Ventura County Employees' Retirement Association

Actuarial Valuation and Review

As of June 30, 2021

Segal

180 Howard Street, Suite 1100
San Francisco, CA 94105-6147
segalco.com
T 415.263.8200

November 30, 2021

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

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2021. It summarizes the actuarial data used in the valuation, analyzes the preceding year's experience, and establishes the funding requirements for July 1, 2022 to June 30, 2023.

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 Molly Calcagno, ASA, MAAA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in 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

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

Molly Calcagno, ASA, MAAA, EA
Actuary

JY/jl

Table of Contents

Table of Contents

Section 1: Actuarial Valuation Summary

Purpose and Basis

This report was prepared by Segal to present a valuation of the Ventura County Employees' Retirement Association ("VCERA" or "the Association") as of June 30, 2021. 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, 2021, provided by VCERA;
- The assets of the plan as of June 30, 2021, provided by VCERA;
- Economic assumptions regarding future salary increases and investment earnings adopted by the Board of Retirement for the June 30, 2021 valuation;
- Other actuarial assumptions regarding employee terminations, retirement, death, etc. adopted by the Board of Retirement for the June 30, 2021 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 and adopted by the Board in 2018. Details of the funding policy are provided in *Section 4, Exhibit 1* on pages 84 and 85.

A schedule of current amortization balances and payments may be found in *Section 3, Exhibit H* starting on page 66. A graphical projection of the Unfunded Actuarial Accrued Liability (UAAL) amortization balances and payments has been included in *Section 3, Exhibit I* on pages 70 and 71.

The Actuarial Standards Board Actuarial Standard of Practice (ASOP) No. 4 provides guidelines for actuaries to follow when measuring pension obligations. For a plan such as that offered by the Retirement Association that may use undesignated excess earnings to provide supplemental benefits, the valuation report must indicate that the impact of any such future use of undesignated excess earnings on the future financial condition of the plan has not been explicitly measured or otherwise reflected in the valuation. However, it should be noted that under the Board's Interest Crediting Policy, the balance of $1.33 billion (negative) in the Interest Crediting Shortfall Tracking Account (ICSTA) has to be fully restored out of future excess earnings before any subsequent earnings can be used to provide for any supplemental benefits. The ICSTA tracks any cumulative shortfalls in investment earnings relative to earnings required to credit full interest at the assumed rate to valuation reserves.

In this report, the employer and member contribution rates shown in *Section 2, Subsection F* and *Section 4, Exhibit 3*, respectively, are calculated based on a 50/50 sharing of Normal Cost for both PEPRA and non-PEPRA Tiers. For purposes of these calculations, we have been previously directed by VCERA to assume that the cessation of member contributions after 30 years of service for non-PEPRA members continues per the County Employees Retirement Law (CERL) and that the cost associated with this provision is to be paid for by employers.

The employer and member contribution rates calculated under the prior method (i.e., without 50/50 sharing of Normal Cost for non-PEPRA tiers) are shown in *Section 4, Exhibit 4* and *Exhibit 5*, respectively, starting on page 102.

The rates calculated in this report may be adopted by the Board for the fiscal year that extends from July 1, 2022 through June 30, 2023.

Valuation Highlights

1. On July 30, 2020, the California Supreme Court issued a decision in the Alameda County Deputy Sheriffs' Assn. et al. v. Alameda County Employees' Retirement Assn. litigation that clarified what should be considered compensation earnable for non-PEPRA members and pensionable compensation for PEPRA members. In response, the Board adopted a Resolution, which detailed the implementation of certain aspects of the Alameda decision including reclassifying certain pay items so that they are no longer included in compensation earnable, including standby and call-back pay. However, the Board has delayed certain exclusions including flexible benefit credits. Our understanding is that the membership data provided in this valuation reflects some of the reclassifications of the pay codes that have been adopted by the Board for active members, including standby and call-back pay. As discussed with VCERA staff, the effect of the Alameda Decision will be reflected as gains and losses as issues are settled and corrections continue to be made to the membership data provided for each upcoming valuation. In addition, any additional impact on the UAAL related to recovery of benefits and/or refunds of member contributions previously paid in conjunction with these pay items has not been reflected in this valuation but will be reflected in future valuations once it is known.

Pg. 76

2. The results of this valuation reflect changes in the actuarial assumptions as recommended by Segal and adopted by the Board for the June 30, 2021 valuation. These changes were documented in our Actuarial Experience Study and are also outlined in *Section 4, Exhibit 1* of this report. The assumption changes resulted in an increase in the Actuarial Accrued Liability of $114.8 million (or a 1.6% increase), an increase in the average employer contribution rate of 1.84% of payroll, and an increase in the average member rate of 0.67% of payroll. Of the 1.84% increase in the employer rate, 0.82% is due to an increase in the Normal Cost and 1.02% is due to an increase in the UAAL rate.

Pg. 37

3. The ratio of the Valuation Value of Assets to Actuarial Accrued Liabilities increased from 89.6% to 92.9%. This ratio is one measure of funding status, and its history is a measure of funding progress. The ratio of the Market Value of Assets to the Actuarial Accrued Liability increased from 87.7% to 107.4%. These measurements are not necessarily appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation or the need for of the amount of future contributions.

Pg. 30

4. The Association's UAAL (which is based on the Valuation Value of Assets) has decreased from $704 million to $507 million. The decrease in UAAL is primarily due to the investment return (after "smoothing") more than the 7.25% return assumption partially offset by the changes in actuarial assumptions adopted by the Board. A complete reconciliation of the Association's UAAL is provided in *Section 2, Subsection E*.

Pg. 24

5. The net actuarial gain from investment and contribution experience is $243.5 million, or 3.4% of Actuarial Accrued Liability. The net experience gain from sources other than investment and contribution experience was 0.2% of the Actuarial Accrued Liability. This gain was primarily due to lower than expected cost-of-living adjustment (COLA) increases for retirees and beneficiaries.

Pg. 32

6. The average employer contribution rate calculated in this valuation decreased from 22.22% of payroll to 21.32% of payroll. This decrease is primarily due to the investment return (after "smoothing") more than the 7.25% return assumption partially offset by the

changes in actuarial assumptions adopted by the Board. A complete reconciliation of the Association's average employer rate is provided in *Section 2, Subsection F*.

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

Pg. 33

7. The average member rate calculated in this valuation increased from 9.91% of payroll to 10.55% of payroll. This change was primarily due to the changes in actuarial assumptions adopted by the Board. A complete reconciliation of the Association's average member rate is provided in *Section 2, Subsection F*.

Pg. 25

8. The rate of return on the Market Value of Assets was 31.33% for the 2020-2021 plan year. The return on the Valuation Value of Assets was 11.30% for the same period after considering the recognition of prior years' investment gains and losses. This resulted in an actuarial gain when measured against the assumed rate of return of 7.25% (prior to the change in the assumed rate of return to 7.00% with this valuation). This actuarial investment gain decreased the average employer contribution rate by 2.65% of payroll. As part of the review of the assumed long-term rate of return on investments and other assumptions in the next triennial experience study scheduled for 2024, we would examine the low fixed income interest rate environment, and evolving expectations of future investment returns for various asset classes. This will allow us to assist the Board as they continue to monitor anticipated investment returns relative to the assumed long-term rate of return on investment of 7.00%.

Pg. 21

9. The total unrecognized net investment gain as of June 30, 2021 is about $1.0 billion as compared to an unrecognized net investment loss of $129.2 million in the previous valuation. This deferred investment gain of $1.0 billion 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 gains of $1.0 billion represent about 13.5% of the Market Value of Assets. Unless offset by future investment losses or other unfavorable experience, the recognition of the $1.0 billion market gains 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 gains in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the funded ratio would increase from 92.9% to 107.4%.

      For comparison purposes, if all the net deferred losses in the June 30, 2020 valuation had been recognized immediately in the June 30, 2020 valuation, the funded ratio in last year's valuation would have decreased from 89.6% to 87.7%.

   b. If the net deferred gains in this year's valuation were recognized immediately and entirely in the Valuation Value of Assets, the average employer contribution rate would decrease from 21.32% to 10.43% of payroll (i.e., Normal Cost component only).

      For comparison purposes, if all the net deferred losses in the June 30, 2020 valuation had been recognized immediately in the June 30, 2020 valuation, the average employer contribution rate in last year's valuation would have increased from 22.22% to 23.65% of payroll.

Section 1: Actuarial Valuation Summary

Pg. 41

10. The Actuarial Standards Board approved Actuarial Standard of Practice No. 51 (ASOP 51) regarding risk assessment, which was first effective with VCERA'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 VCERA 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.

    Because 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 have not been engaged to perform a detailed analysis of the potential range of the impact of risk relative to the Association's future financial condition, but have included a brief discussion of key risks that may affect the Association in *Section 2, Subsection J*. A more detailed assessment of the risks tailored to specific interests or concerns of the Board would provide the Board with a better understanding of the inherent risks. This assessment would further discuss and highlight information and risks particular to VCERA such as detailed historical experience and key events, growing plan maturity, heightened contribution sensitivity to asset and liability changes, and projected sensitivity to potential future investment returns through selected scenario or stress test projections.

11. Segal strongly recommends an actuarial funding policy that targets 100% funding of the Actuarial Accrued Liability. Generally, this implies payments that are ultimately at least enough to cover Normal Cost, interest on the Unfunded Actuarial Accrued Liability and the principal balance. The funding policy adopted by the Board meets this standard.

12. This report constitutes an actuarial valuation for the purpose of determining the actuarially determined contribution (ADC) under the plan's funding policy and measuring the progress of that funding policy. The Net Pension Liability (NPL) and Pension Expense under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68, for inclusion in the plan and employer's financial statements as of June 30, 2021, will be provided separately. The accounting disclosures will utilize different methodologies from those employed in the funding valuation, as required by the GASB. However, the ADC in this valuation is expected to be used as the ADC for GASB financial reporting.

Section 1: Actuarial Valuation Summary

13. It is important to note that this actuarial valuation is based on plan assets as of June 30, 2021. Due to the COVID-19 pandemic, market conditions have changed significantly since the onset of the Public Health Emergency. 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. Moreover, this actuarial valuation does not include any possible short-term or long-term impacts on mortality of the covered population that may emerge after June 30, 2021. While it is impossible to determine how the pandemic will affect market conditions and other demographic experience of the plan in future valuations, Segal is available to prepare projections of potential outcomes upon request.

Summary of Key Valuation Results

		June 30, 2021		June 30, 2020	
		Total Rate	Estimated Annual Dollar Amount[1] ($ in '000s)	Total Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
Employer Contribution Rates:[2]	• General Tier 1	24.56%	$564	23.57%	$967
	• General Tier 2	13.85%	28,103	14.31%	29,583
	• General PEPRA Tier 2	13.80%	13,173	14.49%	11,904
	• General Tier 2 w/ COLA[3]	20.82%	40,687	20.43%	41,272
	• General PEPRA Tier 2 w/ COLA[3]	20.77%	26,878	20.70%	24,792
	• General Combined	17.49%	109,405	17.65%	108,518
	• Safety	34.51%	50,743	37.61%	55,836
	• Safety PEPRA	31.34%	14,148	35.17%	14,150
	• Safety Combined	33.77%	64,891	37.09%	69,986
	All Categories Combined	**21.32%**	**$174,296**	**22.22%**	**$178,504**
Average Member Contribution Rates:[2,4,5]	• General Tier 1	11.62%	$267	10.53%	$432
	• General Tier 2	7.82%	15,862	7.30%	15,090
	• General PEPRA Tier 2	7.77%	7,416	7.48%	6,145
	• General Tier 2 w/ COLA[3]	10.45%	20,424	9.93%	20,057
	• General PEPRA Tier 2 w/ COLA[3]	10.40%	13,460	10.11%	12,105
	• Safety	14.91%	21,924	13.43%	19,938
	• Safety PEPRA	15.34%	6,925	14.57%	5,862
	All Categories Combined	**10.55%**	**$86,278**	**9.91%**	**$79,629**

[1] Based on projected compensation for each year.
[2] Before reflection of any member rate that may be "picked-up" by the employer. Contributions are assumed to be paid throughout the year.
[3] Throughout this report, this category represents those Tier 2 members who contribute a negotiated 2.63% of compensation for a fixed 2% COLA pursuant to Government Code 31627 that applies to service after March 2003.
[4] The non-refundability factors are 1.00 for General Tier 1, Tier 2 (non-PEPRA) and Safety (non-PEPRA) for both June 30, 2021 and June 30, 2020.
[5] Average member contribution rates for non-PEPRA tiers as shown in this exhibit are after reflecting the impact of the cessation of member contributions after 30 years of service. Individual member rates can be found in *Section 4, Exhibit 3*.

Summary of Key Valuation Results (continued)

		June 30, 2021 ($ in '000s)	June 30, 2020 ($ in '000s)
Actuarial Accrued Liability as of June 30:	• Retired members and beneficiaries	$4,073,549	$3,877,577
	• Inactive vested members[1]	240,545	197,387
	• Active members	2,840,791	2,672,808
	• Total Actuarial Accrued Liability	$7,154,885	$6,747,772
	• Normal Cost for plan year beginning June 30	$171,528	$157,552
Assets as of June 30:	• Market Value of Assets (MVA)	$7,681,553	$5,914,852
	• Valuation Value of Assets (VVA)[2]	6,648,154	6,044,036
Funded status as of June 30:	• Unfunded Actuarial Accrued Liability on Market Value of Assets basis	$(526,668)	$832,920
	• Funded percentage on MVA basis	107.36%	87.66%
	• Unfunded Actuarial Accrued Liability on Valuation Value of Assets basis	$506,731	$703,736
	• Funded percentage on VVA basis	92.92%	89.57%
Key assumptions:	• Net investment return	7.00%	7.25%
	• Price inflation	2.50%	2.75%
	• Payroll growth increase	3.00%	3.25%

[1] Includes inactive members with member contributions on deposit.
[2] Excludes non-valuation reserves.

Summary of Key Valuation Results (continued)

		June 30, 2021	June 30, 2020	Change From Prior Year
Demographic data as of June 30:	**Active Members:**			
	• Number of members	8,491	8,644	-1.8%
	• Average age	45.0	44.9	0.1
	• Average service	11.6	11.4	0.2
	• Total projected compensation	$817,636,092	$803,381,542	1.8%
	• Average projected compensation	$96,294	$92,941	3.6%
	Retired Members and Beneficiaries:			
	• Number of members:			
	• Service retired	5,830	5,639	3.4%
	• Disability retired	811	812	-0.1%
	• Beneficiaries	1,110	1,070	3.7%
	• Total	7,751	7,521	3.1%
	• Average age	70.9	70.7	0.2
	• Average monthly benefit	$3,512	$3,423	2.6%
	Inactive Vested Members:			
	• Number of members[1]	3,491	3,218	8.5%
	• Average age	46.1	46.1	0.0
	Total Members:	19,733	19,383	1.8%

[1] Includes inactive members with member contributions on deposit.

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:

Plan of benefits	Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
Participant data	An actuarial valuation for a plan is based on data provided to the actuary by the Association. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
Assets	The valuation is based on the Market Value of Assets as of the valuation date, as provided by the Association. The Association uses a "Valuation Value of Assets" that differs from market value to gradually reflect six-month changes in the Market Value of Assets in determining the contribution requirements.
Actuarial assumptions	In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results that does not mean that the previous assumptions were unreasonable.
Models	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.[1]

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.

[1] VCERA 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: 2012– 2021

Year Ended June 30	Active Members	Inactive Vested Members[1]	Retired Members and Beneficiaries	Total Non-Actives	Ratio of Non-Actives to Actives	Ratio of Retired Members and Beneficiaries to Actives
2012	8,019	2,161	5,658	7,819	0.98	0.71
2013	8,068	2,249	5,888	8,137	1.01	0.73
2014	8,210	2,339	6,121	8,460	1.03	0.75
2015	8,299	2,441	6,338	8,779	1.06	0.76
2016	8,509	2,639	6,539	9,178	1.08	0.77
2017	8,636	2,809	6,766	9,575	1.11	0.78
2018	8,611	2,909	7,038	9,947	1.16	0.82
2019	8,696	3,041	7,280	10,321	1.19	0.84
2020	8,644	3,218	7,521	10,739	1.24	0.87
2021	8,491	3,491	7,751	11,242	1.32	0.91

[1] Includes inactive members with member contributions on deposit.

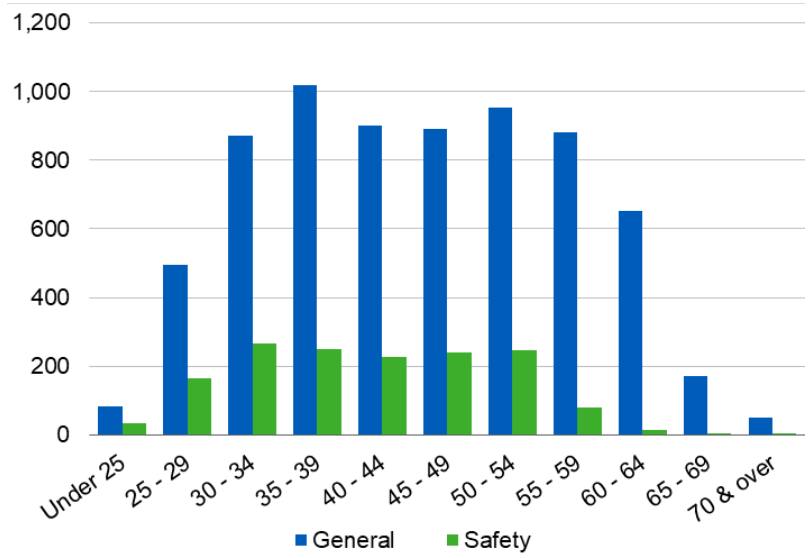
Active Members

Plan costs are affected by the age, years of service and compensation of active members. In this year's valuation, there were 8,491 active members with an average age of 45.0, average years of service of 11.6 years and average compensation of $96,294. The 8,644 active members in the prior valuation had an average age of 44.9, average service of 11.4 years and average compensation of $92,941.

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

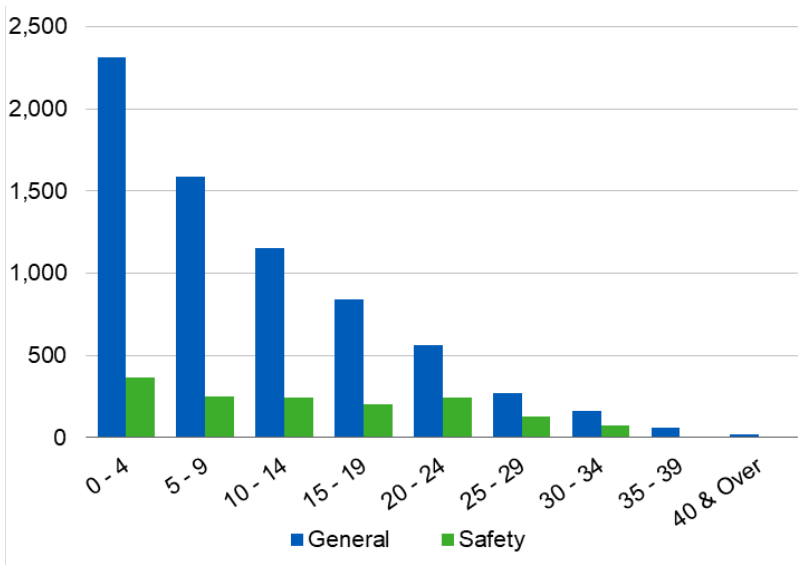
Distribution of Active Members as of June 30, 2021

Actives by Age



Average age	45.0
Prior year average age	44.9
Difference	0.1

Actives by Years of Service



Average years of service	11.6
Prior year average years of service	11.4
Difference	0.2

Inactive Members

In this year's valuation, there were 3,491 members with a vested right to a deferred or immediate vested benefit or entitled to a return of their member contributions versus 3,218 in the prior valuation.

