changes to the Consumer Price Index for All Urban Consumers after 2020 (reference: Section 7522.10(d)).



## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

Safety Tier I Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2020 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

Integrated		
Entry Age	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation
16	7.31%	10.96%
17	7.46%	11.19%
18	7.61%	11.42%
19	7.77%	11.66%
20	7.93%	11.90%
21	8.10%	12.15%
22	8.27%	12.40%
23	8.44%	12.66%
24	8.61%	12.92%
25	8.79%	13.19%
26	8.98%	13.47%
27	9.17%	13.75%
28	9.37%	14.05%
29	9.57%	14.35%
30	9.77%	14.66%
31	9.99%	14.98%
32	10.21%	15.32%
33	10.44%	15.66%
34	10.67%	16.01%
35	10.91%	16.37%
36	11.16%	16.74%
37	11.42%	17.13%
38	11.69%	17.53%
39	11.96%	17.94%

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

Safety Tier I Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2020 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

Integrated		
Entry Age	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation
40	12.23%	18.34%
41	12.49%	18.74%
42	12.68%	19.02%
43	12.77%	19.16%
44	12.83%	19.25%
45	12.86%	19.29%
46	12.86%	19.29%
47	12.83%	19.25%
48	12.69%	19.04%
49 & Over	12.42%	18.63%

Interest: 7.25% per annum

COLA: None

Administrative Expenses: 0.11% of payroll added to Basic rates

Mortality: See *Section 4, Exhibit I*

Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)

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

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

Safety 3'' Safety Tier I Members' Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Integrated		
Entry Age	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation
Every	9.17%	13.75%

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 (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (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.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

Safety Tier IIA Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2020 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

Entry Age	Integrated	
	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation
16	4.89%	7.34%
17	5.00%	7.50%
18	5.10%	7.65%
19	5.21%	7.81%
20	5.31%	7.97%
21	5.42%	8.13%
22	5.53%	8.30%
23	5.65%	8.47%
24	5.77%	8.65%
25	5.89%	8.83%
26	6.01%	9.02%
27	6.14%	9.21%
28	6.27%	9.40%
29	6.40%	9.60%
30	6.54%	9.81%
31	6.69%	10.03%
32	6.83%	10.25%
33	6.99%	10.48%
34	7.14%	10.71%
35	7.30%	10.95%
36	7.47%	11.20%
37	7.63%	11.45%
38	7.82%	11.73%
39	8.00%	12.00%

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

Safety Tier IIA Members' (Excluding "Safety 3" Members) Contribution Rates from the June 30, 2020 Actuarial Valuation (Expressed as a Percentage of Monthly Compensation)

Integrated		
Entry Age	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation
40	8.17%	12.26%
41	8.35%	12.53%
42	8.48%	12.72%
43	8.54%	12.81%
44	8.58%	12.87%
45	8.60%	12.90%
46	8.59%	12.89%
47	8.58%	12.87%
48	8.49%	12.73%
49 & Over	8.31%	12.46%

Interest: 7.25% per annum  
 COLA: None  
 Administrative Expenses: 0.11% of payroll added to Basic rates  
 Mortality: See *Section 4, Exhibit I*  
 Salary Increase: Inflation (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (See *Section 4, Exhibit I*)  
 Note: These rates are determined before any pickups by the employer, if any.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

“Safety 3” Safety Tier IIA Members' Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Integrated		
Entry Age	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation
Every	6.14%	9.21%

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 (2.75%) + Across-the-Board Increase (0.50%) + Merit and Promotion (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.

## Section 4: Actuarial Valuation Basis

### Exhibit III: Member Contribution Rates (continued)

Safety Tier IIB Members' Contribution Rates from the June 30, 2020 Actuarial Valuation  
(Expressed as a Percentage of Monthly Compensation)

Integrated		
All Members	First \$350 of Monthly Compensation	Over \$350 of Monthly Compensation
Basic	6.74%	10.11%
2% COLA	1.66%	2.49%
0.5% COLA	0.51%	0.77%
Total	8.91%	13.37%

The Safety 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.

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## Via Email

November 30, 2020

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

**Re: Kern County Employees' Retirement Association (KCERA)  
Possible Phase-ins of the Increase in County's UAAL Contribution Rate due to  
Changes in Actuarial Assumptions**

Dear Dominic:

We have been requested to provide information on possible two-year and three-year "phase-ins" of the increase in the County's unfunded actuarial accrued liability (UAAL) contribution rate due to changes in actuarial assumptions effective with the June 30, 2020 valuation. This letter provides an illustration of the phased in contribution rate and discusses the impact of the phase-ins on the ultimate employer contribution rate after the phase-ins are over.

