



Santa Barbara County Employees' Retirement System

Actuarial Valuation Report as of June 30, 2020

Produced by Cheiron

February 2021

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February 24, 2021

Board of Retirement Santa Barbara County Employees' Retirement System 130 Robin Hill Road, Suite 100 Goleta, California 93117

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the Santa Barbara County Employees' Retirement System (SBCERS, the System, the Fund, the Plan) as of June 30, 2020. This report contains information on the System's assets and liabilities, and discloses employer and employee contribution levels. Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report.

The purpose of this report is to present the results of the annual actuarial valuation of SBCERS. This report is for the use of the Retirement Board of Santa Barbara and its auditors in preparing financial reports in accordance with applicable law and accounting requirements.

Cheiron's report was prepared solely for the Retirement Board of Santa Barbara for the purposes described herein, except that the plan auditor may rely on this report solely for the purpose of completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely, Cheiron

Anne D. Harper, FSA, MAAA, EA Principal Consulting Actuary

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

FOREWORD

Cheiron has performed the actuarial valuation of the Santa Barbara County Employees' Retirement System as of June 30, 2020. The valuation is organized as follows:

- In Section I, the **Executive Summary**, we describe the purpose of an actuarial valuation, summarize the key results found in this valuation and disclose important trends.
- The **Main Body** of the report presents details on the System's
 - Section II Disclosures Related to Risk
 - Section III Assets
 - Section IV Liabilities
 - Section V Contributions
 - o Section VI Comprehensive Annual Financial Reporting Information
- In the **Appendices**, we conclude our report with the following detailed information
 - Appendix A Membership Information
 - o Appendix B Member Contribution Rates
 - Appendix C Actuarial Assumptions and Methods
 - Appendix D Summary of Plan Provisions
 - o Appendix E Contribution Rates with Member Cost-Sharing Adjustment
 - Appendix F Glossary

Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience different from that anticipated by the assumptions; changes in assumptions; and, changes in plan provisions or applicable law.

Subsequent to the valuation date, the California State Supreme Court issued a decision that will affect benefits paid to some current and future retirees. The impact of this decision is not yet known, and therefore will be reflected in a future valuation report.

In preparing our report, we relied on information (some oral and some written) supplied by the SBCERS staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Cheiron utilizes ProVal, an actuarial valuation application leased from Winklevoss Technologies (WinTech), to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this report. The deterministic and stochastic projections shown in this report were developed using R-scan, our proprietary stochastic projection tool for assessing probabilities of different outcomes. We have relied on Cheiron colleagues who developed the tool, and we have used the tool in accordance with its purpose.



SECTION I – EXECUTIVE SUMMARY

The primary purpose of the actuarial valuation and this report is to measure, describe, and identify the following as of the valuation date:

- The funded status of the System,
- Past and expected trends in the funding progress of the System,
- Employer and employee contribution rates for Plan Year 2021-2022,
- Information required by the GFOA for the Comprehensive Annual Financial Report, and
- An assessment and disclosure of key risks.

The information required under GASB standards Nos. 67 and 68 is included in a separate report, with the report for the Plan's Fiscal Year Ending June 30, 2020 provided to SBCERS in November 2020.

In the balance of this Executive Summary, we present (A) the basis upon which this year's valuation was completed, (B) the key findings of this valuation including a summary of all key results, (C) an examination of the historical trends, and (D) the projected outlook for the System.

A. Valuation Basis

This valuation determines the employer contributions required for the employers' fiscal years beginning July 1, 2021.

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

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

The Unfunded Actuarial Liability payment is determined as the amount needed to fund the outstanding Unfunded Actuarial liability (UAL). Effective with the June 30, 2013 valuation, the UAL as of June 30, 2013 is amortized over a closed 17-year period (currently 10 years), except for the additional UAL attributable to the creation of Safety Plan 6, which is being amortized over a separate closed period (currently eight years).

Effective with the June 30, 2014 valuation, any new sources of UAL due to actuarial gains and losses, assumption changes, or method changes are amortized over a closed 19-year period, with a five-year ramp up and four-year ramp down of the amortization payment at the beginning and end of the amortization period and 10 years of level payments as a percentage of payroll between the ramping periods. The Board also adopted a policy to replace the smoothed Actuarial Value of Assets with the Market Value of Assets for valuation purposes. These amortization and funding policies in conjunction are a type of policy known as direct rate smoothing.

This valuation was prepared based on the plan provisions shown in Appendix D.



SECTION I – EXECUTIVE SUMMARY

Actuarial experience studies are performed every three years. This valuation was performed based on the economic and demographic assumptions and methods that were recommended in the Actuarial Experience Study performed by Cheiron as of June 30, 2019. The Board voted to maintain the economic assumptions on October 23, 2019. The demographic assumptions were adopted on December 11, 2019. A summary of the assumptions and methods used in the current valuation is shown in Appendix C.