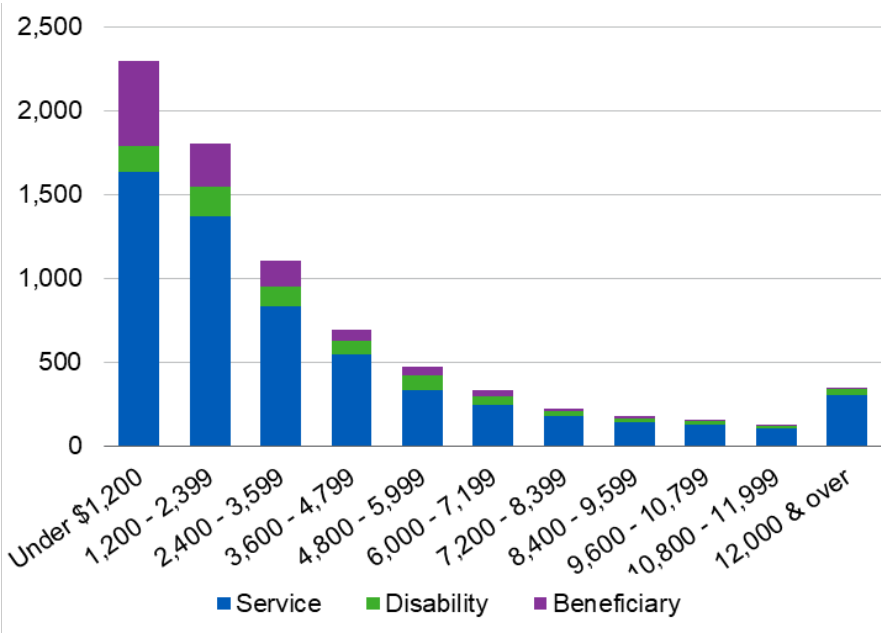
Retired Members and Beneficiaries

As of June 30, 2021, 6,641 retired members and 1,110 beneficiaries were receiving total monthly benefits of $27,223,728. For comparison, in the previous valuation, there were 6,451 retired members and 1,070 beneficiaries receiving total monthly benefits of $25,743,842. These monthly benefits exclude any benefits for vested fixed supplemental and non-vested supplemental benefit amounts.

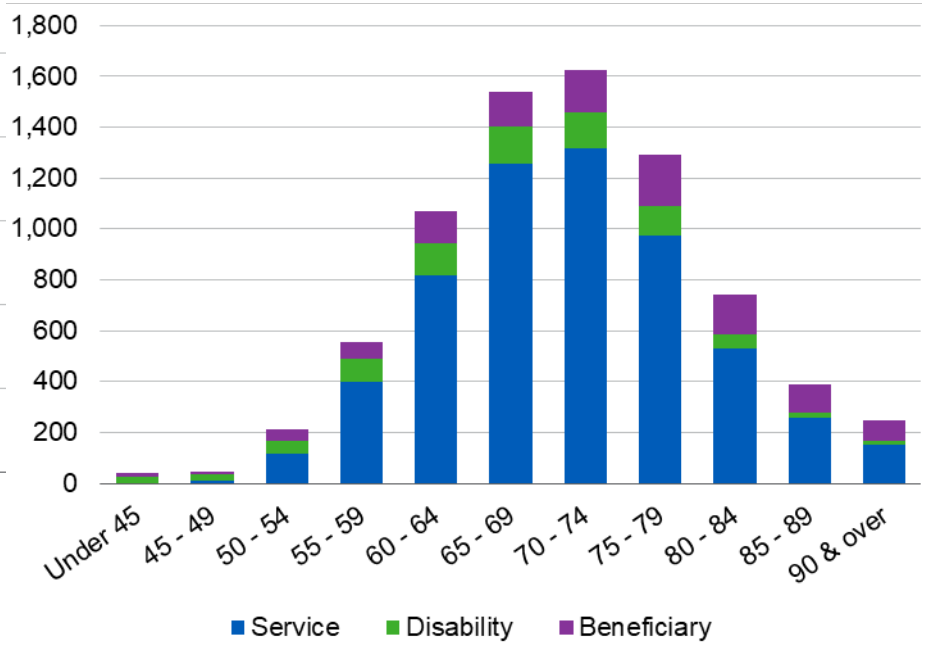
As of June 30, 2021, the average monthly benefit for retired members and beneficiaries is $3,512, compared to $3,423 in the previous valuation. The average age for retired members and beneficiaries is 70.9 in the current valuation, compared with 70.7 in the prior valuation.

Distribution of Retired Members and Beneficiaries as of June 30, 2021

Retired Members and Beneficiaries by Type and Monthly Amount



Retired Members and Beneficiaries by Type and Age



Historical Plan Population

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

Member Data Statistics: 2012 – 2021

	Active Members			Retired Members and Beneficiaries		
Year Ended June 30	Count	Average Age	Average Service	Count	Average Age	Average Monthly Amount
2012	8,019	45.4	11.1	5,658	68.9	$2,769
2013	8,068	45.4	11.2	5,888	69.1	2,862
2014	8,210	45.3	11.2	6,121	69.4	2,897
2015	8,299	45.2	11.2	6,338	69.6	2,936
2016	8,509	45.0	11.2	6,539	69.8	3,024
2017	8,636	45.0	11.2	6,766	70.2	3,108
2018	8,611	44.9	11.3	7,038	70.3	3,230
2019	8,696	44.9	11.3	7,280	70.5	3,329
2020	8,644	44.9	11.4	7,521	70.7	3,423
2021	8,491	45.0	11.6	7,751	70.9	3,512

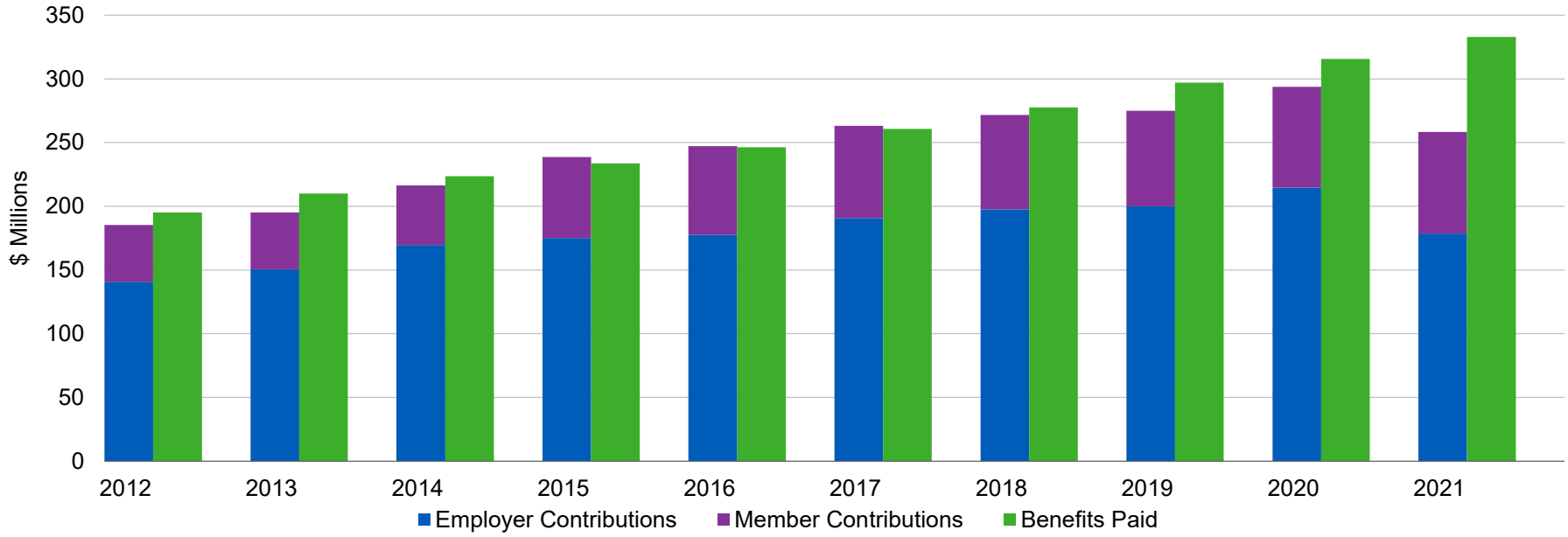
B. Financial Information

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

Additional financial information, including a summary of 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, 2012 – 2021



Section 2: Actuarial Valuation Results

Determination of Actuarial Value of Assets for Year Ended June 30, 2021

		Actual Return	Expected Return	Investment Gain/Loss	Percent Deferred	Unrecognized Amount[1]
1	**Market Value of Assets**					**$7,681,553,297**
2	Calculation of unrecognized return					
	a. Six months ended June 30, 2016	$152,698,097	$163,960,894	$(11,262,797)	0%	$0
	b. Six months ended December 31, 2016	223,970,859	164,370,060	59,600,799	0	0
	c. Six months ended June 30, 2017	351,030,738	172,814,126	178,216,612	10	17,821,661
	d. Six months ended December 31, 2017	399,470,558	185,992,710	213,477,848	20	42,695,570
	e. Six months ended June 30, 2018	38,736,481	200,860,519	(162,124,038)	30	(48,637,211)
	f. Six months ended December 31, 2018	(247,595,921)	201,992,652	(449,588,573)	40	(179,835,429)
	g. Six months ended June 30, 2019	608,522,342	192,294,765	416,227,577	50	208,113,788
	h. Six months ended December 31, 2019	363,251,754	207,517,685	155,734,069	60	93,440,441
	i. Six months ended June 30, 2020	(161,966,237)	220,290,552	(382,256,789)	70	(267,579,752)
	j. Six months ended December 31, 2020	963,486,000	213,744,479	749,741,521	80	599,793,217
	k. Six months ended June 30, 2021	877,898,342	247,317,215	630,581,127	90	567,523,014
	l. Total unrecognized return[2]					$1,033,335,299
3	**Actuarial Value of Assets 1 - 2l**					**$6,648,217,998**
4	Actuarial Value of Assets as a percentage of Market Value of Assets **3 / 1**					86.5%
5	Non-valuation reserves:					
	a. Non-vested Supplemental Benefit					$64,464
	b. Statutory Contingency					0
	c. Subtotal					$64,464
6	**Valuation Value of Assets 3 – 5c**					**$6,648,153,534**

Note: Results may be slightly off due to rounding

[1] Recognition at 10% per six month period over 5 years.

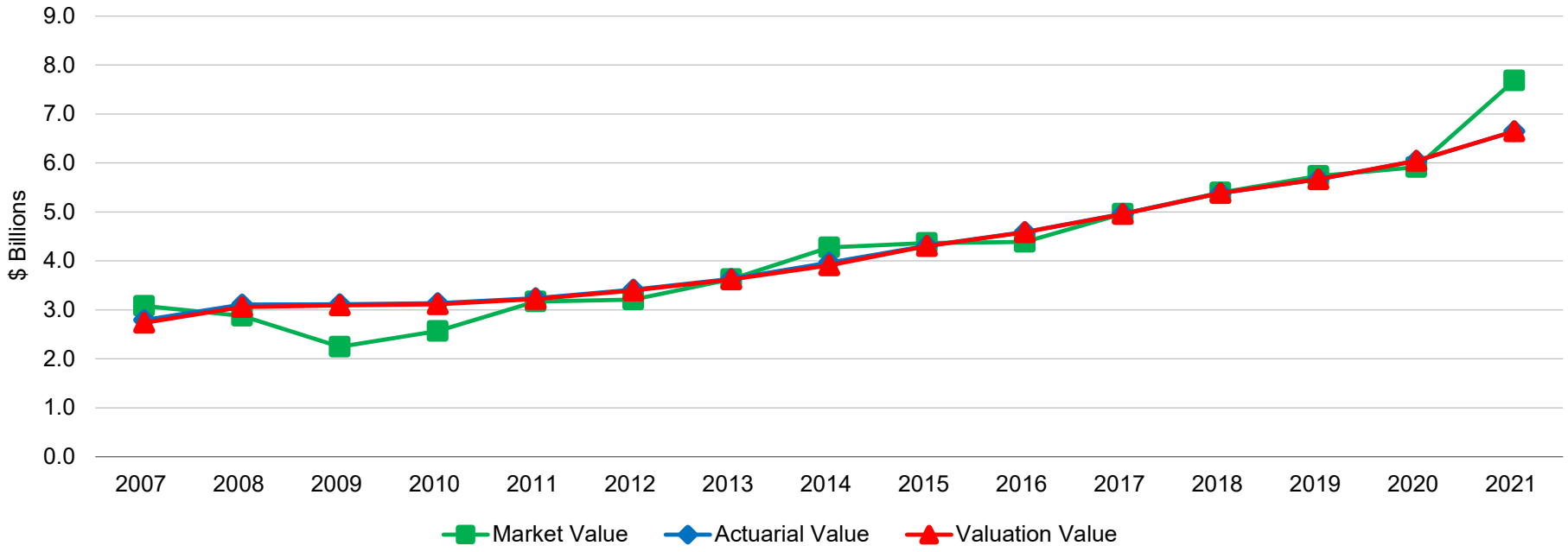
[2] Deferred return as of June 30, 2021 recognized in each of the next five years:

a.	Amount recognized on June 30, 2022	$252,180,209
b.	Amount recognized on June 30, 2023	207,875,383
c.	Amount recognized on June 30, 2024	272,382,743
d.	Amount recognized on June 30, 2025	237,838,851
e.	Amount recognized on June 30, 2026	63,058,113
f.	Subtotal	$1,033,335,299

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, 2007 – 2021



Section 2: Actuarial Valuation Results

Allocation of Valuation Value of Assets as of June 30, 2021

		Allocated Assets for Funding			
		General Tier 1	General Tier 2	Safety	Total
1	**Allocated Assets as of Beginning of Plan Year**	**$333,390,480**	**$2,945,796,737**	**$2,764,848,591**	**$6,044,035,808**
2	Member Contributions	299,502	51,065,547	26,168,135	77,533,184
3	Member Buybacks	47,465	839,415	399,602	1,286,482
4	Employer Pick-up Contributions Credited to Member Account	19,783	780,639	0	800,422
5	Employer Contributions	864,149	105,733,560	72,064,349	178,662,058
6	Refunds of Member Contributions and Death Benefits Paid	533,493	4,242,045	469,882	5,245,420
7	Retiree Benefit Payments Excluding Non-vested Supplemental Payments	81,457,014	114,278,911	131,982,407	327,718,332
8	Subtotal (Items 1 + 2 + 3 + 4 + 5 – 6 – 7)	$252,630,872	$2,985,694,942	$2,731,028,388	$5,969,354,202
9	Weighted Average Fund Balance: Item 1 + ½ of (Items 2, 3, 4, 5) – ½ of (Items 6, 7)	293,010,676	2,965,745,839	2,747,938,490	6,006,695,005
10	Earnings Allocated in Proportion to Item 9	33,112,294	335,150,410	310,536,628	678,799,332
11	**Valuation Value of Assets (Items 8 + 10)**	**$285,743,166**	**$3,320,845,352**	**$3,041,565,016**	**$6,648,153,534**

Note: Results may not total due to rounding.

C. Actuarial Experience

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

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

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

The net total gain is $258.9 million, which includes $243.3 million from investment gains, a gain of $0.2 million from contribution experience and $15.5 million in gains from all other sources. The net experience variation from individual sources other than investments and contributions was 0.2% 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, 2021

1	Net gain from investments[1]	$(243,314,000)
2	Net gain from contribution experience	(154,000)
3	Net gain from other experience[2]	(15,477,000)
4	**Net experience gain: 1 + 2 + 3**	**$(258,945,000)**

[1] Details on next page.
[2] See *Section 2, Subsection E* for further details. Does not include the effect of plan or assumption changes, if any.

Investment Experience

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the plan's investment policy. The rate of return on the Market Value of Assets was 31.33% for the year ended June 30, 2021.

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 2020-2021 plan year was 11.30%. Because the actual return for the year was more than the assumed return, the plan experienced an actuarial gain during the year ended June 30, 2021 with regard to its investments.

Investment Experience for Year Ended June 30, 2021

		Market Value	Actuarial Value	Valuation Value
1	Net investment income	$1,841,384,342	$678,799,332	$678,799,332
2	Average value of assets	5,877,510,513	6,006,760,224	6,006,695,005
3	Rate of return: **1 ÷ 2**	31.33%	11.30%	11.30%
4	Assumed rate of return	7.25%	7.25%	7.25%
5	Expected investment income: **2 x 4**	$426,119,512	$435,490,116	$435,485,388
6	**Actuarial gain/(loss): 1 - 5**	**$1,415,264,830**	**$243,309,216**	**$243,313,944**

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: 2012 – 2021

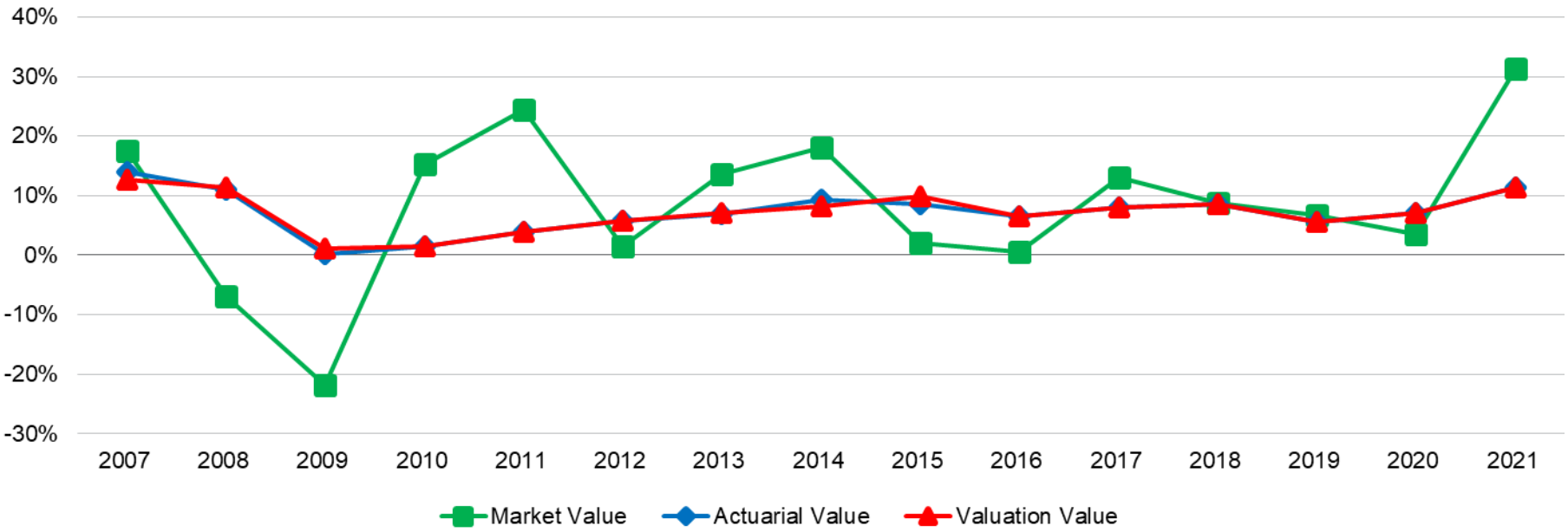
	Market Value Investment Return[1]		Actuarial Value Investment Return[1]		Valuation Value Investment Return[1]	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent
2012	$47,147,363	1.49%	$184,787,098	5.72%	$184,909,716	5.75%
2013	432,694,392	13.51%	237,282,497	6.97%	237,282,497	7.00%
2014	654,535,161	18.06%	338,343,729	9.32%	294,307,214	8.13%
2015	84,826,216	1.98%	341,233,326	8.60%	384,442,119	9.82%
2016	21,265,100	0.49%	280,531,179	6.51%	280,531,179	6.52%
2017	575,001,597	13.10%	368,806,019	8.03%	368,806,019	8.04%
2018	438,207,040	8.83%	427,484,168	8.62%	427,484,169	8.62%
2019	360,926,420	6.70%	301,492,986	5.61%	301,492,986	5.61%
2020	201,285,517	3.52%	401,285,288	7.10%	401,285,287	7.10%
2021	1,841,384,342	31.33%	678,799,332	11.30%	678,799,332	11.30%
Most recent five-year geometric average return		12.29%		8.12%		8.12%
Most recent ten-year geometric average return		9.55%		7.77%		7.78%

[1] Net of administrative and investment expenses.