### Background

In our valuation, we calculated that the changes in actuarial assumptions adopted by the Board would increase the aggregate employer contribution rate by 2.34% of payroll and the aggregate member rate by 0.02% of payroll.

Please note that the discussion in this letter reflects the general practice that, even when changes in employer rates are phased in, changes in the member rates due to assumption changes are not phased in. There are two main reasons for that practice. The principal reason is that, because the phase-in increases the UAAL and the UAAL is funded only by the employer, a phase-in of the member rates would in effect shift cost from the employees to the employers. In addition, because member contribution rates are based solely on normal cost and are unaffected by changes in the UAAL, the cost impact on member rates is generally smaller than the impact on employer rates.

Consistent with the action the Board took at the time of the last experience study, this letter illustrates only a phase-in of the UAAL amortization component of the employer rate increase. In practice, this is usually most of the cost impact. For example, of the 2.34% of rate impact noted above, the UAAL amortization component actually increased by 2.55%, which was offset by a 0.21% reduction in the normal cost rate.



Another reason behind the Board's decision to phase-in only the changes in the UAAL rate at the last experience study had to do with the fact that, under the California Public Employees' Pension Reform Act of 2013 (CalPEPRA), the normal cost is split 50:50 between the employers and the members. Since, as noted earlier, changes in member rates due to assumption changes are not phased in, it may be considered more consistent with CalPEPRA to exclude the change in employer normal cost from the phase-in as well.

We would advise the Board of Retirement that phasing in of the employer's contribution rate impact of assumption changes is a common practice both nationally and here in California. Some systems routinely phase in such rate changes whenever assumptions are changed and the cost impact is above some threshold amount. Furthermore, guidance on actuarial funding policy from both the California Actuarial Advisory Panel and the Conference of Consulting Actuaries views this as an acceptable practice as long as the phase-in period is no longer than the time until the next experience study, just as is being illustrated here.

### **Impact of Two-Year Phase-in of Only the Employer UAAL Contribution Rate Change**

The changes in actuarial assumptions increase the employer's UAAL contribution rate in the June 30, 2020 valuation by 2.50% of payroll for County General and Courts and 2.62% for County Safety. Under this scenario, the 2.50% and 2.62% would be phased in over two years starting with the June 30, 2020 valuation, which establishes the employer and member contribution rates for the 2021/2022 fiscal year.

The following is a general description of how a two-year phase-in would work:

The portion of the employer contribution to be phased in would be determined one time, as of the June 30, 2020 valuation. That total fixed amount of 2.50% of payroll for County General and Courts and 2.62% of payroll for County Safety will not be re-determined in later valuations.

The actual employer contribution rate would immediately reflect the full impact of the change in normal cost. The actual employer contribution rate would also reflect one-half of the impact of the change in the UAAL amortization rate. That amount is 1.25% of payroll ( $1/2 \times 2.50\%$ ) for County General and Courts and 1.31% of payroll ( $1/2 \times 2.62\%$ ) for County Safety. In other words, the actual employer rates would defer recognition of one-half of the impact by subtracting 1.25% for County General and Courts and 1.31% for County Safety from the employer rate determined in the June 30, 2020 valuation.

In the June 30, 2021 valuation, the employer contribution rate would reflect the full impact of the change in UAAL amortization rate shown above, or 2.50% of payroll for County General and Courts and 2.62% of payroll for County Safety. None of the original impact would be deferred and there would be no deduction from the employer rate determined in the June 30, 2021 valuation.

During the phase-in period, the plan is not receiving the full UAAL amortization payments. That means that in the next actuarial valuation, there will be an actuarial loss that will increase the future UAAL and future UAAL contributions. This contribution loss will be amortized and funded over a period of 18 years starting with the actuarial valuation that follows the contribution loss (i.e., following the year of the phased in contribution). In our experience, contribution losses due

to phase-ins are usually relatively small and so are not identified separately, but simply become part of “other gains and losses”.