B. Key Findings of this Valuation

The key results of the June 30, 2020 actuarial valuation are as follows:

- The actuarially determined employer contribution rate, net of employee cost-sharing, increased from 39.33% of payroll to 41.40% of payroll. The primary reasons for the rate increase are the expected phase-in of prior amortization bases under the direct rate smoothing (DRS) funding policy and the actuarial asset loss experienced in the current year. These changes were offset somewhat by the effect of payroll on the Unfunded Actuarial Liability (UAL) amortization payment rate and new members hired under PEPRA.
- Through collective bargaining agreements, certain members began making employer pick-up contributions starting September 10, 2018 with scheduled increases through November 16, 2020. The cost-sharing contributions are estimated to offset the net employer contribution rates by 2.11% for FYE 2021 and 1.96% for FYE 2022. The impact of cost-sharing will continue to gradually decline as legacy members retire or leave the System.
- The Board adopted a new assumption to value part-time members and members who are not part-time but worked less than 2,080 hours in the prior plan year. A load is applied to the part-time member benefits while salaries are annualized for members who are not part-time but work less than 2,080 hours most likely due to a short-term leave of absence. This assumption change increased the UAL by \$19.1 million and the employer contribution rate by 0.28% in the current valuation. This change will ultimately increase the employer contribution rate by 0.67% when the impact on the UAL payment is fully phased-in.
- The System's funded ratio, the ratio of Market Value of Assets over Actuarial Liability, decreased from 78.4% last year to 74.3% as of June 30, 2020.
- The UAL is the excess of the System's Actuarial Liability over the Market Value of Assets. The System experienced an increase in the UAL from \$882.5 million to \$1,103.8 million, an increase of \$221.3 million. Table I-3 on page five details the changes in UAL.
- During the plan year ending June 30, 2020, the return on Plan assets was 0.78% net of investment expenses and assuming mid-year cash flows as compared to the 7.00% assumption. This produced an actuarial asset loss of \$198.1 million.



SECTION I – EXECUTIVE SUMMARY

• The Actuarial Liability of the System increased more than expected. The experience losses were primarily due to larger COLA increases than expected for current retirees and inactive vested member losses. Some inactive members' data indicated that they established reciprocity with another employer which increased their projected benefits and liabilities since the projected final average compensation includes future assumed salary increases. Also, there were non-reciprocal inactives whose final average compensation increased from last year. Consequently, the System experienced a net loss on the Actuarial Liability of \$32.5 million, a 0.7% increase as a percentage of the expected Actuarial Liability.

Below and on the following pages, we present Tables I-1, I-2, and I-3 which summarize the key results of the valuation with respect to SBCERS assets, actuarial liabilities, Unfunded Actuarial Liability, funded ratios, contribution rates, and membership. The results are shown and compared for both the current and prior plan year.

Table I-1 Santa Barbara County Employees' Retirement System Summary of Key Valuation Results (in thousands)					
Valuation Date Fiscal Year End	Ju	ne 30, 2019 2021	Ju	ne 30, 2020 2022	Change
Actuarial Liability Market Value of Assets Unfunded Actuarial Liability (UAL)	\$ 	4,080,638 3,198,134 882,504		4,297,727 3,193,932 1,103,795	5.3% -0.1% 25.1%
Funding Ratio Employer Contribution Rate Estimated Impact of Employee Cost-Sharing Net Employer Contribution Rate		78.4% 41.44% -2.11% 39.33%		74.3% 43.36% -1.96% 41.40%	-4.1% 1.92% <u>0.15%</u> 2.07%

The key results shown in Table I-1 indicate that the Actuarial Liability increased by 5.3% and the Market Value of Assets decreased by 0.1%. As a result the funding ratio decreased from 78.4% to 74.3%, a decrease of 4.1%. Additionally, the Unfunded Actuarial Liability (UAL) increased by \$221.3 million or 25.1% as of June 30, 2020.

The net employer contribution rate increased 2.07% from 39.33% to 41.40% of payroll, with the estimated offset from employee cost-sharing decreasing by 0.15% as more legacy members retire or leave the System.



SECTION I – EXECUTIVE SUMMARY

Based on estimated fiscal year payroll of \$397.7 million, the estimated fiscal year 2021-22 employer contributions are \$164.6 million net of cost-sharing. Note that the estimated fiscal year payroll amount is based on projected payroll from the previous year's valuation dates (see Table I-2) rolled forward at the assumed payroll growth rate of 3.0% to the fiscal year in which the contribution rate applies.

As shown in Table I-2 below, membership in SBCERS increased by 2.2%. Active membership increased by 1.2%, inactives increased by 0.8%, and members receiving benefits increased by 3.5%. Total payroll increased by 4.1%, which is more than the assumed 3.0% increase. The average pay per active member increased by 2.8%.

Table I-2 Membership Total							
	J	une 30, 2019	J	une 30, 2020	% Change		
Actives		4,269		4,322	1.2%		
Terminated Members		1,598		1,611	0.8%		
Members Receiving Benefits		4,680		4,844	3.5%		
Total Members		10,547		10,777	2.2%		
Ratio of Inactives to Active Members		1.47		1.49			
Active Member Projected Payroll	\$	370,936,244	\$	386,136,668	4.1%		
Average Pay per Active	\$	86,891	\$	89,342	2.8%		

Projected payroll is based on valuation data projected for next fiscal year using a full year of salary increases.