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, 2007 – 2021



Contributions

Contributions for the year ended June 30, 2021 totaled $258.3 million, compared to the projected amount of $258.1 million. This resulted in a gain of $0.2 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, 2021 amounted to $15.5 million, which is 0.2% of the Actuarial Accrued Liability. See *Section 2, Subsection E* for a detailed development of the Unfunded Actuarial Accrued Liability.

D. Other Changes in the Actuarial Accrued Liability

The Actuarial Accrued Liability as of June 30, 2021 is $7.2 billion, an increase of $0.4 billion, or 6.0%, 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 assumption changes reflected in this report were based on the July 1, 2017 through June 30, 2020 Actuarial Experience Study report dated June 3, 2021. The assumption changes resulted in an increase of $114.8 million (1.6%) in the Actuarial Accrued Liability and an increase of $12.0 million (7.5%) in the Normal Cost.

- The assumption changes include changes to investment return, inflation, merit and promotion salary increases, retirement from active employment, retirement age for inactive vested members and differentiating between reciprocal and non-reciprocal inactive vested members, pre-retirement mortality, healthy life post-retirement mortality, disabled life post-retirement mortality, termination, disability (service and non-service connected), and in-service redemptions.
- Includes a refinement in calculating some member's entry ages as used in Entry Age actuarial cost method calculations. Previously, the Normal Cost was spread over a period including both the member's service with a reciprocal system (if any) and their VCERA service. The refinement spreads the Normal Cost over only the member's service period with VCERA. This refinement did not change the Present Value of Future Benefits but it increased the Normal Cost and decreased the Actuarial Accrued Liability for members with reciprocal service.

Details on actuarial assumptions and methods are in *Section 4, Exhibit 1*.

Plan Provisions

On July 30, 2020, the California Supreme Court issued a decision in the Alameda County Deputy Sheriff's Assn. et al., v. Alameda County Employees' Retirement Assn. litigation that clarified what should be considered compensation earnable for non-PEPRA members and pensionable compensation for PEPRA members for that and other similarly situated 1937 Act county employees retirement systems. See Item (1) on page 7 of this report for a discussion of the action taken by VCERA.

A summary of plan provisions is in *Section 4, Exhibit 2*.

E. Development of Unfunded Actuarial Accrued Liability

Development for Year Ended June 30, 2021

1	**Unfunded Actuarial Accrued Liability at beginning of year**		**$703,736,000**
2	Total Normal Cost at middle of year		157,552,000
3	Expected employer and member contributions		(258,133,000)
4	Interest		47,718,000
5	Expected Unfunded Actuarial Accrued Liability		$650,873,000
6	Changes due to:		
	a. Investment return more than expected (after "smoothing")	$(243,314,000)	
	b. Actual contributions more than expected	(154,000)	
	c. COLA increases lower than expected	(30,975,000)	
	d. Individual salary increases higher than expected[1]	27,129,000	
	e. Other experience gains	(11,631,000)	
	f. Changes in actuarial assumptions	114,803,000	
	Total changes		$(144,142,000)
7	**Unfunded Actuarial Accrued Liability at end of year**		**$506,731,000**

Note: The sum of items 6c through 6e equals the "Net gain from other experience" shown in *Section 2, Subsection C*.

[1] Net of the salary decreases reflected in the June 30, 2021 active membership data due to the exclusion of certain reclassified pay items from compensation earnable, including standby and call-back pay, based on action taken by the Board as a result of the Alameda decision.

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, 2021, the average recommended employer contribution is 21.32% of compensation.

Under the current funding policy, the Association's required contribution rate decreased as a percentage of pay. This was mainly the result of the investment return (after "smoothing") more than the 7.25% return assumption partially offset by a change in actuarial assumptions.

The Board sets the funding policy used to calculate the recommended contribution based on layered amortization periods. See *Section 4, Exhibit 1* for further details on the funding policy.

The contribution requirement as of June 30, 2021 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

		2021		2020	
	All Tiers Combined	**Amount ($ in '000s)**	**% of Projected Compensation**	**Amount ($ in '000s)**	**% of Projected Compensation**
1	Total Normal Cost	$171,528	20.98%	$157,552	19.61%
2	Expected member Normal Cost contributions	(86,278)	(10.55%)	(79,629)	(9.91%)
3	Employer Normal Cost: **(1) + (2)**	$85,250	10.43%	$77,923	9.70%
4	Actuarial Accrued Liability	7,154,885		6,747,772	
5	Valuation Value of Assets	6,648,154		6,044,036	
6	Unfunded Actuarial Accrued Liability (UAAL): **(4) - (5)**	$506,731		$703,736	
7	Payment on UAAL	$89,046	10.89%	$100,581	12.52%
8	Total average recommended employer contribution: **3 + 7**	$174,296	21.32%	$178,504	22.22%
9	Projected compensation	$817,636		$803,381	

Note: Contributions are assumed to be paid at the middle of the year.

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 of Average Recommended Employer Contribution Rate from June 30, 2020 to June 30, 2021

		Contribution Rate	Estimated Annual Dollar Amount[1] ($ in '000s)
1	**Average Recommended Employer Contribution as of June 30, 2020**	**22.22%**	**$178,504**
2	Effect of investment return more than expected (after "smoothing")	(2.65%)	$(21,667)
3	Effect of actual contributions more than expected	0.00%	0
4	Effect of COLA increases lower than expected	(0.34%)	(2,780)
5	Effect of individual salary increases higher than expected[2]	0.30%	2,453
6	Effect of amortizing prior year's UAAL over a smaller than expected projected total payroll	0.17%	1,390
7	Effect of changes in demographics of members amongst tiers on Normal Cost	(0.09%)	(736)
8	Effect of other experience gains[3]	(0.13%)	2,087
9	Effect of changes in actuarial assumptions	1.84%	15,045
10	Total change	(0.90%)	$(4,208)
11	**Average Recommended Employer Contribution as of June 30, 2021**	**21.32%**	**$174,296**

[1] Based on projected compensation for each year.
[2] Net of the salary decreases reflected in the June 30, 2021 active membership data due to the exclusion of certain reclassified pay items from compensation earnable, including standby and call-back pay, based on action taken by the Board as a result of the Alameda decision.
[3] Other differences in actual versus expected experience including (but not limited to) retirement, mortality, disability, termination and in-service redemption experience. Estimated annual dollar cost also reflects change in payroll from prior valuation.

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 Average Recommended Member Contribution Rate from June 30, 2020 to June 30, 2021

		Contribution Rate[1]	Estimated Annual Dollar Amount[2] ($ in '000s)
1	**Average Recommended Member Contribution as of June 30, 2020**	**9.91%**	**$79,629**
2	Effect of changes in member demographics amongst tiers[3]	(0.03%)	$1,171
3	Effect of changes in actuarial assumptions	0.67%	5,478
4	Total change	0.64%	$6,649
5	**Average Recommended Member Contribution as of June 30, 2021**	**10.55%**	**$86,278**

[1] Average member contribution rates are after reflecting the impact of the cessation of member contribution after 30 years of service for non-PEPRA tiers.
[2] Based on projected compensation for each year.
[3] Estimated annual dollar cost also reflects change in payroll from prior valuation.

Recommended Employer Contribution Rate

	June 30, 2021 Actuarial Valuation Recommended Rates for FY 2022-23				June 30, 2020 Actuarial Valuation Recommended Rates for FY 2021-22			
	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)
General Tier 1 Members								
Normal Cost[2]	9.31%	2.93%	12.24%	$281	8.21%	2.64%	10.85%	$445
UAAL[3]	6.03%	6.29%	12.32%	283	7.01%	5.71%	12.72%	522
Total Contributions	**15.34%**	**9.22%**	**24.56%**	**$564**	**15.22%**	**8.35%**	**23.57%**	**$967**
General Tier 2 Members								
Normal Cost	7.82%	0.00%	7.82%	$15,862	7.30%	0.00%	7.30%	$15,090
UAAL[3]	6.03%	0.00%	6.03%	12,241	7.01%	0.00%	7.01%	14,493
Total Contributions	**13.85%**	**0.00%**	**13.85%**	**$28,103**	**14.31%**	**0.00%**	**14.31%**	**$29,583**
General PEPRA Tier 2 Members								
Normal Cost	7.77%	0.00%	7.77%	$7,416	7.48%	0.00%	7.48%	$6,145
UAAL[3]	6.03%	0.00%	6.03%	5,757	7.01%	0.00%	7.01%	5,759
Total Contributions	**13.80%**	**0.00%**	**13.80%**	**$13,173**	**14.49%**	**0.00%**	**14.49%**	**$11,904**
General Tier 2 Members w/ COLA								
Normal Cost[4]	7.82%	0.68%	8.50%	$16,613	7.30%	0.41%	7.71%	$15,573
UAAL[3,5]	6.03%	6.29%	12.32%	24,074	7.01%	5.71%	12.72%	25,699
Total Contributions	**13.85%**	**6.97%**	**20.82%**	**$40,687**	**14.31%**	**6.12%**	**20.43%**	**$41,272**
General PEPRA Tier 2 Members w/ COLA								
Normal Cost[4]	7.77%	0.68%	8.45%	$10,936	7.48%	0.50%	7.98%	$9,555
UAAL[3,5]	6.03%	6.29%	12.32%	15,942	7.01%	5.71%	12.72%	15,237
Total Contributions	**13.80%**	**6.97%**	**20.77%**	**$26,878**	**14.49%**	**6.21%**	**20.70%**	**$24,792**
All General Members[6]								
Normal Cost	7.81%	0.36%	8.17%	$51,108	7.37%	0.24%	7.61%	$46,808
UAAL	6.03%	3.29%	9.32%	58,297	7.01%	3.03%	10.04%	61,710
Total Contributions	**13.84%**	**3.65%**	**17.49%**	**$109,405**	**14.38%**	**3.27%**	**17.65%**	**$108,518**

Note: Applicable footnotes are shown on next page.

Recommended Employer Contribution Rate (continued)

	June 30, 2021 Actuarial Valuation Recommended Rates for FY 2022-23				June 30, 2020 Actuarial Valuation Recommended Rates for FY 2021-22			
	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)
Safety Members								
Normal Cost[7]	13.31%	5.20%	18.51%	$27,217	12.22%	4.79%	17.01%	$25,253
UAAL	42.89%	(26.89%)	16.00%	23,526	44.86%	(24.26%)	20.60%	30,583
Total Contributions	**56.20%**	**(21.69%)**	**34.51%**	**$50,743**	**57.08%**	**(19.47%)**	**37.61%**	**$55,836**
Safety PEPRA Members								
Normal Cost	11.00%	4.34%	15.34%	$6,925	10.45%	4.12%	14.57%	$5,862
UAAL	42.89%	(26.89%)	16.00%	7,223	44.86%	(24.26%)	20.60%	8,288
Total Contributions	**53.89%**	**(22.55%)**	**31.34%**	**$14,148**	**55.31%**	**(20.14%)**	**35.17%**	**$14,150**
All Safety Members[6]								
Normal Cost	12.77%	5.00%	17.77%	$34,142	11.84%	4.65%	16.49%	$31,115
UAAL	42.89%	(26.89%)	16.00%	30,749	44.86%	(24.26%)	20.60%	38,871
Total Contributions	**55.66%**	**(21.89%)**	**33.77%**	**$64,891**	**56.70%**	**(19.61%)**	**37.09%**	**$69,986**
All Categories Combined[6]								
Normal Cost	8.97%	1.46%	10.43%	$85,250	8.42%	1.28%	9.70%	$77,923
UAAL	14.70%	(3.81%)	10.89%	89,046	15.90%	(3.38%)	12.52%	100,581
Total Contributions	**23.67%**	**(2.35%)**	**21.32%**	**$174,296**	**24.32%**	**(2.10%)**	**22.22%**	**$178,504**

1 Based on projected compensation for each year shown on next page.
2 The total General Tier 1 employer rate has been adjusted by 0.31% and 0.16% for June 30, 2021 and June 30, 2020, respectively, to account for the cost associated with the cessation of member contributions after 30 years of service.
3 Basic UAAL rates have been calculated on a combined basis for all General Tiers. COLA UAAL rates have been calculated on a combined basis for all General Tiers that have a COLA (excludes General Tier 2 without COLA and General PEPRA Tier 2 without COLA).
4 Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.
5 Includes 0.35% and 0.31% in COLA UAAL costs for June 30, 2021 and June 30, 2020, respectively, attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627.
6 These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.
7 The total Safety employer rate has been adjusted by 1.80% and 1.79% for June 30, 2021 and June 30, 2020, respectively, to account for the cost associated with the cessation of member contributions after 30 years of service.

Recommended Employer Contribution Rate (continued)

The projected compensation that is used to estimate the annual dollar amount shown on the prior pages as of June 30, 2021 and June 30, 2020 are as follows:

	June 30, 2021 Projected Compensation ($ in '000s)	June 30, 2020 Projected Compensation ($ in '000s)
General Tier 1	$2,298	$4,104
General Tier 2	202,844	206,711
General PEPRA Tier 2	95,442	82,158
General Tier 2 w/ COLA	195,444	201,979
General PEPRA Tier 2 w/ COLA	129,424	119,732
Safety	147,039	148,462
Safety PEPRA	45,145	40,235
Total	**$817,636**	**$803,381**

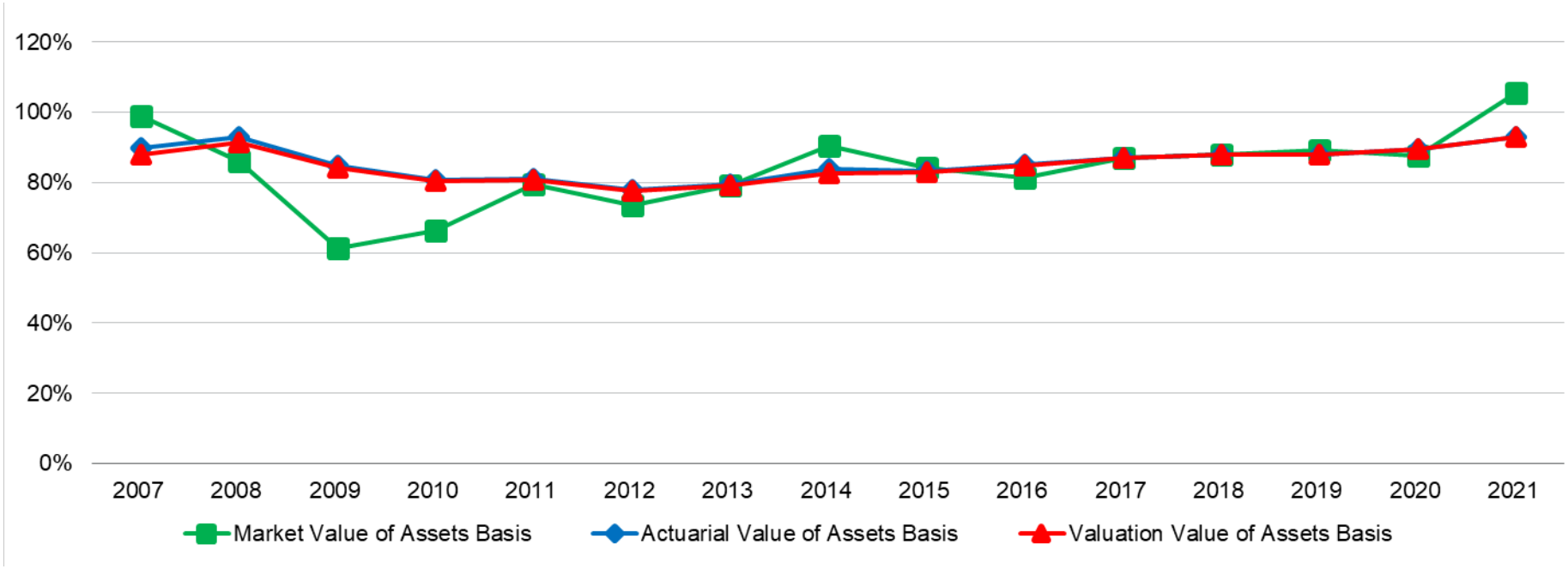
G. Funded Status

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. Higher ratios indicate a relatively well-funded plan while lower ratios may indicate recent changes to actuarial assumptions, funding of the plan below actuarial requirements, poor asset performance, or a variety of other causes.

The chart below depicts a history of the funded ratio for the plan. The chart on the next page shows the plan's schedule of funding progress for the last ten years.

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

Funded Ratio for Years Ended June 30, 2007 – 2021



Section 2: Actuarial Valuation Results

Schedule of Funding Progress for Years Ended June 30, 2012 – 2021

Actuarial Valuation Date as of June 30	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (%) (a) / (b)	Projected Covered Payroll (c)	UAAL as a Percentage of Projected Covered Payroll (%) [(b) - (a)] / (c)
2012	$3,397,360,000	$4,373,227,000	$975,867,000	77.69%	$633,848,000	153.96%
2013	3,621,709,000	4,575,063,000	953,354,000	79.16%	638,764,000	149.25%
2014	3,910,801,000	4,731,016,000	820,215,000	82.66%	648,257,000	126.53%
2015	4,302,330,000	5,178,157,000	875,827,000	83.09%	678,705,000	129.04%
2016	4,585,713,000	5,398,756,000	813,043,000	84.94%	706,000,000	115.16%
2017	4,959,070,000	5,703,396,000	744,326,000	86.95%	744,917,000	99.92%
2018	5,382,777,000	6,129,758,000	746,981,000	87.81%	760,815,000	98.18%
2019	5,664,526,000	6,439,388,000	774,862,000	87.97%	785,403,000	98.66%
2020	6,044,036,000	6,747,772,000	703,736,000	89.57%	803,381,000	87.60%
2021	6,648,154,000	7,154,885,000	506,731,000	92.92%	817,636,000	61.98%

H. Actuarial Balance Sheet

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

Second, this Actuarial Present Value of Future Benefits is compared to the assets. The "assets" for this purpose include the net amount of assets already accumulated by the plan, the present value of future member contributions, the present value of future employer Normal Cost contributions, and the present value of future employer amortization payments for the Unfunded Actuarial Accrued Liability.