If the Board adopts the two-year phase-in only for the impact on UAAL amortization, the employer contribution rates would immediately reflect the full impact of the change in normal cost. The cumulative increase in only the aggregate employer UAAL amortization rates both before and after applying the phase-in is provided in the tables below:

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County General and Courts**

**Cumulative Increase in Employer UAAL Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.50%	1.25%
2022 and later	2.50%	2.60%

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County Safety**

**Cumulative Increase in Employer UAAL Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.62%	1.31%
2022 and later	2.62%	2.72%

When we then add in the full impact of the change in normal cost, the total increases in the total employer rate would be as follows:

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County General<sup>1</sup>**

**Cumulative Increase in Aggregate Employer Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.50%	1.25%
2022 and later	2.50%	2.60%

<sup>1</sup> It is our understanding that, in practice, County General pays a single, aggregate employer normal cost rate, regardless of tier, which will differ from the tier-specific employer normal cost rates paid by Courts.

**Cost Phase-in Applied Only to UAAL Amortization Rate for Courts<sup>2</sup>**

**Cumulative Increase in Aggregate Employer Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.59%	1.34%
2022 and later	2.59%	2.69%

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County Safety<sup>3</sup>**

**Cumulative Increase in Aggregate Employer Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	1.62%	0.31%
2022 and later	1.62%	1.72%

These tables show that, because of the contribution losses discussed earlier, the rate impact for the second year of the phase-in is somewhat higher than simply adding another one-half of the phased in amount to the contribution rates for the preceding year.

**Impact of Three-Year Phase-in of Only the Employer UAAL Contribution Rate Change**

As an alternative, we have shown below the impact of a three-year phase-in of the UAAL amortization rate for the employer. The structure is similar to a two-year phase in, except that one-third of the rate increase will be recognized each year, causing contribution losses in the next two actuarial valuations that will increase the future UAAL and future UAAL contributions.

If the Board adopts the three-year phase-in only for the impact on UAAL amortization, the employer contribution rates would immediately reflect the full impact of the change in normal cost. The cumulative increase in only the aggregate employer UAAL amortization rates both before and after applying the phase-in is provided in the table below:

<sup>2</sup> It is our understanding that, in practice, Courts pay separate total employer rates for each tier. While the pooled UAAL rate to be phased-in for each tier would be the same, because of different normal cost rates we would calculate different total employer rates for each tier.

<sup>3</sup> It is our understanding that, in practice, County Safety pays a single employer rate, regardless of tier.

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County General and Courts**

**Cumulative Increase in Employer UAAL Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.50%	0.83%
2022 / 2023	2.50%	1.80%
2023 and later	2.50%	2.70%

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County Safety**

**Cumulative Increase in Employer UAAL Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.62%	0.87%
2022 / 2023	2.62%	1.89%
2023 and later	2.62%	2.83%

When we then add in the full impact of the change in normal cost, the total increases in the total employer rate would be as follows:

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County General<sup>4</sup>**

**Cumulative Increase in Aggregate Employer Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.50%	0.83%
2022 / 2023	2.50%	1.80%
2023 and later	2.50%	2.70%

<sup>4</sup> It is our understanding that, in practice, County General pays a single, aggregate employer normal cost rate, regardless of tier, which will differ from the tier-specific employer normal cost rates paid by Courts.

**Cost Phase-in Applied Only to UAAL Amortization Rate for Courts<sup>5</sup>**

**Cumulative Increase in Aggregate Employer Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	2.59%	0.92%
2022 / 2023	2.59%	1.89%
2023 and later	2.59%	2.79%

**Cost Phase-in Applied Only to UAAL Amortization Rate for  
County Safety<sup>6</sup>**

**Cumulative Increase in Aggregate Employer Rates**

<b>Fiscal Year</b>	<b><u>Without Phase-in</u></b>	<b><u>With Phase-in</u></b>
2021 / 2022	1.62%	-0.13%
2022 / 2023	1.62%	0.89%
2023 and later	1.62%	1.83%

These tables show that, because of the contribution losses discussed earlier, the rate impacts for the second and third years of the phase-in are somewhat higher than simply adding another one-third of the phased in amount to the contribution rates for the preceding year.

The actuarial calculations contained in this letter were performed under the supervision of Mark Hamwee, FSA, MAAA, Enrolled Actuary, who is a member of the American Academy of Actuaries and who meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Please let us know if you have any questions, and we look forward to discussing this with you and your Board.

Sincerely,



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



Molly Calcagno, ASA, MAAA, EA  
Actuary

<sup>5</sup> It is our understanding that, in practice, Courts pay separate total employer rates for each tier. While the pooled UAAL rate to be phased-in for each tier would be the same, because of different normal cost rates we would calculate different total employer rates for each tier.

<sup>6</sup> It is our understanding that, in practice, County Safety pays a single employer rate, regardless of tier.