SECTION I – EXECUTIVE SUMMARY

Table I-3 Change in Unfunded Actuarial Liabi (in thousands)	lity	
Unfunded Actuarial Liability, 6/30/2019	\$	882,504
Expected change in Unfunded Actuarial Liability	\$	(32,801)
Unfunded increase due to actuarial asset loss ¹		202,447
Unfunded increase due to liability loss		32,520
Unfunded increase due to assumption change		19,125
Total change in unfunded actuarial liability	\$	221,291
Unfunded Actuarial Liability, 6/30/2020	\$	1,103,795

¹ Includes net loss due to expenses being more than expected and contribution-timing lag.

The Unfunded Actuarial Liability (UAL) for SBCERS increased by \$221.3 million, from \$0.883 billion to \$1.104 billion. Table I-3 above presents the specific components of the change in the UAL.

The expected decrease in the UAL of \$32.8 million is the amount of expected employer and employee contributions in an excess of benefits expected to accrue for active members and interest on the UAL.

The actuarial asset loss, which in this exhibit includes losses due to expenses (\$1.2 million) and the contribution-timing lag (\$3.1 million), increased the UAL by \$202.4 million. The liability experience increased the UAL by \$32.5 million. Assumption changes increased the UAL by \$19.1 million.



SECTION I – EXECUTIVE SUMMARY

Employer Contributions Comparison

Thus far, the experience of the 2019-20 plan year has been presented in terms of the UAL and funded ratio. Table I-4 below compares the employer contribution rates and its components from the prior year to the current year. The employer contribution rate increased by 2.07% for the June 30, 2020 valuation (after the impact of the employee cost-sharing). A decrease of 0.44% in the employer normal cost, an increase of 2.36% in the amortization of the UAL, and a slight decrease in the employee cost-sharing of 0.15% - which increases the employer rate - comprise the total increase.

Table I-4 Contributions Rates by Components						
Valuation Year Effective for Fiscal Year End	2019 FYE 2021	2020 FYE 2022	Total Change			
Gross Normal Cost Employee Contributions Employer Normal Cost UAL Amortization Payment Employer Contribution Rate Estimated Impact of Employee Cost-Sharing Net Employer Contribution Rate	23.04% 7.00% 16.04% 25.40% 41.44% -2.11% 39.33%	22.84% 7.24% 15.60% 27.76% 43.36% -1.96% 41.40%	-0.20% <u>0.24%</u> -0.44% 2.36% 1.92% <u>0.15%</u> 2.07%			



SECTION I – EXECUTIVE SUMMARY

Table I-5 summarizes the change in the net employer contributions rate from the last valuation by source.

Table I-5 Employer Contribution Rate Reconciliation (After Cost-Sharing)							
	Normal Cost	UAL Payment	Total	Dollars			
FYE 2021 Employer Contribution Rate	13.93%	25.40%	39.33%	\$150.3 M			
Expected Changes							
DRS amortization phase-in	0.00%	1.40%	1.40%				
PEPRA new hires	-0.43%	0.00%	-0.43%				
Employee Cost-Sharing	0.15%	0.00%	0.15%				
Total Expected Change	-0.28%	1.40%	1.12%				
Expected FYE 2022 Employer Rate	13.65%	26.80%	40.45%	\$159.2 M			
Effect of payroll on UAL payments	0.00%	-0.45%	-0.45%				
Change due to actuarial asset loss	0.00%	1.03%	1.03%				
Demographic experience	-0.05%	0.14%	0.09%				
Assumption change (part-time load)	0.04%	0.24%	0.28%				
Total Unexpected Change	-0.01%	0.96%	0.95%				
FYE 2022 Employer Contribution Rate	13.64%	27.76%	41.40%	\$164.6 M			

A review of the changes in the employer contribution rate from the prior valuation shows that the FYE 2022 rate was expected to change by 1.12% and it also increased by another 0.95% due to unexpected changes in the Plan's assets and liabilities. The largest driver of the increase in the employer contribution rate is the phase-in of prior amortization bases under direct rate smoothing (DRS), 1.40% of payroll. See Table V-2 Development of Amortization Payment for details on each amortization layer. The other components of the contribution rate change are as follows:

- PEPRA members are now over 39% of active member payroll. The average employee contribution rate continues to increase since most PEPRA members have higher employee contribution rates than the retiring legacy members they replace. PEPRA benefits are also lower than the legacy members' benefits. The expected impact of the increasing number of PEPRA members was a 0.43% of pay decrease on the employer contribution rate.
- The impact of more PEPRA members also has the effect of a slight cost increase since they have not bargained any employee cost-sharing. Thus when legacy members, who have bargained the employee cost-sharing, retire and are replaced by PEPRA members, there are fewer cost-sharing contributions as a percentage of total Plan payroll. The cost-sharing decreased from 2.11% to 1.96%, which increased the net employer contribution rate by 0.15%.