Actuarial Balance Sheet

	Year Ended	
	June 30, 2021 ($ in '000s)	**June 30, 2020 ($ in '000s)**
Actuarial Present Value of Future Benefits		
• Present value of benefits for retired members and beneficiaries	$4,073,549	$3,877,577
• Present value of benefits for inactive vested members[1]	240,545	197,387
• Present value of benefits for active members	4,255,094	3,950,872
Total Actuarial Present Value of Future Benefits	**$8,569,188**	**$8,025,836**
Current and future assets		
• Total Valuation Value of Assets	$6,648,154	$6,044,036
• Present value of future contributions by members	703,203	635,136
• Present value of future employer contributions for:		
– Entry age Normal Cost	711,100	642,928
– Unfunded Actuarial Accrued Liability	506,731	703,736
Total of current and future assets	**$8,569,188**	**$8,025,836**

[1] Includes inactive members with member contributions on deposit.

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 because it is based on the current level of assets.

The current AVR is about 9.4. This means that a 1% asset gain or loss (relative to the assumed investment return) translates to about 9.4% of one year's payroll. Because actuarial gains and losses are amortized over 15 years, there would be a 0.8% 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 8.8, but is 6.4 for General compared to 16.4 for Safety. This means, for example, that assumption changes will have a greater impact on employer contribution rates for Safety than for General.

Volatility Ratios for Years Ended 2012 – 2021

Year Ended June 30	Asset Volatility Ratio			Liability Volatility Ratio		
	General	Safety	Total	General	Safety	Total
2012	3.8	8.7	5.1	5.1	12.3	6.9
2013	4.3	9.7	5.7	5.3	12.7	7.2
2014	4.9	11.5	6.6	5.4	12.9	7.3
2015	4.8	11.4	6.4	5.6	13.8	7.6
2016	4.5	11.7	6.2	5.5	14.5	7.6
2017	4.8	12.7	6.7	5.5	14.6	7.7
2018	5.1	13.6	7.1	5.9	15.2	8.1
2019	5.2	14.1	7.3	5.9	15.5	8.2
2020	5.2	14.3	7.4	6.1	15.9	8.4
2021	6.7	18.3	9.4	6.4	16.4	8.8

J. Risk Assessment

Because 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.

This report does not contain a detailed analysis of the potential range of future measurements, but does include a concise discussion of some of the primary risks that may affect the plan's future financial condition. A more detailed assessment of the risks tailored to specific interests or concerns of the Board would provide the Board with a better understanding of the inherent risks in the plan that can inform both financial preparation and future decision making. This assessment would enable us to work with the Board to highlight and illustrate particular risks or potential future outcomes they may be interested in discussing and could include scenario testing, sensitivity testing, stress testing and stochastic modeling.

This section provides descriptions and basic assessments of the primary risks that are likely to have an ongoing influence on the plan's financial health, as well as a discussion of historical trends and maturity measures:

Risk Assessments

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

  The most significant asset/liability mismatch risk to the plan is investment risk, as discussed below. In fact, investment risk has the potential to impact asset/liability mismatch in two ways. The first mismatch is evident in annual valuations: when asset values deviate from assumptions they are typically independent from liability changes. The second mismatch can be caused when systemic asset deviations from assumptions may signal the need for an assumption change, which causes liability values and contribution rates to move in the opposite direction from any change 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 40, a 1% asset gain or loss (relative to the assumed investment return) translates to about 9.4% of one-year's payroll. Because actuarial gains

and losses are amortized over 15 years, there would be a 0.8% 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 0.49% to a high of 31.33%.

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

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

- Other Risks

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

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

Evaluation of Historical Trends

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

- The funded percentage on the Valuation Value of Assets basis has increased from 77.7% to 92.9%. This is primarily due to contributions made to amortize the UAAL (i.e., amortizing each layer of UAAL over 15 years as a level percentage of pay). For a more detailed history see *Section 2, Subsection G, Funded Status* starting on page 37.
- The geometric average investment return on the Valuation Value of Assets over the last 10 years was 7.78%. This includes a high of an 11.30% return and a low of 5.61%. The average over the last 5 years was 8.12%. For more details see the Investment Return table in *Section 2, Subsection C* on page 26.
- The primary source of new UAAL was the strengthening of assumptions through multiple assumption changes. For example, the assumption changes in 2015 reduced the discount rate from 7.75% to 7.50% and updated mortality tables, adding $218 million in

unfunded liability. The assumption changes in 2018 reduced the discount rate from 7.50% to 7.25% and again updated mortality tables, adding $149 million in unfunded liability. The assumption changes in 2021 reduced the discount rate from 7.25% to 7.00% and again updated mortality tables, adding $115 million in unfunded liability. For more details on the unfunded liability changes see *Section 3, Exhibit H, Table of Amortization Bases* starting on page 66.

- The plan's funding policy effectively deals with these unfunded liabilities over time. This can be seen most clearly in *Section 3, Exhibit I, Projection of UAAL Balances and Payments* provided on pages 70 and 71.

Maturity Measures

In the last 10 years the ratio of members in pay status to active participants has increased from 0.71 to 0.91. 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 16.

As pension plans mature, the cash needed to fulfill benefit obligations will increase over time. Therefore, cash flow projections and analysis should be performed to assure that the plan's asset allocation is aligned to meet emerging pension liabilities. For the prior year, benefits paid were $75 million more than contributions received. 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. However, this plan currently has relatively low levels of negative cash flows and is relatively well funded (at a 92.9% funded ratio). For more details on historical cash flows see the Comparison of Contributions with Benefits in *Section 2, Subsection B, Financial Information* on page 20.

A further discussion of plan maturity measures and how they relate to changes in assets and liabilities is included in *Section 2, Subsection I, Volatility Ratios* on page 40.

Section 3: Supplemental Information

Exhibit A: Table of Plan Coverage

Total Plan

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	8,491	8,644	-1.8%
• Average age	45.0	44.9	0.1
• Average years of service	11.6	11.4	0.2
• Total projected compensation[1]	$817,636,092	$803,381,542	1.8%
• Average projected compensation	$96,294	$92,941	3.6%
• Account balances	$747,482,791	$732,382,661	2.1%
• Total active vested members	5,962	5,905	1.0%
Inactive vested members:[2]			
• Number	3,491	3,218	8.5%
• Average age	46.1	46.1	0.0
Retired members:			
• Number in pay status	5,830	5,639	3.4%
• Average age	71.0	70.8	0.2
• Average monthly benefit	$3,684	$3,597	2.4%
Disabled members:			
• Number in pay status	811	812	-0.1%
• Average age	67.1	66.8	0.3
• Average monthly benefit[3]	$4,156	$4,023	3.3%
Beneficiaries:			
• Number in pay status	1,110	1,070	3.7%
• Average age	73.2	73.0	0.2
• Average monthly benefit	$2,139	$2,049	4.4%

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

General Tier 1

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	11	20	-45.0%
• Average age	66.2	64.7	1.5
• Average years of service	34.1	33.3	0.8
• Total projected compensation[1]	$2,298,244	$4,103,853	-44.0%
• Average projected compensation	$208,931	$205,193	1.8%
• Account balances	$3,781,957	$6,708,984	-43.6%
• Total active vested members	11	20	-45.0%
Inactive vested members:[2]			
• Number	36	36	0.0%
• Average age	47.8	46.8	1.0
Retired members:			
• Number in pay status	1,174	1,232	-4.7%
• Average age	78.1	77.6	0.5
• Average monthly benefit[3]	$4,723	$4,507	4.8%
Disabled members:			
• Number in pay status	73	81	-9.9%
• Average age	75.2	75.2	0.0
• Average monthly benefit[3]	$3,071	$2,927	4.9%
Beneficiaries:			
• Number in pay status	328	333	-1.5%
• Average age	80.0	80.1	-0.1
• Average monthly benefit[3]	$2,201	$2,042	7.8%

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

General Tier 2

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	1,522	1,631	-6.7%
• Average age	51.5	51.3	0.2
• Average years of service	17.6	17.1	0.5
• Total projected compensation[1]	$202,843,805	$206,711,701	-1.9%
• Average projected compensation	$133,275	$126,739	5.2%
• Account balances	$188,993,723	$192,421,396	-1.8%
• Total active vested members	1,493	1,602	-6.8%
Inactive vested members:[2]			
• Number	876	879	-0.3%
• Average age	52.4	51.9	0.5
Retired members:			
• Number in pay status	2,062	1,968	4.8%
• Average age	70.3	70.0	0.3
• Average monthly benefit[3]	$2,340	$2,210	5.9%
Disabled members:			
• Number in pay status	229	233	-1.7%
• Average age	68.2	67.6	0.6
• Average monthly benefit[3]	$1,587	$1,560	1.7%
Beneficiaries:			
• Number in pay status	308	296	4.1%
• Average age	72.8	72.3	0.5
• Average monthly benefit[3]	$1,019	$961	6.0%

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

General Tier 2 w/ COLA

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	2,225	2,414	-7.8%
• Average age	50.5	50.0	0.5
• Average years of service	16.6	15.9	0.7
• Total projected compensation[1]	$195,444,069	$201,978,770	-3.2%
• Average projected compensation	$87,840	$83,670	5.0%
• Account balances	$232,476,439	$233,816,981	-0.6%
• Total active vested members	2,179	2,357	-7.6%
Inactive vested members:[2]			
• Number	1,055	1,048	0.7%
• Average age	48.6	47.8	0.8
Retired members:			
• Number in pay status	1,654	1,551	6.6%
• Average age	68.9	68.5	0.4
• Average monthly benefit[3]	$1,986	$1,934	2.7%
Disabled members:			
• Number in pay status	94	89	5.6%
• Average age	64.2	63.9	0.3
• Average monthly benefit[3]	$1,616	$1,592	1.5%
Beneficiaries:			
• Number in pay status	139	121	14.9%
• Average age	68.5	67.4	1.1
• Average monthly benefit[3]	$1,105	$1,038	6.5%

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

General PEPRA Tier 1

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	0	0	N/A
• Average age	N/A	N/A	N/A
• Average years of service	N/A	N/A	N/A
• Total projected compensation[1]	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	0	0	N/A
Inactive vested members:[2]			
• Number	2	3	-33.3%
• Average age	46.0	43.7	2.3
Retired members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A
Disabled members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

General PEPRA Tier 2

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	1,081	975	10.9%
• Average age	41.4	41.4	0.0
• Average years of service	3.6	3.2	0.4
• Total projected compensation[1]	$95,441,725	$82,157,943	16.2%
• Average projected compensation	$88,290	$84,265	4.8%
• Account balances	$22,798,409	$17,621,507	29.4%
• Total active vested members	330	225	46.7%
Inactive vested members:[2]			
• Number	375	294	27.6%
• Average age	41.6	41.1	0.5
Retired members:			
• Number in pay status	13	8	62.5%
• Average age	68.7	68.8	-0.1
• Average monthly benefit[3]	$877	$837	4.7%
Disabled members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

General PEPRA Tier 2 w/COLA

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	2,128	2,050	3.8%
• Average age	39.0	38.3	0.7
• Average years of service	3.8	3.4	0.4
• Total projected compensation[1]	$129,424,074	$119,732,475	8.1%
• Average projected compensation	$60,820	$58,406	4.1%
• Account balances	$43,725,592	$35,819,884	22.1%
• Total active vested members	750	503	49.1%
Inactive vested members:[2]			
• Number	762	593	28.5%
• Average age	39.6	39.4	0.2
Retired members:			
• Number in pay status	20	10	100.0%
• Average age	66.8	67.4	-0.6
• Average monthly benefit[3]	$634	$585	8.4%
Disabled members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

Safety

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	1,030	1,089	-5.4%
• Average age	45.7	45.2	0.5
• Average years of service	19.3	18.8	0.5
• Total projected compensation[1]	$147,039,021	$148,461,597	-1.0%
• Average projected compensation	$142,756	$136,328	4.7%
• Account balances	$233,529,852	$229,011,977	2.0%
• Total active vested members	1,024	1,083	-5.4%
Inactive vested members:[2]			
• Number	286	289	-1.0%
• Average age	45.4	44.7	0.7
Retired members:			
• Number in pay status	904	870	3.9%
• Average age	67.3	67.2	0.1
• Average monthly benefit[3]	$8,623	$8,472	1.8%
Disabled members:			
• Number in pay status	415	409	1.5%
• Average age	65.7	65.2	0.5
• Average monthly benefit[3]	$6,340	$6,172	2.7%
Beneficiaries:			
• Number in pay status	335	320	4.7%
• Average age	68.8	68.5	0.3
• Average monthly benefit[3]	$3,538	$3,444	2.7%

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit A: Table of Plan Coverage (continued)

Safety PEPRA

Category	Year Ended June 30 2021	Year Ended June 30 2020	Change From Prior Year
Active members in valuation:			
• Number	494	465	6.2%
• Average age	32.1	31.5	0.6
• Average years of service	4.0	3.4	0.6
• Total projected compensation[1]	$45,145,154	$40,235,204	12.2%
• Average projected compensation	$91,387	$86,527	5.6%
• Account balances	$22,176,819	$16,981,932	30.6%
• Total active vested members	175	115	52.2%
Inactive vested members:[2]			
• Number	99	76	30.3%
• Average age	32.4	31.9	0.5
Retired members:			
• Number in pay status	3	0	N/A
• Average age	60.3	N/A	N/A
• Average monthly benefit[3]	$1,341	N/A	N/A
Disabled members:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A
Beneficiaries:			
• Number in pay status	0	0	N/A
• Average age	N/A	N/A	N/A
• Average monthly benefit[3]	N/A	N/A	N/A

[1] Calculated by increasing annualized bi-weekly compensation as of valuation date by one-half year of inflation and "across the board" salary increases.
[2] Includes inactive members with member contributions on deposit.
[3] Excludes vested fixed supplemental benefit amount.

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation

Total Plan

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	115	115	—	—	—	—	—	—	—	—
	$53,904	$53,904	—	—	—	—	—	—	—	—
25 – 29	659	571	88	—	—	—	—	—	—	—
	$65,822	$63,718	$79,478	—	—	—	—	—	—	—
30 – 34	1,139	622	431	85	1	—	—	—	—	—
	$78,757	$70,657	$84,608	$108,334	$81,832	—	—	—	—	—
35 – 39	1,269	436	430	323	79	1	—	—	—	—
	$90,661	$74,394	$91,249	$107,581	$107,996	$94,667	—	—	—	—
40 – 44	1,128	253	266	277	233	98	1	—	—	—
	$101,381	$78,026	$92,658	$112,535	$115,974	$118,497	$163,330	—	—	—
45 – 49	1,133	215	189	208	220	236	62	3	—	—
	$107,267	$80,938	$90,162	$111,426	$113,336	$125,466	$145,240	$121,910	—	—
50 – 54	1,201	200	159	184	200	212	168	76	2	—
	$112,694	$82,800	$94,765	$107,963	$115,762	$125,576	$134,201	$146,435	$201,502	—
55 – 59	960	134	124	155	179	147	101	98	20	2
	$106,610	$83,537	$94,589	$103,286	$107,885	$120,221	$121,969	$118,354	$115,009	$105,952
60 – 64	665	95	112	115	106	79	54	51	41	12
	$101,497	$85,524	$91,315	$101,019	$102,886	$104,448	$108,878	$119,024	$121,881	$118,531
65 – 69	172	31	31	37	16	25	16	9	4	3
	$100,875	$86,213	$90,808	$102,938	$94,518	$106,602	$113,384	$139,708	$80,494	$161,095
70 & over	50	4	11	14	9	5	3	1	2	1
	$97,582	$78,683	$85,282	$93,835	$110,059	$123,425	$140,793	$90,263	$63,772	$64,722
Total	**8,491**	**2,676**	**1,841**	**1,398**	**1,043**	**803**	**405**	**238**	**69**	**18**
	$96,294	**$72,860**	**$89,713**	**$107,954**	**$111,641**	**$120,978**	**$128,762**	**$128,199**	**$118,113**	**$121,238**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

General Tier 1

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 – 29	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
30 – 34	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
35 – 39	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
40 – 44	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
45 – 49	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
50 – 54	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
55 – 59	2	—	—	—	—	—	2	—	—	—
	$352,376	—	—	—	—	—	$352,376	—	—	—
60 – 64	4	—	—	—	1	1	—	—	—	2
	$192,133	—	—	—	$283,349	$258,685	—	—	—	$113,248
65 – 69	3	—	—	—	—	—	—	1	—	2
	$176,052	—	—	—	—	—	—	$248,923	—	$139,616
70 & over	2	—	—	—	—	1	—	—	—	1
	$148,403	—	—	—	—	$232,084	—	—	—	$64,722
Total	**11**	—	—	—	**1**	**2**	**2**	**1**	—	**5**
	$208,931	—	—	—	**$283,349**	**$245,385**	**$352,376**	**$248,923**	—	**$114,090**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

General Tier 2

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 – 29	1	—	1	—	—	—	—	—	—	—
	$99,372	—	$99,372	—	—	—	—	—	—	—
30 – 34	39	5	24	10	—	—	—	—	—	—
	$114,842	$119,232	$114,951	$112,384	—	—	—	—	—	—
35 – 39	132	8	42	69	13	—	—	—	—	—
	$123,139	$120,707	$141,272	$114,902	$109,772	—	—	—	—	—
40 – 44	200	11	37	81	54	17	—	—	—	—
	$130,409	$124,672	$131,192	$133,979	$132,621	$108,378	—	—	—	—
45 – 49	264	13	28	70	80	61	10	2	—	—
	$131,213	$142,023	$125,164	$134,149	$131,159	$127,693	$139,423	$111,328	—	—
50 – 54	330	14	31	74	83	72	44	12	—	—
	$137,345	$160,706	$132,833	$132,495	$140,720	$134,811	$140,508	$131,914	—	—
55 – 59	286	6	25	62	67	48	35	29	12	2
	$138,331	$141,070	$143,441	$129,441	$140,195	$151,052	$148,332	$123,136	$123,903	$105,952
60 – 64	208	11	17	42	38	30	27	22	16	5
	$135,046	$150,032	$129,168	$125,941	$132,622	$121,650	$133,933	$156,087	$157,007	$140,506
65 – 69	52	1	4	20	4	11	7	3	1	1
	$132,580	$276,519	$114,211	$120,560	$136,458	$139,091	$136,465	$141,891	$88,768	$204,052
70 & over	10	1	1	3	3	—	2	—	—	—
	$141,898	$165,539	$181,950	$129,430	$144,169	—	$125,345	—	—	—
Total	**1,522**	**70**	**210**	**431**	**342**	**239**	**125**	**68**	**29**	**8**
	$133,275	**$142,403**	**$131,851**	**$128,106**	**$135,006**	**$132,921**	**$140,723**	**$135,826**	**$140,956**	**$139,811**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