SECTION I – EXECUTIVE SUMMARY

- Payroll used to amortize unfunded liabilities was higher than expected by about \$4.1 million. As a result, the UAL payments are spread over a larger payroll base than expected, and the employer contribution rate, as a percentage of payroll, decreased by 0.45%.
- Asset experience produced an investment loss that increased the contribution rate by 1.03% of pay. The assets of the Plan returned 0.78% (net of investment expenses), which is significantly less than the assumed rate of 7.00%. The impact of the current year loss will continue to be phased-in to the employer contribution rates over the next four years, as provided for under the Plan's funding policy.
- Demographic experience was slightly unfavorable for a net increase in cost of about 0.09% of pay. The demographic experience of the Plan includes retirement, death, disability, and termination experience, as well as other factors such as changes in benefit and pay amounts. As with the asset gain, the amortized portion of the demographic loss attributable to the change in the UAL will continue to be phased-in to the employer contribution rates over the next four years, as provided for under the Plan's funding policy.

The primary factor contributing to the demographic loss and resulting contribution increase was larger COLA increases than expected for current retirees. The assumed rate of COLA growth is 2.6% for members with a 3.0% COLA cap and 1.9% for members with a 2% COLA cap, while the actual COLA increases for FY19-20 were 3.0% and 2.0%, for the 3.0% and 2.0% capped groups, respectively, thus resulting in a loss on the liabilities.

• The "partial hours load" assumption increased the current year employer contribution rate by 0.28% of pay. The increase was 0.33% of pay for General members, an increase of 0.16% of pay for Safety members, and an increase of 0.03% of pay for APCD members. The ultimate increase in the total Plan contribution will be 0.67% when the UAL payment is fully phased-in over the next four years.



SECTION I – EXECUTIVE SUMMARY

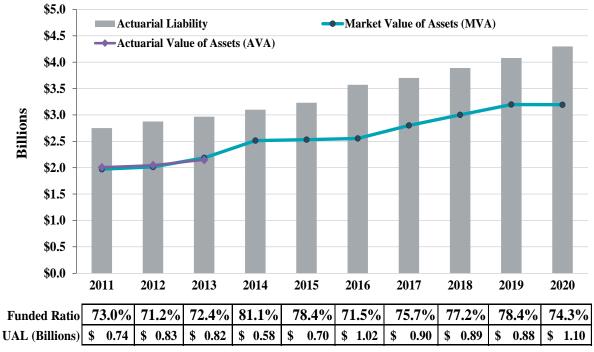
C. Historical Trends

Despite the fact that for most retirement plans the greatest attention is given to the current valuation results and in particular, the size of the current Unfunded Actuarial Liability and the employer contribution, it is important to remember that each valuation is merely a snapshot in the long-term progress of a pension fund. It is important to judge a current year's valuation result relative to historical trends, as well as trends expected into the future.

Assets and Liabilities

The chart below compares the Market Value of Assets (MVA) to the actuarial liabilities. The percentage shown in the table below the graph is the ratio of the Market Value of Assets to the Actuarial Liability (the funded ratio). The funded ratio decreased from 73.0% in 2011 to 72.4% in 2013, primarily as a result of phasing-in the asset losses in 2008-2009. The large increase in funded ratio in 2014, to 81.1%, was due to an asset gain and the switch to market value of assets from actuarial value of assets. The decrease in funded ratio, to 71.5%, in 2016 was primarily due to changes in the actuarial assumptions. The gradual increase in the funded ratio from 2016 to 2019, reaching 78.4%, was due to asset gains during the period as well as significant contributions. Finally, the decrease from 78.4% in 2019 to 74.3% in 2020 is primarily due to actuarial asset losses.

Assets and Liabilities



As of 2014, the market value of assets is used to calculate the unfunded actuarial liability and funded ratio.



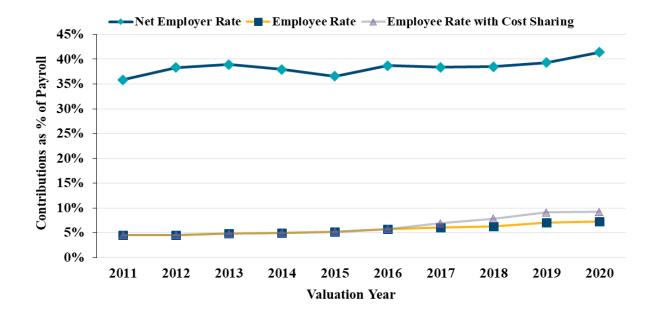
SECTION I – EXECUTIVE SUMMARY

Contribution Trends

In the chart below, we present the historical trends for the SBCERS contribution rates. The employer contribution rates have been relatively stable during this period ranging from 35% to 41%. The contribution rate increased slightly from 2011 to 2013 due to the poor investment returns being phased-in from 2008-2009. Then, the employer rate decreased due to favorable asset experience and an asset method change in 2013-2014 that eliminated the actuarial asset smoothing and recognized deferred asset gains immediately. In 2016, the assumption changes increased the employer contribution rate. Subsequently, employer rates have been relatively stable. The increase in contribution rate in 2020 is driven mostly by phasing-in of the 2016 assumption changes and asset loss, which are both fully phased-in as of the June 30, 2020 valuation, and current year actuarial asset losses.

The average employee contribution rates were relatively stable from 2010 to 2016, increasing slightly as the Plan's economic assumptions have changed. Average employee contributions rates have continued to increase since 2017 as more new PEPRA members were hired and cost-sharing contributions for legacy members have been bargained.

Historical Contribution Rates





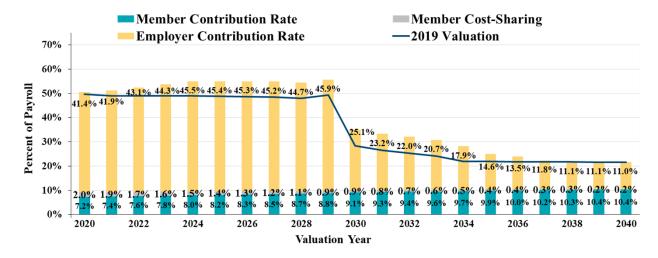
SECTION I – EXECUTIVE SUMMARY

D. Future Expected Financial Trends

The analysis of projected financial trends is an important component of this valuation. All the projections in this section are based on the current investment return assumption of 7.00%. We have assumed future payroll increases of 3.00% per year. The projections also assume that all other actuarial assumptions are met each year.

Projection of Contributions

The following graph shows the expected employer contribution rate – including the impact of expected offsets for additional employee cost-sharing contributions – based on achieving the 7.00% assumption **each year** for the next 20 years. This scenario is highly unlikely; even if the Plan does achieve an **average** return of 7.00% over this period, the returns in each given year will certainly vary.



The employer contribution rate after cost-sharing is approximately 41.4% of member payroll for the June 30, 2020 valuation. The employer rate gradually increases over the next four years to about 45.5% in 2024 due to phasing-in the current year's asset losses. The employer rate remains at approximately the same level for the next several years. The rate does slightly decrease in 2029 when a large asset gain from 2014 begins to phase-out. After 2029, the total contribution rate is expected to drop significantly, when the remaining unfunded liability as of June 30, 2013 is fully paid off. After that point, employer contribution rates gradually decline as the 2016 assumption changes and asset losses from several years are phased-out.

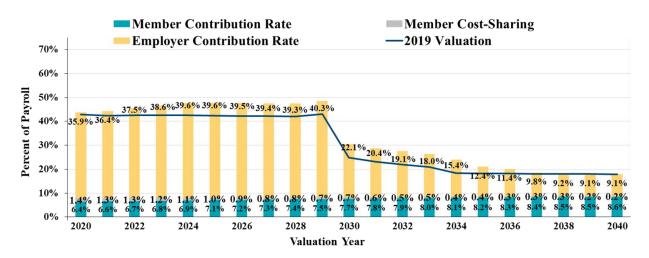
There is a moderate decline projected in the employer normal cost rates, primarily due to the PEPRA members becoming a larger proportion of the active member population over time. PEPRA benefits are lower than the legacy plan benefits and PEPRA employee contribution rates are greater on average than for the legacy plans, since PEPRA members pay 50% of the normal cost rate. However, the employee cost-sharing contributions, bargained for the legacy members only, are projected to decrease as legacy plan members retire.



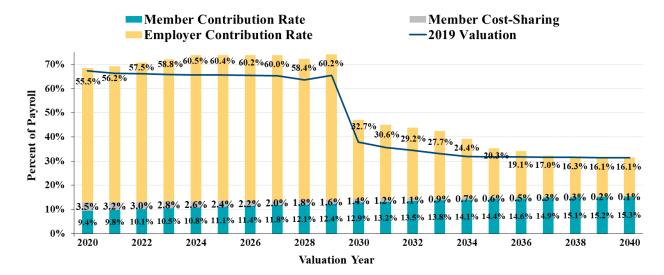
SECTION I – EXECUTIVE SUMMARY

The employer contribution rate projections are shown below and on the next page for each cost group: General, Safety, and APCD. All have similar patterns while the magnitude of contribution increases and decreases varies by group.