General Tier 2 w/COLA

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 – 29	2	2	—	—	—	—	—	—	—	—
	$60,562	$60,562	—	—	—	—	—	—	—	—
30 – 34	81	4	45	32	—	—	—	—	—	—
	$80,189	$96,686	$81,044	$76,924	—	—	—	—	—	—
35 – 39	276	12	86	146	32	—	—	—	—	—
	$89,655	$101,479	$93,003	$88,349	$82,180	—	—	—	—	—
40 – 44	341	13	56	144	94	34	—	—	—	—
	$91,284	$86,325	$89,416	$91,920	$92,761	$89,481	—	—	—	—
45 – 49	350	17	44	107	93	75	14	—	—	—
	$89,026	$70,347	$92,716	$89,984	$89,736	$89,339	$86,401	—	—	—
50 – 54	369	10	34	100	90	69	46	20	—	—
	$88,659	$71,015	$87,346	$86,442	$87,778	$93,678	$91,679	$90,500	—	—
55 – 59	415	13	32	91	102	78	50	43	6	—
	$85,517	$68,122	$84,408	$85,451	$82,748	$91,626	$85,234	$87,926	$82,855	—
60 – 64	298	2	32	71	66	45	27	28	23	4
	$85,918	$99,783	$85,609	$84,411	$83,191	$87,976	$83,823	$88,739	$94,469	$75,290
65 – 69	67	—	8	17	12	14	9	4	3	—
	$85,442	—	$88,603	$82,206	$80,538	$81,075	$95,432	$106,168	$77,736	—
70 & over	26	—	2	11	6	4	—	1	2	—
	$87,041	—	$88,391	$84,127	$93,004	$96,260	—	$90,263	$63,772	—
Total	**2,225**	**73**	**339**	**719**	**495**	**319**	**146**	**96**	**34**	**4**
	$87,840	**$79,987**	**$88,578**	**$87,568**	**$86,970**	**$90,384**	**$87,744**	**$89,484**	**$89,138**	**$75,290**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

General PEPRA Tier 2

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	22	22	—	—	—	—	—	—	—	—
	$63,264	$63,264	—	—	—	—	—	—	—	—
25 – 29	139	130	9	—	—	—	—	—	—	—
	$72,795	$73,228	$66,550	—	—	—	—	—	—	—
30 – 34	222	170	52	—	—	—	—	—	—	—
	$82,279	$80,317	$88,693	—	—	—	—	—	—	—
35 – 39	193	130	63	—	—	—	—	—	—	—
	$88,230	$86,819	$91,140	—	—	—	—	—	—	—
40 – 44	137	93	43	1	—	—	—	—	—	—
	$91,938	$90,317	$94,604	$128,059	—	—	—	—	—	—
45 – 49	100	58	42	—	—	—	—	—	—	—
	$94,652	$95,448	$93,554	—	—	—	—	—	—	—
50 – 54	107	68	39	—	—	—	—	—	—	—
	$96,651	$98,560	$93,321	—	—	—	—	—	—	—
55 – 59	79	54	25	—	—	—	—	—	—	—
	$100,896	$101,623	$99,325	—	—	—	—	—	—	—
60 – 64	57	31	26	—	—	—	—	—	—	—
	$99,509	$101,398	$97,258	—	—	—	—	—	—	—
65 – 69	21	13	8	—	—	—	—	—	—	—
	$107,824	$106,681	$109,682	—	—	—	—	—	—	—
70 & over	4	—	4	—	—	—	—	—	—	—
	$81,905	—	$81,905	—	—	—	—	—	—	—
Total	**1,081**	**769**	**311**	**1**	—	—	—	—	—	—
	$88,290	**$86,485**	**$92,625**	**$128,059**	—	—	—	—	—	—

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

General PEPRA Tier 2 w/COLA

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	61	61	—	—	—	—	—	—	—	—
	$42,592	$42,592	—	—	—	—	—	—	—	—
25 – 29	352	309	43	—	—	—	—	—	—	—
	$53,276	$52,500	$58,848	—	—	—	—	—	—	—
30 – 34	530	332	198	—	—	—	—	—	—	—
	$61,006	$59,187	$64,054	—	—	—	—	—	—	—
35 – 39	417	240	177	—	—	—	—	—	—	—
	$64,921	$61,525	$69,525	—	—	—	—	—	—	—
40 – 44	224	119	105	—	—	—	—	—	—	—
	$64,676	$58,637	$71,520	—	—	—	—	—	—	—
45 – 49	178	112	66	—	—	—	—	—	—	—
	$62,922	$62,011	$64,470	—	—	—	—	—	—	—
50 – 54	148	99	49	—	—	—	—	—	—	—
	$62,662	$58,648	$70,772	—	—	—	—	—	—	—
55 – 59	99	59	40	—	—	—	—	—	—	—
	$62,690	$59,842	$66,891	—	—	—	—	—	—	—
60 – 64	84	49	35	—	—	—	—	—	—	—
	$63,309	$58,244	$70,401	—	—	—	—	—	—	—
65 – 69	28	17	11	—	—	—	—	—	—	—
	$63,614	$59,368	$70,176	—	—	—	—	—	—	—
70 & over	7	3	4	—	—	—	—	—	—	—
	$57,278	$49,730	$62,938	—	—	—	—	—	—	—
Total	**2,128**	**1,400**	**728**	—	—	—	—	—	—	—
	$60,820	**$57,507**	**$67,191**	—	—	—	—	—	—	—

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Safety

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
25 – 29	1	—	1	—	—	—	—	—	—	—
	$159,306	—	$159,306	—	—	—	—	—	—	—
30 – 34	83	4	36	42	1	—	—	—	—	—
	$129,018	$99,040	$131,073	$131,236	$81,832	—	—	—	—	—
35 – 39	176	5	28	108	34	1	—	—	—	—
	$129,011	$130,615	$127,205	$128,903	$131,614	$94,667	—	—	—	—
40 – 44	209	7	18	51	85	47	1	—	—	—
	$135,885	$137,263	$136,197	$136,379	$131,070	$143,148	$163,330	—	—	—
45 – 49	232	8	7	31	47	100	38	1	—	—
	$147,477	$150,709	$155,862	$134,127	$129,698	$151,201	$168,448	$143,076	—	—
50 – 54	238	2	4	10	27	71	78	44	2	—
	$154,048	$139,439	$164,578	$141,642	$132,317	$147,210	$155,720	$175,821	$201,502	—
55 – 59	77	1	1	2	10	21	14	26	2	—
	$157,309	$290,000	$137,666	$103,966	$147,801	$155,966	$154,337	$163,344	$158,102	—
60 – 64	12	2	—	2	1	3	—	1	2	1
	$145,393	$138,797	—	$167,224	$92,360	$128,101	—	$151,603	$156,106	$192,190
65 – 69	1	—	—	—	—	—	—	1	—	—
	$158,102	—	—	—	—	—	—	$158,102	—	—
70 & over	1	—	—	—	—	—	1	—	—	—
	$171,689	—	—	—	—	—	$171,689	—	—	—
Total	**1,030**	**29**	**95**	**246**	**205**	**243**	**132**	**73**	**6**	**1**
	$142,756	**$140,077**	**$134,508**	**$132,136**	**$131,397**	**$148,371**	**$159,416**	**$170,354**	**$171,903**	**$192,190**

Exhibit B: Members in Active Service as of June 30, 2021 by Age, Years of Service, and Average Projected Compensation (continued)

Safety PEPRA

		Years of Service								
Age	**Total**	**0 – 4**	**5 – 9**	**10 – 14**	**15 – 19**	**20 – 24**	**25 – 29**	**30 – 34**	**35 – 39**	**40 & over**
Under 25	32	32	—	—	—	—	—	—	—	—
	$69,034	$69,034	—	—	—	—	—	—	—	—
25 – 29	164	130	34	—	—	—	—	—	—	—
	$86,131	$80,920	$106,057	—	—	—	—	—	—	—
30 – 34	184	107	76	1	—	—	—	—	—	—
	$94,691	$86,591	$105,879	$111,085	—	—	—	—	—	—
35 – 39	75	41	34	—	—	—	—	—	—	—
	$96,572	$86,509	$108,706	—	—	—	—	—	—	—
40 – 44	17	10	7	—	—	—	—	—	—	—
	$97,965	$90,889	$108,073	—	—	—	—	—	—	—
45 – 49	9	7	2	—	—	—	—	—	—	—
	$94,853	$96,076	$90,575	—	—	—	—	—	—	—
50 – 54	9	7	2	—	—	—	—	—	—	—
	$114,130	$116,109	$107,204	—	—	—	—	—	—	—
55 – 59	2	1	1	—	—	—	—	—	—	—
	$149,587	$153,671	$145,503	—	—	—	—	—	—	—
60 – 64	2	—	2	—	—	—	—	—	—	—
	$149,587	—	$149,587	—	—	—	—	—	—	—
65 – 69	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
70 & over	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—
Total	**494**	**335**	**158**	**1**	**—**	**—**	**—**	**—**	**—**	**—**
	$91,387	**$83,846**	**$107,250**	**$111,085**	**—**	**—**	**—**	**—**	**—**	**—**

Exhibit C: Reconciliation of Member Data

	Active Members	Inactive Vested Members[1]	Retired Members	Disabled Members	Beneficiaries	Total
Number as of June 30, 2020	**8,644**	**3,218**	**5,639**	**812**	**1,070**	**19,383**
• New members	548	89	0	0	102	739
• Terminations – with vested rights	(367)	367	0	0	0	0
• Contribution refunds	(101)	(42)	0	0	0	(143)
• Retirements	(264)	(82)	346	0	0	0
• New disabilities	(10)	(5)	(6)	21	0	0
• Return to work	50	(49)	(1)	0	0	0
• Died with or without beneficiary	(9)	(3)	(149)	(22)	(63)	(246)
• Data adjustments	0	(2)	1	0	1	0
Number as of June 30, 2021	**8,491**	**3,491**	**5,830**	**811**	**1,110**	**19,733**

[1] Includes inactive members with member contributions on deposit.

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

	Year Ended June 30, 2021		Year Ended June 30, 2020	
Net assets at market value at the beginning of the year		**$5,914,852,070**		**$5,735,360,159**
Contribution income:				
• Employer contributions	$178,662,058		$214,587,909	
• Member contributions	79,620,088		79,242,637	
Net contribution income		$258,282,146		$293,830,545
Investment income:				
• Interest, dividends, asset appreciation and other income	$1,877,496,542		$234,236,162	
• Less investment and administrative fees	(33,062,291)		(30,368,128)	
• Less other expenses	(3,049,909)		(2,582,517)	
Net investment income		$1,841,384,342		$201,285,517
Total income available for benefits		**$2,099,666,488**		**$495,116,062**
Less benefit payments:				
• Benefits paid	$(327,719,841)		$(310,133,402)	
• Member refunds	(5,245,420)		(5,490,749)	
Net benefit payments		$(332,965,261)		$(315,624,151)
Change in net assets at market value		**$1,766,701,227**		**$179,491,911**
Net assets at market value at the end of the year		**$7,681,553,297**		**$5,914,852,070**

Note: Results may not total due to rounding.

Exhibit E: Summary Statement of Plan Assets

	June 30, 2021		June 30, 2020	
Cash equivalents		$275,852,907		$166,625,397
Cash collateral on loaned securities		122,750,670		34,829,944
Capital assets, net of accumulated depreciation and amortization		9,524,745		11,094,788
Accounts receivable:				
• Member and employer contributions	$12,891,154		$13,756,382	
• Accrued interest and dividends	3,743,128		4,148,771	
• Securities sold	27,566,501		18,845,677	
• All other	61,320		33,753	
Total accounts receivable		$44,262,103		$36,784,583
Investments:				
• Equities	$5,202,179,654		$3,711,280,380	
• Fixed income	1,215,259,665		1,146,517,652	
• Others	972,759,115		877,009,093	
Total investments at market value		$7,390,198,434		$5,734,807,125
Total assets		$7,842,588,859		$5,984,141,837
Liabilities:				
• Collateral held for loaned securities	$(122,750,670)		$(34,829,944)	
• Security purchases	(31,592,828)		(28,729,922)	
• Account payable	(6,661,322)		(5,697,555)	
• Prepaid contributions	(30,742)		(32,346)	
Total liabilities		$(161,035,562)		$(69,289,767)
Net assets at market value		**$7,681,553,297**		**$5,914,852,070**
Net assets at actuarial value		**$6,648,217,998**		**$6,044,101,781**
Net assets at valuation value		**$6,648,153,534**		**$6,044,035,808**

Note: Results may not total due to rounding.

Exhibit F: Summary of Reported Reserve Information

	June 30, 2021	June 30, 2020
Used in Development of Valuation Value of Assets:		
• Member contributions reserve	$859,467,644	$825,923,366
• Employer advance reserve	3,667,987,074	3,377,093,757
• Offset: Interest crediting shortfall tracking account	(1,326,329,846)	(1,447,595,207)
• Retiree reserve	3,280,460,923	3,123,805,473
• Supplemental death benefit reserve	17,393,382	16,914,472
• Vested fixed supplemental ($108.44) reserve	149,174,357	147,893,947
• Undistributed earnings	0	0
Subtotal: Valuation Value of Assets	$6,648,153,534	$6,044,035,808
Not Used in Development of Valuation Value of Assets:		
• Non-vested supplemental ($27.50) reserve	$64,464	$65,973
• Contingency reserve	0	0
Subtotal	$64,464	$65,973
Subtotal: Actuarial Value of Assets	$6,648,217,998	$6,044,101,781
• Market stabilization reserve	1,033,335,299	(129,249,711)
Total: Gross Market Value of Assets	**$7,681,553,297**	**$5,914,852,070**

Note: Results may not total due to rounding.

Exhibit G: Development of the Fund through June 30, 2021

Year Ended June 30	Employer Contributions	Member Contributions	Net Investment Return[1]	Benefit Payments	Market Value of Assets at Year-End	Valuation Value of Assets at Year-End	Valuation Value as a Percent of Market Value
2012	$140,772,726	$44,486,749	$47,147,363	$195,114,694	$3,209,617,207	$3,397,359,919	105.85%
2013	150,687,842	44,463,983	432,694,392	209,957,957	3,627,505,467	3,621,708,536	99.84%
2014	169,703,083	46,674,443	654,535,161	223,532,290	4,274,885,864	3,910,800,797	91.48%
2015	175,099,550	63,678,770	84,826,217	233,695,213	4,364,795,188	4,302,330,424	98.57%
2016	177,709,688	69,469,771	21,265,100	246,403,038	4,386,836,709	4,585,712,958	104.53%
2017	190,759,001	72,394,542	575,001,597	260,745,073	4,964,246,776	4,959,070,151	99.90%
2018	197,682,857	74,044,246	438,207,040	277,718,396	5,396,462,523	5,382,777,075	99.75%
2019	199,932,498	75,157,256	360,926,420	297,118,538	5,735,360,159	5,664,526,062	98.76%
2020	214,587,909	79,242,637	201,285,517	315,624,151	5,914,852,070	6,044,035,808	102.18%
2021	178,662,058	79,620,088	1,841,384,342	332,965,261	7,681,553,297	6,648,153,534	86.55%

Note: Results may not total due to rounding.

[1] On a market basis, net of investment fees, administrative expenses and other expenses.

Exhibit H: Table of Amortization Bases

General Tier 1

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment ($ in '000s)
Actuarial loss	June 30, 2006	$7,048	15	$807	3[1]	$290
Assumption change	June 30, 2006	41,538	15	4,751	3[1]	1,706
Actuarial gain	June 30, 2007	(19,901)	15	(4,289)	3[1]	(1,540)
Actuarial gain	June 30, 2008	(18,128)	15	(5,524)	3[1]	(1,983)
Actuarial loss	June 30, 2009	55,190	15	21,145	3	7,591
Assumption change	June 30, 2009	18,574	15	7,113	3	2,554
Actuarial loss	June 30, 2010	50,018	15	24,076	4	6,605
Actuarial loss	June 30, 2011	36,225	15	20,553	5	4,595
Actuarial loss	June 30, 2012	29,865	15	19,166	6	3,637
Demographic assumption change	June 30, 2012	38,104	20	33,473	11[1]	3,791
Economic assumption change	June 30, 2012	19,517	20	17,133	11[1]	1,941
Actuarial loss	June 30, 2013	31,670	15	22,411	7	3,712
Actuarial loss	June 30, 2014	16,119	15	12,715	11	1,440
Actuarial loss	June 30, 2015	8,457	15	6,995	11	792
Assumption change	June 30, 2015	47,959	20	45,350	14	4,254
Actuarial loss	June 30, 2016	45,451	15	38,991	10	4,772
Actuarial loss	June 30, 2017	53,640	15	48,056	11	5,443
Actuarial loss	June 30, 2018	51,584	15	47,847	12	5,056
Assumption change	June 30, 2018	3,972	20	3,907	17	318
Actuarial loss	June 30, 2019	80,777	15	77,260	13	7,670
Actuarial loss	June 30, 2020	71,845	15	70,440	14	6,607
Actuarial loss	June 30, 2021	51,026	15	51,026	15	4,545
Assumption change	June 30, 2021	(170)	20	(170)	20	(12)
Subtotal				**$563,232**		**$73,784**

[1] Reflects the adjustment to UAAL amortization periods made in 2020.

Exhibit H: Table of Amortization Bases (continued)

General Tier 2

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment ($ in '000s)
Actuarial gain	June 30, 2006	$(9,108)	15	$(1,043)	3[1]	$(374)
Assumption change	June 30, 2006	19,085	15	2,183	3[1]	784
Plan provision change	June 30, 2006	14,731	15	1,683	3[1]	604
Actuarial gain	June 30, 2007	(39,508)	15	(8,514)	3[1]	(3,057)
Actuarial gain	June 30, 2008	(34,794)	15	(10,600)	3[1]	(3,805)
Actuarial loss	June 30, 2009	71,253	15	27,292	3	9,798
Assumption change	June 30, 2009	22,696	15	8,690	3	3,120
Actuarial loss	June 30, 2010	47,615	15	22,926	4	6,289
Actuarial gain	June 30, 2011	(6,949)	15	(3,949)	5	(883)
Actuarial gain	June 30, 2012	(18,106)	15	(11,621)	6	(2,205)
Demographic assumption change	June 30, 2012	29,420	20	25,822	11[1]	2,925
Economic assumption change	June 30, 2012	32,874	20	28,892	11[1]	3,272
Actuarial gain	June 30, 2013	(23,823)	15	(16,875)	7	(2,795)
Actuarial gain	June 30, 2014	(49,125)	15	(38,738)	11	(4,388)
Actuarial gain	June 30, 2015	(62,406)	15	(51,699)	11	(5,856)
Assumption change	June 30, 2015	50,090	20	47,374	14	4,444
Actuarial gain	June 30, 2016	(28,842)	15	(24,746)	10	(3,029)
Actuarial gain	June 30, 2017	(41,622)	15	(37,290)	11	(4,224)
Actuarial gain	June 30, 2018	(86,831)	15	(80,563)	12	(8,513)
Assumption change	June 30, 2018	111,232	20	109,447	17	8,902
Actuarial gain	June 30, 2019	(8,940)	15	(8,553)	13	(849)
Actuarial gain	June 30, 2020	(62,406)	15	(61,189)	14	(5,740)
Actuarial gain	June 30, 2021	(184,009)	15	(184,009)	15	(16,391)
Assumption change	June 30, 2021	89,334	20	89,334	20	6,496
Subtotal				**$(175,746)**		**$(15,475)**

[1] Reflects the adjustment to UAAL amortization periods made in 2020.