General Member Group



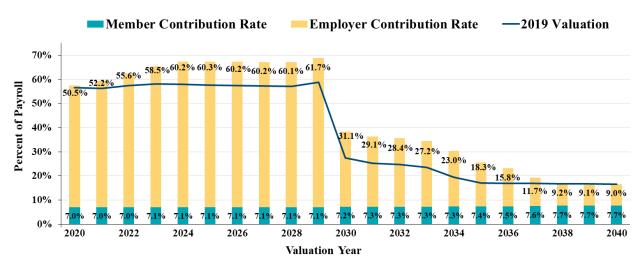
Safety Member Group





SECTION I – EXECUTIVE SUMMARY

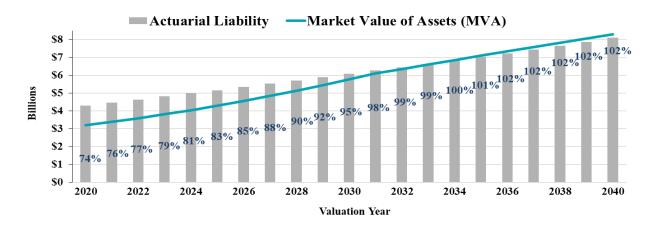
APCD Member Group



Please note that is no employee cost-sharing for the APCD members.

Asset and Liability Projections:

In this section, we present our assessment of the implications of the June 30, 2020 valuation results in terms of benefit security (assets over liabilities). The following graph shows the projection of assets and liabilities assuming that assets will earn the 7.00% assumption each year during the projection period. The percentages along the graph represent the funded ratio or status of the System.



The projected funded ratio increases over the next 15 years and reaches 100% in 2034 assuming that all actuarial assumptions are achieved each year.

However, as above, it is the **actual** return on System assets that will determine the future funding status and contribution rate to the Fund.



SECTION II – DISCLOSURES RELATED TO RISK

Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience, but actual future experience will undoubtedly be different and may be vary significantly. This section of the report is intended to identify the primary risks to the Plan, provide some background information about those risks, and provide an assessment of those risks.

Identification of Risks

The fundamental risk to a pension plan is that the contributions needed to pay the benefits become unaffordable. This is most likely to occur when the contributions needed to support the plan differ significantly from expectations. While there are a number of factors that could lead to contribution amounts deviating from expectations, we believe the primary risks are:

- Investment risk,
- Assumption change risk, and
- Contribution risk.

Other risks that we have not identified may also turn out to be important.

Investment Risk is the potential for investment returns to be different from expected. Lower investment returns than anticipated will increase the Unfunded Actuarial Liability necessitating higher contributions in the future unless there are other gains that offset these investment losses. The potential volatility of future investment returns is determined by the Plan's asset allocation and the affordability of the investment risk is determined by the amount of assets invested relative to the size of the plan sponsor or other contribution base.

Assumption change risk is the potential for the environment to change such that future valuation assumptions are different from the current assumptions. For example, declines in interest rates over the last three decades resulted in higher investment returns for fixed income investments, but lower expected future returns necessitating either a change in investment policy, a reduction in discount rate, or some combination of the two. Assumption change risk is an extension of the other risks identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in environment when the current assumption is no longer reasonable.

Contribution risk is the potential for actual future contributions to deviate from expected future contributions. There are different sources of contribution risk such as the sponsor choosing to not make contributions in accordance with the funding policy. As another example, the contribution requirement might become a financial strain on the sponsor because of material changes in the contribution base (e.g., covered employees, covered payroll) that affects the amount of contributions the plan can collect.



SECTION II – DISCLOSURES RELATED TO RISK

The chart below shows the components contributing to the Unfunded Actuarial Liability (UAL) from June 30, 2010 through June 30, 2020. Over the last 10 years, the UAL has increased by approximately \$415 million. The investment losses (gold bar) of \$576 million on the Actuarial Value of Assets (AVA) and assumptions changes (purple bar) resulting in a total UAL increase of \$169 million are the primary sources in the UAL growth. The net liability gains (gray bar) of \$102 million, asset method change of \$132 million, and contributions in excess of the "tread water" level (red bar, defined later in this section) by \$95 million have decreased the UAL since June 30, 2010.

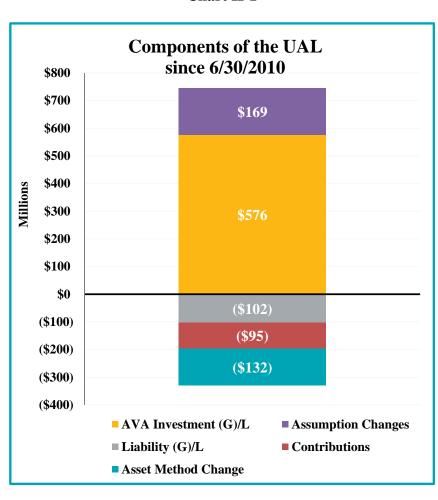


Chart II-1



SECTION II – DISCLOSURES RELATED TO RISK

Chart II-2 below details the annual sources of the UAL change (colored bars) for the plan years ending June 30. The net UAL change for the year is represented by the blue diamonds.