Exhibit H: Table of Amortization Bases (continued)

Safety

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment ($ in '000s)
Actuarial loss	June 30, 2006	$3,418	15	$391	3[1]	$140
Assumption change	June 30, 2006	42,167	15	4,823	3[1]	1,732
Actuarial gain	June 30, 2007	(37,489)	15	(8,078)	3[1]	(2,900)
Actuarial gain	June 30, 2008	(22,443)	15	(6,837)	3[1]	(2,455)
Actuarial loss	June 30, 2009	78,157	15	29,941	3	10,749
Assumption change	June 30, 2009	49,982	15	19,149	3	6,875
Actuarial loss	June 30, 2010	108,448	15	52,221	4	14,325
Actuarial loss	June 30, 2011	8,879	15	5,043	5	1,127
Actuarial gain	June 30, 2012	(7,501)	15	(4,805)	6	(912)
Demographic assumption change	June 30, 2012	55,513	20	48,766	11	5,523
Economic assumption change	June 30, 2012	51,887	20	45,551	11	5,159
Actuarial loss	June 30, 2013	7,588	15	5,380	7	891
Actuarial gain	June 30, 2014	(54,478)	15	(42,964)	11[1]	(4,866)
Actuarial gain	June 30, 2015	(55,657)	15	(46,116)	11[1]	(5,223)
Assumption change	June 30, 2015	119,953	20	113,436	14	10,640
Actuarial gain	June 30, 2016	(17,062)	15	(14,640)	10	(1,792)
Actuarial gain	June 30, 2017	(9,288)	15	(8,316)	11	(942)
Actuarial gain	June 30, 2018	(29,088)	15	(26,984)	12	(2,851)
Assumption change	June 30, 2018	33,306	20	32,769	17	2,665
Actuarial loss	June 30, 2019	48,977	15	46,851	13	4,651
Actuarial gain	June 30, 2020	(26,527)	15	(26,013)	14	(2,440)
Actuarial gain	June 30, 2021	(125,962)	15	(125,962)	15	(11,220)
Assumption change	June 30, 2021	25,639	20	25,639	20	1,864
Subtotal				**$119,245**		**$30,740**

[1] Reflects the adjustment to UAAL amortization periods made in 2020.

Exhibit H: Table of Amortization Bases (continued)

Total VCERA

Type	Date Established	Initial Amount ($ in '000s)	Initial Period	Outstanding Balance ($ in '000s)	Years Remaining	Annual Payment ($ in '000s)
Actuarial loss	June 30, 2006	$1,358	15	$155	3[1]	$56
Assumption change	June 30, 2006	102,790	15	11,757	3[1]	4,222
Plan provision change	June 30, 2006	14,731	15	1,683	3[1]	604
Actuarial gain	June 30, 2007	(96,898)	15	(20,881)	3[1]	(7,497)
Actuarial gain	June 30, 2008	(75,365)	15	(22,961)	3[1]	(8,243)
Actuarial loss	June 30, 2009	204,600	15	78,378	3	28,138
Assumption change	June 30, 2009	91,252	15	34,952	3	12,549
Actuarial loss	June 30, 2010	206,081	15	99,223	4	27,219
Actuarial loss	June 30, 2011	38,155	15	21,647	5	4,839
Actuarial loss	June 30, 2012	4,258	15	2,740	6	520
Demographic assumption change	June 30, 2012	123,037	20	108,061	11	12,239
Economic assumption change	June 30, 2012	104,278	20	91,576	11	10,372
Actuarial loss	June 30, 2013	15,435	15	10,916	7	1,808
Actuarial gain	June 30, 2014	(87,484)	15	(68,987)	11[1]	(7,814)
Actuarial gain	June 30, 2015	(109,606)	15	(90,820)	11[1]	(10,287)
Assumption change	June 30, 2015	218,002	20	206,160	14	19,338
Actuarial gain	June 30, 2016	(453)	15	(395)	10	(49)
Actuarial loss	June 30, 2017	2,730	15	2,450	11	277
Actuarial gain	June 30, 2018	(64,335)	15	(59,700)	12	(6,308)
Assumption change	June 30, 2018	148,510	20	146,123	17	11,885
Actuarial loss	June 30, 2019	120,814	15	115,558	13	11,472
Actuarial gain	June 30, 2020	(17,088)	15	(16,762)	14	(1,573)
Actuarial gain	June 30, 2021	(258,945)	15	(258,945)	15	(23,066)
Assumption change	June 30, 2021	114,803	20	114,803	20	8,348
Total				**$506,731**		**$89,049**

[1] Reflects the adjustment to UAAL amortization periods made in 2020.

Exhibit I: Projection of UAAL Balances and Payments

Outstanding Balance of $507 Million in Net UAAL as of June 30, 2021

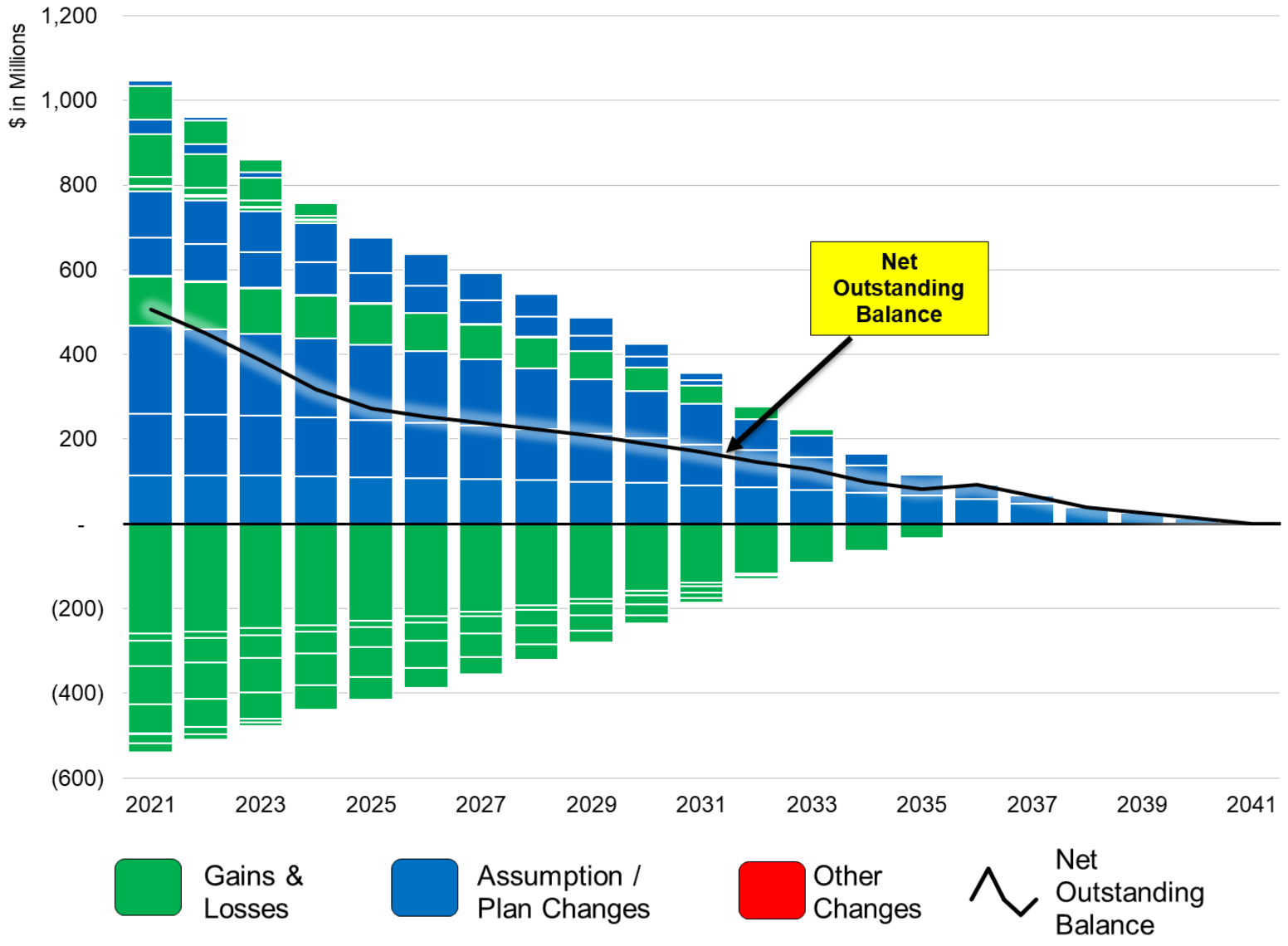


Exhibit I: Projection of UAAL Balances and Payments (continued)

Annual Payments Required to Amortize $507 Million in Net UAAL as of June 30, 2021

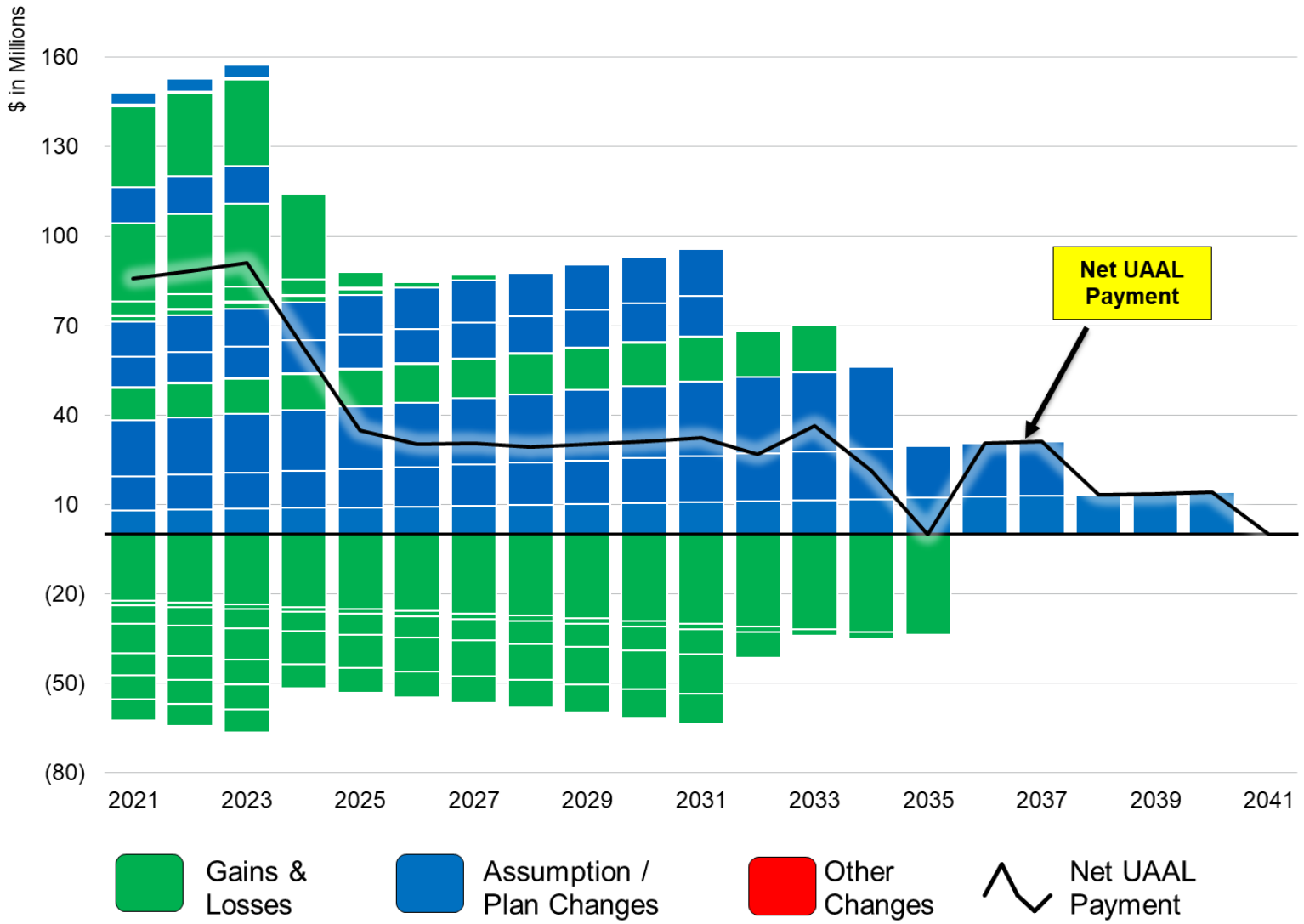


Exhibit J: Definition of Pension Terms

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

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

Section 3: Supplemental Information

Actuarial Present Value of Future Plan Benefits:	The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future 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 and expenses when due.
Actuarial Valuation:	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. 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).
Actuarial Value of Assets (AVA):	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.
Actuarially Determined:	Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the plan.
Actuarially Determined Contribution (ADC):	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under the plan's funding policy. The ADC consists of the Employer Normal Cost and the Amortization Payment.
Amortization Method:	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the 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.
Amortization Payment:	The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the UAAL.

Section 3: Supplemental Information

Assumptions or Actuarial Assumptions:	The estimates upon which the cost of the Fund is calculated, including: Investment return - the rate of investment yield that the Fund will earn over the long-term future; Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates; Retirement rates - the rate or probability of retirement at a given age or service; Disability rates - the probability of disability retirement at a given age; Termination rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement; Salary increase rates - the rates of salary increase due to inflation and productivity growth.
Closed Amortization Period:	A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 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.
Decrements:	Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or withdrawal.
Defined Benefit Plan:	A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.
Defined Contribution Plan:	A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.
Employer Normal Cost:	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Experience Study:	A periodic review and analysis of the actual experience of the Fund 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.
Funded Ratio:	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.
Investment Return:	The rate of earnings of the Fund 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.

Section 3: Supplemental Information

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

Section 4: Actuarial Valuation Basis

Exhibit 1: Actuarial Assumptions and Methods

Rationale for Assumptions:	The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2017 through June 30, 2020 Actuarial Experience Study dated June 3, 2021. Unless otherwise noted, all actuarial assumptions and methods shown below apply to members for all tiers. These assumptions were adopted by the Board.
Economic Assumptions	
Net Investment Return:	7.00%; net of investment and administrative expenses. Based on the Actuarial Experience Study reference above, expected investment expenses represent about 0.15% of the Actuarial Value of Assets.
Member Contribution Crediting Rate:	2.50% (actual increase is based on projected long term ten-year Treasury rate).
Consumer Price Index:	Increase of 2.50% per year. Retiree COLA increases of 2.75% are subject to a 3.00% maximum change per year for both PEPRA and Non-PEPRA General Tier 1 and both PEPRA and Non-PEPRA Safety. For both PEPRA and non-PEPRA General Tier 2, SEIU members receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI that applies to future service after March 2003.
Payroll Growth:	Inflation of 2.50% per year plus “across the board” real salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.
Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 2.50% per year from the valuation date.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.50% per year from the valuation date.

Section 4: Actuarial Valuation Basis

Salary Increases:

The annual rate of compensation increase includes: inflation at 2.50%, plus "across the board" salary increases of 0.50% per year, plus the following merit and promotion increases:

Years of Service	Rate (%)	
	General	Safety
Less than 1	7.00	9.00
1 – 2	5.25	6.25
2 – 3	4.00	4.75
3 – 4	3.50	4.50
4 – 5	3.00	4.25
5 – 6	2.75	4.00
6 – 7	2.50	2.75
7 – 8	2.25	1.75
8 – 9	2.00	1.50
9 – 10	1.75	1.25
10 – 11	1.50	1.20
11 – 12	1.40	1.15
12 – 13	1.30	1.10
13 – 14	1.20	1.05
14 – 15	1.10	1.00
15 – 16	1.00	1.00
16 – 17	0.95	1.00
17 – 18	0.90	1.00
18 – 19	0.85	1.00
19 – 20	0.80	1.00
20 & Over	0.75	1.00

Section 4: Actuarial Valuation Basis

Demographic Assumptions:	
Post-Retirement Mortality Rates:	*Healthy* • **General Members:** Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. • **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-2020. *Disabled* • **General Members:** Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two dimensional mortality improvement scale MP-2020. • **Safety Members:** Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020. *All Beneficiaries* • Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 10% for females, projected generationally with the two-dimensional mortality improvement scale MP-2020. The Pub-2010 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

Section 4: Actuarial Valuation Basis

Pre-Retirement Mortality Rates:

General Members: Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2020.

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-2020.

	Rate (%)			
	General[1]		Safety[1]	
Age	Male	Female	Male	Female
25	0.02	0.01	0.03	0.02
30	0.03	0.01	0.04	0.02
35	0.04	0.02	0.04	0.03
40	0.06	0.03	0.05	0.04
45	0.09	0.05	0.07	0.06
50	0.13	0.08	0.10	0.08
55	0.19	0.11	0.15	0.11
60	0.28	0.17	0.23	0.14
65	0.41	0.27	0.35	0.20
70	0.61	0.44	0.66	0.39

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

[1] 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 Above-Median Mortality Table (separate tables for males and females) with rates increased by 5% for females, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2020, weighted one-third male and two-thirds 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-2020, weighted 80% male and 20% female.

Section 4: Actuarial Valuation Basis

Disability Incidence:

Age	Rate (%) General	Rate (%) Safety
20	0.01	0.03
25	0.01	0.06
30	0.02	0.24
35	0.04	0.38
40	0.08	0.52
45	0.12	0.84
50	0.19	1.12
55	0.24	2.52
60	0.31	5.86
65	0.41	0.00
70	0.45	0.00

30% of General disabilities are assumed to be service connected (duty) disabilities and the other 70% 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	Rate (%) Safety
Less than 1	13.50	10.00
1 – 2	9.50	5.50
2 – 3	8.50	5.25
3 – 4	6.75	4.50
4 – 5	5.50	4.25
5 – 6	5.00	2.50
6 – 7	4.00	2.25
7 – 8	3.50	2.00
8 – 9	3.50	1.80
9 – 10	3.50	1.60
10 – 11	3.50	1.50
11 – 12	3.25	1.40
12 – 13	3.25	1.20
13 – 14	3.00	1.10
14 – 15	2.75	1.00
15 – 16	2.75	0.95
16 – 17	2.50	0.85
17 – 18	2.50	0.75
18 – 19	2.00	0.50
19 – 20	1.75	0.50
20 & Over	1.75	0.50

The greater of a refund of member contributions and a deferred annuity is valued when a member terminates.