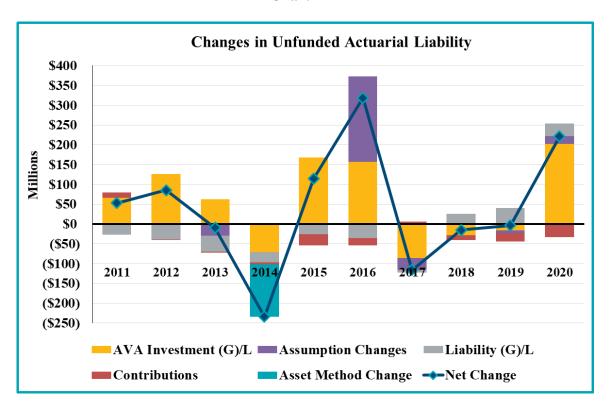


Chart II-2

The Board approved a change in the asset smoothing method effective with the June 30, 2014 actuarial valuation to eliminate the five-year smoothing of investment gains and losses when determining the funded ratio and calculating employer contribution rates. As of June 30, 2014, there were \$132 million in deferred asset gains that were immediately recognized when the Actuarial Value of Assets became the Market Value of Assets.

On a market value and an actuarial value basis, the average annual geometric return over the 10-year period is 7.3% and 4.8% respectively. Actuarial losses were greater than the gains over the period, primarily due to the market performance in FYE 2012, 2015, 2016 and 2020 with actual returns between 0.8% - 1.80%, well below the assumed rate of return.

Over the same period, the assumed rate of return decreased from 7.75% to 7.00%. It is important to note that these changes simply reflect a downward revision to the estimate of future investment earnings and ultimately costs will be determined by actual investment earnings. Based on our 2019 Actuarial Experience study, RVK's capital market assumptions and the Plan's asset allocation, the expected average annual return is about 6.15% compared to the Plan's current assumption of 7.00%. Other investment consultants' capital market expectations – including those included in the survey performed by Horizon Actuarial Services – are more optimistic and result in an average expected return of approximately 7.0%. Future expectations



SECTION II – DISCLOSURES RELATED TO RISK

of investment returns may continue to decline necessitating further reductions in the discount rate.

The impact of all assumption changes is represented by the purple bars and also includes decreases in mortality rates and longevity improvements projected in the future, which had a significant impact on the measurement of the UAL. The assumption changes effective with the July 1, 2019 and July 1, 2020 valuations are only demographic changes with no change to the expected rate of return of 7.00%.

Each year the UAL is expected to increase for benefits earned in the current year (the normal cost) and interest on the UAL. This expected increase is referred to as the tread water level. If contributions are greater than the tread water level, the UAL is expected to decrease. Conversely, if contributions are less than the tread water level, the UAL is expected to increase. The amortization policy (as well as the contribution-timing lag) can affect whether or not the contributions exceed the tread water level. For example, the Board changed the amortization policy in 2013 to amortize the UAL over a closed 17-year period instead of a rolling period. Prior to this amortization policy change, contributions were below the tread water level and the UAL increased by about \$10 million as a result. However, contributions in excess of the tread water level have paid down the UAL by about \$105 million during the seven-year period after the policy change.

Table II-1

	Unfunded Actuarial Liability (UAL) Change by Source						
June 30,	Investment Experience	Liability Experience	Assumption and Method Changes	Contributions	Total UAL Change		
2011	\$66,600,000	(\$27,100,000)	\$0	\$13,536,000	\$53,036,000		
2012	125,800,000	(39,300,000)	0	(712,000)	85,788,000		
2013	62,682,000	(40,274,000)	(29,264,000)	(2,758,000)	(9,614,000)		
2014	(71,742,000)	(24,833,000)	$(132,340,000)^{-1}$	(4,829,000)	(233,744,000)		
2015	167,682,000	(25,874,000)	0	(27,587,000)	114,221,000		
2016	156,742,000	(35,903,000)	215,838,000	(18,022,000)	318,655,000		
2017	(86,209,000)	(6,600,000)	(29,684,000)	6,223,000	(116,270,000)		
2018	(28,015,000)	25,400,000	0	(12,265,000)	(14,880,000)		
2019	(15,690,000)	40,071,000	(7,455,000)	(20,530,000)	(3,604,000)		
2020	198,108,000	32,520,000	19,125,000	(28,461,000)	221,292,000		
Total	\$575,958,000	(\$101,893,000)	\$36,220,000	(\$95,405,000)	\$414,880,000		

¹ Asset Method Change from Actuarial Value to Market Value



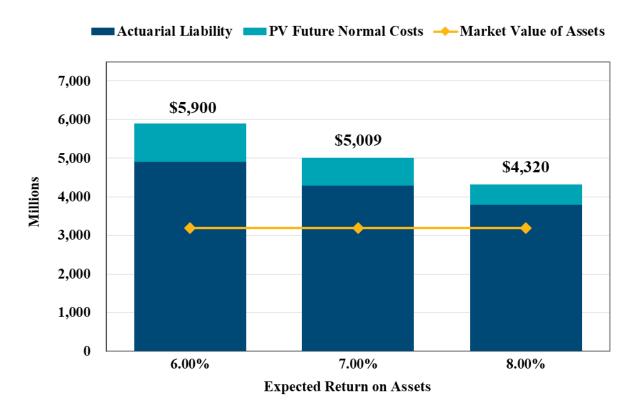
SECTION II – DISCLOSURES RELATED TO RISK

Assessing Costs and Risks

Sensitivity to Investment Returns

The chart below compares assets to the present value of all projected future benefits discounted at the current expected rate of return and at investment returns 100 basis points above and below the expected rate of return. The present value of future benefits is shown as a bar with the portion attributable to past service in dark blue (Actuarial Liability) and the portion attributable to future service in teal (Present Value of Future Normal Costs). The gold line shows the Market Value of Assets.