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

Section 4: Actuarial Valuation Basis

Retirement Rates:

Age	General Tier 1 and 2		Safety Non-PEPRA		General PEPRA Tier 1 and 2	Safety PEPRA
	Less than 30 Years of Service	30 or More Years of Service	Less than 30 Years of Service	30 or More Years of Service		
Under 50	0.00	50.00	1.50	1.50	0.00	0.00
50	2.00	2.00	2.00	2.00	0.00	4.00
51	2.25	2.25	1.75	1.75	0.00	1.75
52	2.75	2.75	2.25	2.25	1.50	3.25
53	3.00	3.00	3.25	3.25	1.50	5.50
54	3.25	4.00	15.00	20.00	2.00	16.00
55	4.50	5.00	20.00	37.00	4.00	20.00
56	5.25	6.00	20.00	25.00	4.75	20.00
57	5.50	7.00	22.00	30.00	5.25	20.00
58	6.00	9.00	22.00	33.00	5.50	18.00
59	8.00	9.50	22.00	35.00	6.50	25.00
60	10.50	14.00	35.00	35.00	9.00	30.00
61	13.00	20.00	35.00	45.00	11.00	30.00
62	22.00	30.00	35.00	45.00	20.00	35.00
63	18.00	25.00	35.00	45.00	18.00	35.00
64	18.00	25.00	35.00	45.00	16.00	35.00
65	30.00	45.00	100.00	100.00	20.00	100.00
66	35.00	50.00	100.00	100.00	30.00	100.00
67	35.00	47.50	100.00	100.00	35.00	100.00
68	27.50	47.50	100.00	100.00	25.00	100.00
69	25.00	25.00	100.00	100.00	35.00	100.00
70	25.00	25.00	100.00	100.00	55.00	100.00
71	25.00	25.00	100.00	100.00	55.00	100.00
72	25.00	25.00	100.00	100.00	55.00	100.00
73	25.00	25.00	100.00	100.00	55.00	100.00
74	25.00	25.00	100.00	100.00	55.00	100.00
75	100.00	100.00	100.00	100.00	100.00	100.00

Section 4: Actuarial Valuation Basis

Retirement Age and Benefit for Deferred Vested Members:	Future current and future deferred vested members, retirement age assumptions are as follows: **General Retirement Age** Reciprocal members: 60 Other members: 60 **Safety Retirement Age** Reciprocal members: 55 Other members: 52 Future deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit. 45% of future General and 60% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 3.75% and 4.00% compensation increases are assumed per annum for General and Safety, respectively.
Future Benefit Accruals:	1.0 year of service per year of employment.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Definition of Active Members:	All active members of VCERA as of the valuation date.
Form of Payment:	All active and inactive members are assumed to elect the unmodified option at retirement.
Percent Married:	For all active and inactive members, 70% of male members and 55% of female members are assumed to be married at pre-retirement death or retirement. There is no explicit assumption for children's benefits.
Age and Gender of Spouse:	For all active and inactive members, male members are assumed to have a female spouse who is 3 years younger than the member and female members are assumed to have a male spouse who is 2 years older than the member.
In-Service Redemptions:	The following assumptions for in-service redemptions pay as a percentage of final average compensation are used: General Tier 1: 8.00% General Tier 2: 3.50% Safety: 6.50% General PEPRA: 0.00% Safety PEPRA: 0.00% For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect member contribution rates.

Section 4: Actuarial Valuation Basis

Average Entry Age for Member Contribution Rates:	For non-PEPRA members hired after November 1974 who are not contributing fifty percent of Normal Cost, they will pay a contribution corresponding to a General and Safety member hired at entry age 35 and 27, respectively.
Actuarial Funding Policy	
Actuarial Cost Method:	Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date minus the lesser of years of employment or years of benefit service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation, as if the current benefit formula for each individual has always been in effect (i.e., "replacement life within a tier").
Actuarial Value of Assets:	Market Value of Assets (MVA) less unrecognized returns in each of the last ten 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 annually over a five-year period.
Valuation Value of Assets:	Actuarial Value of Assets, reduced by the value of the non-vested supplemental benefit reserve and statutory contingency reserve.

Section 4: Actuarial Valuation Basis

Amortization Policy:	The UAAL as of June 30, 2011 shall continue to be amortized over separate 15-year period amortization layers based on the valuations during which each separate layer was previously established. Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 will be amortized over a period of 15 years. Any new UAAL as a result of change in actuarial assumptions or methods will be amortized over a period of 20 years. Unless an alternative amortization period is recommended by the Actuary and accepted by the Board based on the results of an actuarial analysis: • With the exception noted below, the increase in UAAL as a result of any plan amendments will be amortized over a period of 15 years; • 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. The UAAL will be amortized over "closed" amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation. The UAAL will be amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase (i.e., wage inflation). If an overfunding or "surplus" exists (i.e., the VVA exceeds the AAL, so that the total of all UAAL amortization layers becomes negative), any prior UAAL amortization layers will be considered fully amortized, and any subsequent UAAL will be amortized as the first of a new series of amortization layers, using the above amortization periods. If the surplus exceeds 20% of the AAL per Section 7522.52 of the Government Code, then the amount of surplus in excess of 20% of the AAL (and any subsequent surpluses in excess of that amount) will be amortized over an "open" amortization period of 30 years, but only if the other conditions of Section 7522.52 have also been met. If those conditions are not met, then the surplus will not be amortized and the full Normal Cost will be contributed. These amortization policy components will apply separately to each of VCERA's UAAL cost groups. Basic UAAL contribution rates have been calculated on a combined basis for all General Tiers. COLA UAAL contribution rates have been calculated on a combined basis for all General Tiers that have a COLA. In April 2020, the Board directed Segal to adjust the remaining amortization periods for certain amortization layers in order to minimize the contribution rate tail volatility associated with the UAAL layers that were first established in 2006, 2007 and 2008, and in 2014 and 2015. Effective with the 2020 actuarial valuation the remaining amortization periods for the 2006, 2007, and 2008 UAAL amortization layers were set to 4 years and those for the 2014 and 2015 UAAL actuarial gain/loss amortization layers were set to 12 years.

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 expressed as a level percentage of the member's compensation. *Contribution to the Unfunded Actuarial Accrued Liability (UAAL)* The annual contribution rate that, if paid annually over the UAAL amortization period, would accumulate to the amount necessary to fully fund the UAAL. Accumulation includes annual crediting of interest at the assumed investment earning rate. The contribution (or rate credit in the case of a negative UAAL) is calculated to remain as a level percentage of future active member payroll (including payroll for new members as they enter the Association) assuming a constant number of active members. In order to remain as a level percentage of payroll, amortization payments (credits) are scheduled to increase at the annual rate of 3.00% (i.e., 2.50% inflation plus 0.50% "across the board" salary increase). The amortization policy is described on the previous page. The recommended employer contributions shown in *Section 2, Subsection F* are calculated based on a 50/50 sharing of Normal Cost for non-PEPRA Tiers. For purposes of these calculations, we have been previously directed by VCERA to assume that the cessation of member contributions after 30 years of service for non-PEPRA members continues per the County Employees Retirement Law (CERL) and that the cost associated with this provision is to be paid for by employers. The employer contributions shown in *Section 4, Exhibit 4* are calculated under the prior method (i.e., without 50/50 sharing of Normal Cost for non-PEPRA tiers).

Section 4: Actuarial Valuation Basis

Member Contributions:	The member contribution rates for all members are provided in *Section 4, Exhibit 3*, which are calculated based on a 50/50 sharing of Normal Cost. Member contributions accumulate with interest at the lesser of the assumed investment earning rate or the rate on ten year U.S. Treasury notes. Any difference between the assumed investment earning rate and the actual interest crediting rate will be credited to the County Advance reserve. Please note that in calculating the basic member rate, we follow the Board's past practice and have not included any in-service pay redemptions that may potentially increase a member's final average compensation and hence retirement benefit. The member rates provided in the report are the full rate before reflecting any employer pickup. General Tier 2 members eligible for the fixed 2% cost-of-living benefit contribute a negotiated 2.63% of compensation per year towards the cost of that benefit that is reflected in this report. **Non-PEPRA Members (Prior Methodology)** The member contributions shown in *Section 4, Exhibit 5* are calculated under the prior method (i.e., without 50/50 sharing of Normal Cost for non-PEPRA tiers). The basic member contribution rate is determined so that the accumulation of a member's basic contributions made in a given year until a certain age will be sufficient to fund an annuity at that age that is equal to 1/120 of Final Average Compensation for General members and 1/100 of Final Average Compensation for Safety members. That age is 55 for General Tier 1 members, 60 for General Tier 2 members and 50 for Safety members. It is assumed that contributions are made annually at the same rate, starting at entry age. In addition to their basic contributions, General Tier 1 and Safety members pay one-half of the total Normal Cost necessary to fund their cost-of-living benefits. **PEPRA Members** Pursuant to Section 7522.30(a) of the Government Code, members under PEPRA tiers are required to contribute at least 50% of the Normal Cost. In addition, there are certain additional requirements that would have to be met such as requiring the new employees to pay the contribution rate of "similarly situated employees", if it is greater. (reference: Section 7522.30(c)). We further understand that different rules may have to be applied for collectively bargained employees, non-represented, managerial or other supervisory employees. (reference: Section 7522.30(e)). In preparing the Normal Cost rates in this report, we have assumed that exactly 50% of the Normal Cost would be paid by the new members and we have taken into account in this valuation only the requirements of Section 7522.30(c), but not the requirements of Section 7522.30(e). The only exception to this is that we have also shown the PEPRA Tier 2 with COLA contribution rates including the member COLA contribution rate of 2.63% of compensation based on current bargaining agreements. Also of note is that based on our discussions with VCERA, we have used the discretion made available by AB1380 to not round the PEPRA member's contribution rates to the nearest one quarter of one percent as was previously required by PEPRA.
Tier 2 COLA Procedures	This benefit has been valued consistent with the methodologies described in our October 9, 2006 report entitled "Funding Policies and Procedures for General Tier 2 COLA Benefit".

Section 4: Actuarial Valuation Basis

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 2021. 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. Non-PEPRA benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m). Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard. Contribution rates determined in this valuation have not been reduced for the Section 415 limitations. However, it is anticipated that PEPRA members will not be limited in the future due to the PEPRA compensation limit applied in the determination of their benefit. Actual limitations will result in actuarial gains as they occur.
Changed Actuarial Assumptions and Methods:	A minor refinement to the Entry Age actuarial cost method was made. Previously, Entry Age was calculated as the age of the member as of the valuation date minus years of employment, including non-VCERA employment. Previously, these assumptions and methods were as follows:
Prior Actuarial Assumptions:	
Net Investment Return:	7.25%; net of investment and administrative expenses.
Member Contribution Crediting Rate:	2.75% (Actual rate is based on projected long term ten-year Treasury rate).
Consumer Price Index:	Increase of 2.75% per year. Retiree COLA increases due to CPI are subject to a 3.00% maximum change per year for both PEPRA and Non-PEPRA General Tier 1 and both PEPRA and Non-PEPRA Safety. For both PEPRA and non-PEPRA General Tier 2, members represented by SEIU receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI that applies to future service after March 2003.

Section 4: Actuarial Valuation Basis

Prior Actuarial Assumptions (continued):	
Payroll Growth:	Inflation of 2.75% per year plus "across the board" real salary increases of 0.50% per year, used to amortize the UAAL as a level percentage of payroll.
Increase in Internal Revenue Code Section 401(a)(17) Compensation Limit:	Increase of 2.75% per year from the valuation date.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.75% per year from the valuation date.
Salary Increases:	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:

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

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 (separate tables for males and females) times 90% for males and 100% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017.
- **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) times 75% for males and 85% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017.

Disabled

- **General Members:** Headcount-Weighted RP-2014 Disabled Retiree Mortality Table (separate tables for males and females) times 85% for males and 100% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017.
- **Safety Members:** Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females) times 100% for males and 115% for females, projected generationally with the two-dimensional mortality improvement scale MP-2017.

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-2017 projection scale.

	Rate (%)			
	General[1]		Safety[1]	
Age	Male	Female	Male	Female
25	0.05	0.02	0.05	0.02
30	0.05	0.02	0.05	0.02
35	0.05	0.03	0.05	0.03
40	0.06	0.04	0.06	0.04
45	0.10	0.07	0.10	0.07
50	0.17	0.11	0.17	0.11
55	0.27	0.17	0.27	0.17
60	0.45	0.24	0.45	0.24
65	0.78	0.36	0.78	0.36
70	1.27	0.59	1.27	0.59

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

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

Section 4: Actuarial Valuation Basis

Prior Actuarial Assumptions (continued):

Mortality Rates for Member Contributions:

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

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

Disability Incidence:

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

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

Prior Actuarial Assumptions (continued):

Termination:

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

The greater of a refund of member contributions and a deferred annuity is valued when a member terminates.

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

Section 4: Actuarial Valuation Basis

Prior Actuarial Assumptions (continued):

Retirement Rates:

Age	General Tier 1 and 2		Safety Non-PEPRA		General PEPRA Tier 1 and 2	Safety PEPRA
	Less than 30 Years of Service	30 or More Years of Service	Less than 30 Years of Service	30 or More Years of Service		
Under 50	0.00	50.00	1.00	1.00	0.00	0.00
50	2.00	2.00	2.00	2.00	0.00	4.00
51	2.00	2.00	2.25	2.25	0.00	2.25
52	2.50	2.50	2.50	2.50	1.50	3.50
53	3.00	3.00	3.50	3.50	1.50	5.50
54	3.25	3.25	13.00	13.00	2.00	13.00
55	4.75	4.75	20.00	30.00	4.00	20.00
56	5.00	5.00	20.00	30.00	4.50	20.00
57	5.50	5.50	18.00	27.00	5.00	18.00
58	7.00	7.00	22.00	33.00	5.50	18.00
59	7.50	7.50	22.00	33.00	6.00	25.00
60	10.50	15.75	25.00	37.50	9.00	25.00
61	14.00	21.00	28.00	42.00	11.00	25.00
62	25.00	37.50	35.00	45.00	22.50	40.00
63	20.00	30.00	35.00	45.00	20.00	40.00
64	20.00	30.00	35.00	45.00	18.00	40.00
65	28.00	42.00	100.00	100.00	20.00	100.00
66	35.00	52.50	100.00	100.00	30.00	100.00
67	30.00	45.00	100.00	100.00	30.00	100.00
68	30.00	45.00	100.00	100.00	25.00	100.00
69	22.50	22.50	100.00	100.00	35.00	100.00
70	22.50	22.50	100.00	100.00	50.00	100.00
71	20.00	20.00	100.00	100.00	50.00	100.00
72	20.00	20.00	100.00	100.00	50.00	100.00
73	20.00	20.00	100.00	100.00	50.00	100.00
74	20.00	20.00	100.00	100.00	50.00	100.00
75	100.00	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:	General Retirement Age: 59 Safety Retirement Age: 53 Future deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit. 45% of future General and 60% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 3.75% and 3.95% compensation increases are assumed per annum for General and Safety, respectively.
In-Service Redemptions:	The following assumptions for in-service redemptions pay as a percentage of final average compensation are used: General Tier 1: 7.50% General Tier 2: 3.50% Safety: 7.00% General PEPRA: 0.00% Safety PEPRA: 0.00% For determining the cost of the basic benefit (i.e., non-COLA component), the cost of this pay element is currently recognized in the valuation as an employer only cost and does not affect member contribution rates.

Exhibit 2: Summary of Plan Provisions

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

Plan Year:	July 1 through June 30
Membership Eligibility:	All regular employees of the County of Ventura or contracting district, scheduled to work 64 or more hours biweekly, are eligible to become a member of the plan subject to classification below:
General Tier 1	All General members with membership dates before June 30, 1979, plus Deputy Sheriff trainees and certain executive management with membership dates before January 1, 2013.
General Tier 2	All General members with membership dates on or after June 30, 1979 and before January 1, 2013, except as noted above for General Tier 1.
General PEPRA Tier 1	Deputy Sheriff trainees with membership dates on or after January 1, 2013 and before April 17, 2014.
General PEPRA Tier 2	All General members with membership dates on or after January 1, 2013, except as noted above for General PEPRA Tier 1.
Safety	All Safety members with membership dates before January 1, 2013.
Safety PEPRA	All Safety members with membership dates on or after January 1, 2013.
Final Compensation for Benefit Determination:	
General Tier 1 and Safety	Highest consecutive twelve months of compensation earnable (§31462.1) (FAS1).
General Tier 2	Highest consecutive thirty-six months of compensation earnable (§31462) (FAS3).
General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA	Highest consecutive thirty-six months of pensionable compensation (§7522.10(c), §7522.32 and §7522.34) (FAS3).
Compensation Limit:	
General Tier 1, General Tier 2 and Safety	For members with membership dates on or after July 1, 1996, Compensation Earnable is limited to Internal Revenue Code Section 401(a)(17). The limit as of July 1, 2021 is $290,000. The limit is indexed for inflation on an annual basis.
General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA	Pensionable Compensation is limited to $128,059 for 2021 ($153,671, if not enrolled in Social Security). The limit is indexed for inflation on an annual basis.
Service:	Years of service. (Yrs).

Section 4: Actuarial Valuation Basis

Service Retirement Eligibility:		
General	Age 50 with 10 years of service, or age 70 regardless of service, or after 30 years regardless of age (§31672).	
Safety	Age 50 with 10 years of service, or age 70 regardless of service, or after 20 years regardless of age (§31663.25).	
General PEPRA	Age 52 with 5 years of service (§7522.20(a)) or age 70 regardless of service (§31672.3).	
Safety PEPRA	Age 50 with 5 years of service (§7522.25(d)) or age 70 regardless of service (§31672.3).	
Benefit Formula:		
General Tier 1 (§31676.11)	**Retirement Age**	**Benefit Formula**
	50	1.24% x (FAS1 – $1,400) x Yrs
	55	1.67% x (FAS1 – $1,400) x Yrs
	60	2.18% x (FAS1 – $1,400) x Yrs
	62	2.35% x (FAS1 – $1,400) x Yrs
	65 and over	2.61% x (FAS1 – $1,400) x Yrs
General Tier 2 (§31676.1)	**Retirement Age**	**Benefit Formula**
	50	1.18% x (FAS3 – $1,400) x Yrs
	55	1.49% x (FAS3 – $1,400) x Yrs
	60	1.92% x (FAS3 – $1,400) x Yrs
	62	2.09% x (FAS3 – $1,400) x Yrs
	65 and over	2.43% x (FAS3 – $1,400) x Yrs
General PEPRA Tier 1 and General PEPRA Tier 2 (§7522.20(a))	**Retirement Age**	**Benefit Formula**
	52	1.00% x FAS3 x Yrs
	55	1.30% x FAS3 x Yrs
	60	1.80% x FAS3 x Yrs
	62	2.00% x FAS3 x Yrs
	65	2.30% x FAS3 x Yrs
	67 and over	2.50% x FAS3 x Yrs

Section 4: Actuarial Valuation Basis

Benefit Formula (continued)		
Safety (§31664)	**Retirement Age**	**Benefit Formula**
	50	2.00% x FAS1 x Yrs
	55 and over	2.62% x FAS1 x Yrs
Safety PEPRA (§7522.25(d))	**Retirement Age**	**Benefit Formula**
	50	2.00% x FAS3 x Yrs
	55	2.50% x FAS3 x Yrs
	57 and over	2.70% x FAS3 x Yrs
Maximum Benefit:		
General Tier 1, General Tier 2 and Safety	100% of Highest Average Compensation (§31676.1, §31664.11, §31664).	
General PEPRA Tier 1, General PEPRA Tier 2 and Safety PEPRA	There is no final compensation limit on the maximum retirement benefit.	
Ordinary Disability:		
General		
Eligibility	Five years of service (§31720).	
Benefit	1.5% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 65, but the total benefit cannot be more than one-third of Final Compensation (§31727). For all members, 100% of the Service Retirement benefit will be paid, if greater.	
Safety		
Eligibility	Five years of service (§31720).	
Benefit	1.8% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 55, but the total benefit cannot be more than one-third of Final Compensation (§31727.2). For all members, 100% of the Service Retirement benefit will be paid, if greater.	
Line-of-Duty Disability:		
Eligibility	No age or service requirements (§31720).	
Benefit	50% of the Final Compensation or 100% of Service Retirement benefit, if greater (§31727.4).	

Section 4: Actuarial Valuation Basis

Pre-Retirement Death:	
All Members	
Eligibility	None.
Basic lump sum benefit	Refund of member contributions with interest, plus one month's compensation for each year of service, to a maximum of six months' compensation (§31781).
Line-of-Duty Death	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or minor children (§31787). An additional lump sum payment of one-year of compensation is paid if Line-of-Duty death for Safety member (§31787.6).
Vested Members	
Eligibility	Five years of service.
Basic benefit	60% of the greater of Service Retirement or Ordinary Disability Retirement benefit payable to surviving eligible spouse or eligible children (§31765.1, §31781.1), in lieu of the basic lump sum benefit above (§31781). An additional lump sum payment of one-year of compensation is paid if Line-of-Duty death for Safety member (§31787.6).
Death After Retirement:	
All Members	
Service Retirement or Ordinary Disability Retirement	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 one year prior to the effective retirement date or at least two years prior to the date of death and has attained age 55 on or prior to the date of death (§31760.2, §31785.1).
Line-of-Duty Disability	Unless another option was selected at retirement, 100% of member's unmodified allowance continued to eligible spouse (§31786). An eligible spouse is a surviving spouse who was married to the member one year prior to the effective retirement date or at least two years prior to the date of death and has attained age 55 on or prior to the date of death (§31786.1).
Additional Death Benefit	A lump sum benefit of $5,000 lump sum benefit payable to member's beneficiary (§31789.3).
Withdrawal Benefits:	
Less than Five Years of Service	Refund of accumulated member contributions with interest (§31628). A member may also elect to leave contributions on deposit in the retirement fund (§31629.5).
Five or More Years of Service	If contributions left on deposit, a member is entitled to earned benefits commencing at any time after eligible to retire (§31700). Service for eligibility includes service credited as an employee of a reciprocal system.

Section 4: Actuarial Valuation Basis

Post-retirement Cost-of-Living Benefits:	
General Tier 1, Safety, General PEPRA Tier 1 and Safety PEPRA	Future changes based on changes to the Consumer Price Index to a maximum of 3% per year, excess "banked" (§31870.1).
General Tier 2 and General PEPRA Tier 2	Members represented by SEIU receive a fixed 2% cost-of-living adjustment, not subject to changes in the CPI that applies to future service after March, 2003. This benefit has been valued consistent with the methodologies described in our October 9, 2006 report entitled "Funding Policies and Procedures for General Tier II COLA Benefit".
Supplemental Benefit:	A supplemental benefit in the amount of $108.44 per month is paid to retirees and their survivors.
Member Contributions:	Please refer to *Section 4, Exhibit 3* for the specific rates.
General Tier 1, Safety and Safety PEPRA	Provide for 50% of total Normal Cost.
General Tier 2 and General PEPRA Tier 2	Provide for 50% of total basic Normal Cost. In addition, for General Tier 2 with COLA members, the current member COLA contribution rate of 2.63% of compensation has been reflected.
Other Information:	For Non-PEPRA members hired after November 1974, they will pay a contribution corresponding to a General and Safety member hired at entry age 35 and 27, respectively. Safety Non-PEPRA members with 30 or more years of service are exempt from paying member contributions. The same applies for Non-General PEPRA members hired on or before March 7, 1973.
Plan Provisions Not Valued:	The Board of Retirement has approved a non-vested supplemental benefit. This benefit is funded from Undistributed Excess Earnings, paid from a reserve that is not included in the Valuation Value of Assets and is subject at all times to the availability of funds. The non-vested supplemental benefit of $27.50 per month paid to retirees and their survivors terminated upon issuance of the June 2019 payment. This was due to the depletion of the funds in this reserve.
Changed Plan Provisions:	On July 30, 2020, the California Supreme Court issued a decision in the Alameda County Deputy Sheriff's Assn. et al., v. Alameda County Employees' Retirement Assn. litigation that clarified what should be considered compensation earnable for non-PEPRA members and pensionable compensation for PEPRA members for that and other similarly situated 1937 Act county employees retirement systems. See Item (1) on page 7 of this report for a discussion of the action taken by VCERA.

Note: The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the Association should find the plan summary not in accordance with the actual provisions, the Association should alert the actuary so they can both be sure the proper provisions are valued.

Exhibit 3: Member Contribution Rates

50/50 Sharing of Normal Cost for Non-PEPRA Tiers

	Basic		COLA		Total	
	First $350	Over $350	First $350	Over $350	First $350	Over $350
General Tier 1	6.07%	9.11%	1.94%	2.90%	8.01%	12.01%
General Tier 2	5.28%	7.92%	0.00%	0.00%	5.28%	7.92%
General Tier 2 w/ COLA[1]	5.28%	7.92%	2.63%	2.63%	7.91%	10.55%
Safety	12.01%	12.01%	4.70%	4.70%	16.71%	16.71%

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

Exhibit 3: Member Contribution Rates (continued)

Member Contribution Rates for PEPRA Members

	Basic	COLA	Total
General Tier 2	7.77%	0.00%	7.77%
General Tier 2 w/ COLA[1]	7.77%	2.63%	10.40%
Safety	11.00%	4.34%	15.34%

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

Exhibit 4: Employer Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers

	June 30, 2021 Actuarial Valuation Recommended Rates for FY 2022-23				June 30, 2020 Actuarial Valuation Recommended Rates for FY 2021-22			
	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)
General Tier 1 Members								
Normal Cost	10.27%	2.96%	13.23%	$304	8.89%	2.66%	11.55%	$474
UAAL[2]	6.03%	6.29%	12.32%	283	7.01%	5.71%	12.72%	522
Total Contributions	**16.30%**	**9.25%**	**25.55%**	**$587**	**15.90%**	**8.37%**	**24.27%**	**$996**
General Tier 2 Members								
Normal Cost	8.99%	0.00%	8.99%	$18,236	8.52%	0.00%	8.52%	$17,612
UAAL[2]	6.03%	0.00%	6.03%	12,241	7.01%	0.00%	7.01%	14,493
Total Contributions	**15.02%**	**0.00%**	**15.02%**	**$30,477**	**15.53%**	**0.00%**	**15.53%**	**$32,105**
General PEPRA Tier 2 Members								
Normal Cost	7.77%	0.00%	7.77%	$7,416	7.48%	0.00%	7.48%	$6,145
UAAL[2]	6.03%	0.00%	6.03%	5,757	7.01%	0.00%	7.01%	5,759
Total Contributions	**13.80%**	**0.00%**	**13.80%**	**$13,173**	**14.49%**	**0.00%**	**14.49%**	**$11,904**
General Tier 2 Members w/ COLA								
Normal Cost[3]	8.99%	0.68%	9.67%	$18,899	8.52%	0.41%	8.93%	$18,037
UAAL[2, 4]	6.03%	6.29%	12.32%	24,074	7.01%	5.71%	12.72%	25,699
Total Contributions	**15.02%**	**6.97%**	**21.99%**	**$42,973**	**15.53%**	**6.12%**	**21.65%**	**$43,736**
General PEPRA Tier 2 Members w/ COLA								
Normal Cost[3]	7.77%	0.68%	8.45%	$10,936	7.48%	0.50%	7.98%	$9,555
UAAL[2, 4]	6.03%	6.29%	12.32%	15,942	7.01%	5.71%	12.72%	15,237
Total Contributions	**13.80%**	**6.97%**	**20.77%**	**$26,878**	**14.49%**	**6.21%**	**20.70%**	**$24,792**
All General Members[5]								
Normal Cost	8.56%	0.36%	8.92%	$55,791	8.18%	0.25%	8.43%	$51,823
UAAL	6.03%	3.29%	9.32%	58,297	7.01%	3.03%	10.04%	61,710
Total Contributions	**14.59%**	**3.65%**	**18.24%**	**$114,088**	**15.19%**	**3.28%**	**18.47%**	**$113,533**

Note: Applicable footnotes are shown on next page.

Exhibit 4: Employer Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

	June 30, 2021 Actuarial Valuation Recommended Rates for FY 2022-23				June 30, 2020 Actuarial Valuation Recommended Rates for FY 2021-22			
	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)	Basic	COLA	Total	Estimated Annual Dollar Amount[1] ($ in '000s)
Safety Members								
Normal Cost	15.42%	4.61%	20.03%	$29,452	13.98%	4.26%	18.24%	$27,079
UAAL	42.89%	(26.89%)	16.00%	23,526	44.86%	(24.26%)	20.60%	30,583
Total Contributions	**58.31%**	**(22.28%)**	**36.03%**	**$52,978**	**58.84%**	**(20.00%)**	**38.84%**	**$57,662**
Safety PEPRA Members								
Normal Cost	11.00%	4.34%	15.34%	$6,925	10.45%	4.12%	14.57%	$5,862
UAAL	42.89%	(26.89%)	16.00%	7,223	44.86%	(24.26%)	20.60%	8,288
Total Contributions	**53.89%**	**(22.55%)**	**31.34%**	**$14,148**	**55.31%**	**(20.14%)**	**35.17%**	**$14,150**
All Safety Members[5]								
Normal Cost	14.38%	4.55%	18.93%	$36,377	13.23%	4.23%	17.46%	$32,941
UAAL	42.89%	(26.89%)	16.00%	30,749	44.86%	(24.26%)	20.60%	38,871
Total Contributions	**57.27%**	**(22.34%)**	**34.93%**	**$67,126**	**58.09%**	**(20.03%)**	**38.06%**	**$71,812**
All Categories Combined[5]								
Normal Cost	9.93%	1.34%	11.27%	$92,168	9.37%	1.18%	10.55%	$84,764
UAAL	14.70%	(3.81%)	10.89%	89,046	15.90%	(3.38%)	12.52%	100,581
Total Contributions	**24.63%**	**(2.47%)**	**22.16%**	**$181,214**	**25.27%**	**(2.20%)**	**23.07%**	**$185,345**

1 Based on projected compensation for each year shown on page 36.
2 Basic UAAL rates have been calculated on a combined basis for all General Tiers. COLA UAAL rates have been calculated on a combined basis for all General Tiers that have a COLA (excludes General Tier 2 without COLA and General PEPRA Tier 2 without COLA).
3 Reflects General Tier 2 member COLA contribution rate of 2.63% based on current bargaining agreements.
4 Includes 0.35% and 0.31% in COLA UAAL costs for June 30, 2021 and June 30, 2020, respectively, attributed to the first two years of service accrued for the fixed 2% COLA pursuant to Government Code 31627.
5 These aggregated rates are provided for informational purposes only as we understand that the tier specific rates will be implemented.

Exhibit 5: Member Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers

General Tier 1						
	Basic		COLA		Total	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350
16	3.76%	5.64%	1.32%	1.99%	5.08%	7.63%
17	3.83%	5.74%	1.35%	2.03%	5.18%	7.77%
18	3.90%	5.86%	1.38%	2.07%	5.28%	7.93%
19	3.98%	5.97%	1.41%	2.11%	5.39%	8.08%
20	4.06%	6.08%	1.43%	2.15%	5.49%	8.23%
21	4.13%	6.20%	1.46%	2.19%	5.59%	8.39%
22	4.21%	6.32%	1.49%	2.23%	5.70%	8.55%
23	4.29%	6.44%	1.52%	2.28%	5.81%	8.72%
24	4.38%	6.57%	1.54%	2.32%	5.92%	8.89%
25	4.46%	6.69%	1.57%	2.36%	6.03%	9.05%
26	4.55%	6.82%	1.60%	2.41%	6.15%	9.23%
27	4.63%	6.95%	1.64%	2.46%	6.27%	9.41%
28	4.72%	7.09%	1.67%	2.50%	6.39%	9.59%
29	4.82%	7.22%	1.70%	2.55%	6.52%	9.77%
30	4.91%	7.36%	1.73%	2.60%	6.64%	9.96%
31	5.01%	7.51%	1.76%	2.65%	6.77%	10.16%
32	5.10%	7.66%	1.80%	2.70%	6.90%	10.36%
33	5.21%	7.81%	1.84%	2.76%	7.05%	10.57%
34	5.31%	7.96%	1.87%	2.81%	7.18%	10.77%
35	5.41%	8.12%	1.92%	2.87%	7.33%	10.99%
36	5.52%	8.28%	1.95%	2.92%	7.47%	11.20%
37	5.63%	8.44%	1.98%	2.98%	7.61%	11.42%
38	5.73%	8.60%	2.03%	3.04%	7.76%	11.64%

Exhibit 5: Member Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

General Tier 1 (continued)

	Basic		COLA		Total	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350
39	5.84%	8.76%	2.06%	3.09%	7.90%	11.85%
40	5.95%	8.92%	2.10%	3.15%	8.05%	12.07%
41	6.05%	9.08%	2.14%	3.21%	8.19%	12.29%
42	6.16%	9.24%	2.17%	3.26%	8.33%	12.50%
43	6.26%	9.40%	2.22%	3.32%	8.48%	12.72%
44	6.37%	9.56%	2.25%	3.37%	8.62%	12.93%
45	6.47%	9.70%	2.28%	3.43%	8.75%	13.13%
46	6.56%	9.83%	2.31%	3.47%	8.87%	13.30%
47	6.64%	9.95%	2.34%	3.52%	8.98%	13.47%
48	6.71%	10.06%	2.36%	3.55%	9.07%	13.61%
49	6.77%	10.16%	2.40%	3.59%	9.17%	13.75%
50	6.83%	10.25%	2.42%	3.62%	9.25%	13.87%
51	6.88%	10.32%	2.42%	3.64%	9.30%	13.96%
52	6.91%	10.36%	2.44%	3.66%	9.35%	14.02%
53	6.88%	10.33%	2.44%	3.65%	9.32%	13.98%
54 & Over	6.79%	10.19%	2.40%	3.60%	9.19%	13.79%

Interest: 7.00% per annum
COLA: 2.50%
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor: 35.32%

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

Exhibit 5: Member Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

	General Tier 2					
	Basic		COLA		Total	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350
16	3.12%	4.68%	0.00%	0.00%	3.12%	4.68%
17	3.18%	4.77%	0.00%	0.00%	3.18%	4.77%
18	3.24%	4.86%	0.00%	0.00%	3.24%	4.86%
19	3.30%	4.96%	0.00%	0.00%	3.30%	4.96%
20	3.37%	5.05%	0.00%	0.00%	3.37%	5.05%
21	3.43%	5.15%	0.00%	0.00%	3.43%	5.15%
22	3.50%	5.25%	0.00%	0.00%	3.50%	5.25%
23	3.57%	5.35%	0.00%	0.00%	3.57%	5.35%
24	3.64%	5.46%	0.00%	0.00%	3.64%	5.46%
25	3.71%	5.56%	0.00%	0.00%	3.71%	5.56%
26	3.78%	5.67%	0.00%	0.00%	3.78%	5.67%
27	3.85%	5.78%	0.00%	0.00%	3.85%	5.78%
28	3.93%	5.89%	0.00%	0.00%	3.93%	5.89%
29	4.00%	6.00%	0.00%	0.00%	4.00%	6.00%
30	4.08%	6.12%	0.00%	0.00%	4.08%	6.12%
31	4.16%	6.23%	0.00%	0.00%	4.16%	6.23%
32	4.24%	6.35%	0.00%	0.00%	4.24%	6.35%
33	4.32%	6.48%	0.00%	0.00%	4.32%	6.48%
34	4.40%	6.60%	0.00%	0.00%	4.40%	6.60%
35	4.49%	6.73%	0.00%	0.00%	4.49%	6.73%
36	4.58%	6.86%	0.00%	0.00%	4.58%	6.86%
37	4.67%	7.00%	0.00%	0.00%	4.67%	7.00%
38	4.76%	7.14%	0.00%	0.00%	4.76%	7.14%
39	4.85%	7.28%	0.00%	0.00%	4.85%	7.28%
40	4.94%	7.42%	0.00%	0.00%	4.94%	7.42%

Exhibit 5: Member Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

General Tier 2 (continued)

	Basic		COLA		Total	
Entry Age	First $350	Over $350	First $350	Over $350	First $350	Over $350
41	5.04%	7.56%	0.00%	0.00%	5.04%	7.56%
42	5.13%	7.70%	0.00%	0.00%	5.13%	7.70%
43	5.23%	7.84%	0.00%	0.00%	5.23%	7.84%
44	5.32%	7.98%	0.00%	0.00%	5.32%	7.98%
45	5.41%	8.12%	0.00%	0.00%	5.41%	8.12%
46	5.50%	8.26%	0.00%	0.00%	5.50%	8.26%
47	5.59%	8.39%	0.00%	0.00%	5.59%	8.39%
48	5.68%	8.52%	0.00%	0.00%	5.68%	8.52%
49	5.76%	8.65%	0.00%	0.00%	5.76%	8.65%
50	5.84%	8.76%	0.00%	0.00%	5.84%	8.76%
51	5.90%	8.86%	0.00%	0.00%	5.90%	8.86%
52	5.96%	8.94%	0.00%	0.00%	5.96%	8.94%
53	6.01%	9.02%	0.00%	0.00%	6.01%	9.02%
54	6.06%	9.08%	0.00%	0.00%	6.06%	9.08%
55	6.08%	9.12%	0.00%	0.00%	6.08%	9.12%
56	6.08%	9.12%	0.00%	0.00%	6.08%	9.12%
57	6.03%	9.05%	0.00%	0.00%	6.03%	9.05%
58	6.23%	9.34%	0.00%	0.00%	6.23%	9.34%
59 & Over	6.44%	9.66%	0.00%	0.00%	6.44%	9.66%

Interest: 7.00% per annum
COLA: Members represented by SEIU contribute a negotiated 2.63% for a fixed 2% COLA pursuant to Government Code 31627.
Mortality: See *Section 4, Exhibit 1*
Salary Increase: Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)

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

Exhibit 5: Member Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

	Safety		
Entry Age	Basic	COLA	Total
16	7.96%	4.46%	12.42%
17	8.10%	4.53%	12.63%
18	8.24%	4.61%	12.85%
19	8.39%	4.69%	13.08%
20	8.53%	4.77%	13.30%
21	8.68%	4.85%	13.53%
22	8.83%	4.94%	13.77%
23	8.98%	5.02%	14.00%
24	9.14%	5.11%	14.25%
25	9.30%	5.20%	14.50%
26	9.46%	5.29%	14.75%
27	9.63%	5.39%	15.02%
28	9.80%	5.48%	15.28%
29	9.97%	5.58%	15.55%
30	10.15%	5.68%	15.83%
31	10.33%	5.78%	16.11%
32	10.52%	5.89%	16.41%
33	10.72%	6.00%	16.72%
34	10.92%	6.11%	17.03%
35	11.13%	6.23%	17.36%
36	11.35%	6.35%	17.70%

Exhibit 5: Member Contribution Rates without 50/50 Sharing of Normal Cost for Non-PEPRA Tiers (continued)

	Safety (continued)		
Entry Age	**Basic**	**COLA**	**Total**
37	11.57%	6.47%	18.04%
38	11.80%	6.60%	18.40%
39	12.04%	6.73%	18.77%
40	12.29%	6.87%	19.16%
41	12.54%	7.01%	19.55%
42	12.79%	7.15%	19.94%
43	12.95%	7.24%	20.19%
44	12.99%	7.27%	20.26%
45	13.02%	7.28%	20.30%
46	13.04%	7.30%	20.34%
47	13.07%	7.31%	20.38%
48	12.99%	7.27%	20.26%
49 & Over	12.70%	7.10%	19.80%

Interest:	7.00% per annum
COLA:	2.50%
Mortality:	See *Section 4, Exhibit 1*
Salary Increase:	Inflation (2.50%) + Across-the-Board Increase (0.50%) + Merit (See *Section 4, Exhibit 1*)
COLA Loading Factor:	55.94%

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

5704471v5/05325.002