Present Value of Future Benefits versus Assets



If investments return 7.00% annually, the Plan would need approximately \$5.0 billion in assets today to pay all projected benefits compared to current assets of \$3.2 billion. If investment returns are only 6.00%, the Plan would need approximately \$5.9 billion in assets today, and if investment returns are 8.00%, the Plan would need approximately \$4.3 billion in assets today.

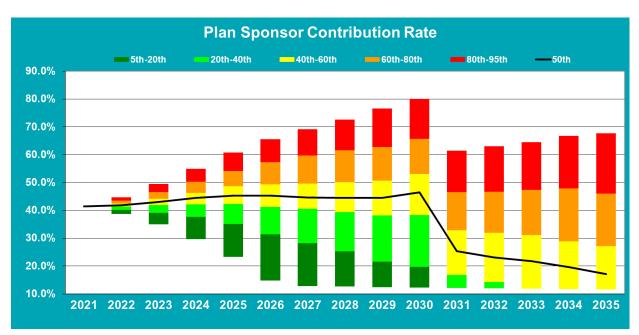


SECTION II – DISCLOSURES RELATED TO RISK

Sensitivity to Investment Returns – Stochastic Projections

Stochastic projections serve to show the range of probable outcomes of various measurements. The graphs on this and the following page show the projected range of the employer contribution rate and of the funded ratio (i.e., the market assets divided by liabilities). The range in both scenarios is driven by the volatility of investment returns (assumed to be based on a 12.2% standard deviation of annual returns, as provided by the Plan's investment consultant). The stochastic projections of investment returns are based on an assumption that each future year's investment return is independent from all other years and is identically distributed according to a lognormal distribution. This assumption may result in an unrealistically wide range of compound investment returns over longer periods of time.

Stochastic Projection of Employer Contributions as a Percent of Pay

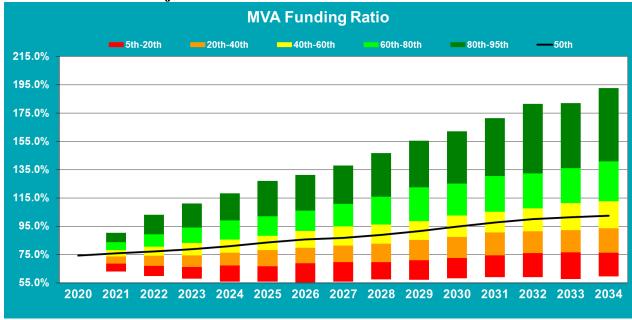


The stochastic projection of employer contributions as a percent of pay shows the probable range of future contribution rates. The baseline contribution rate (black line), which assumes actual investment returns will equal the expected returns of 7.00% each year, aligns with the projections discussed in subsection D of the Executive Summary of this report. In the most pessimistic scenario shown, the 95th percentile, the projected employer contribution rate is approximately 80% of pay in 2030. Conversely, in the most optimistic scenario shown, the 5th percentile, the projected employer contribution rate declines to about 12% in 2035 (the minimum allowed under law, since PEPRA requires that employers contribute an amount at least equal to their share of the normal cost, unless the plan becomes "super" funded).



SECTION II – DISCLOSURES RELATED TO RISK





The graph above shows the projection of the funded ratio based on the market value of assets. While the median funded ratio (black line) is projected to be approximately 102% at the end of the 15-year period shown here, there is a wide range of potential outcomes. Good investment returns have the likelihood of bringing the funded ratio well over 100%. Due to the sound funding policy of the Plan, even in scenarios with significant unfavorable investment returns, the Plan is projected to remain over 55% funded, as long as the actuarially determined contributions continue to be made.

Contribution Risk

If contribution rates become a significant percentage of payroll, future salary increases and the hiring of new members are potentially at risk. When member payroll growth stagnates or even declines, the dollar level of contributions made to the Plan also stagnates or declines since contributions are based on payroll levels.

There is also a risk of the contribution rates increasing when payroll decreases since the Plan's funding policy amortizes the UAL as a level percentage of pay. This means that the UAL payments are designed to increase at the assumed payroll growth rate of 3.00%, so that the payment is expected to remain constant as a percentage of payroll. If payroll growth is less than the expected 3.00% or there is a decline in payroll, the UAL payments are spread over a smaller payroll base and the contribution rate as a percentage of pay increases, potentially making the Plan less affordable. This risk is particularly relevant for the APCD, as declines in payroll have already resulted in their UAL payment as a percentage of payroll reaching 75% of their total employer contribution rate.



SECTION II – DISCLOSURES RELATED TO RISK

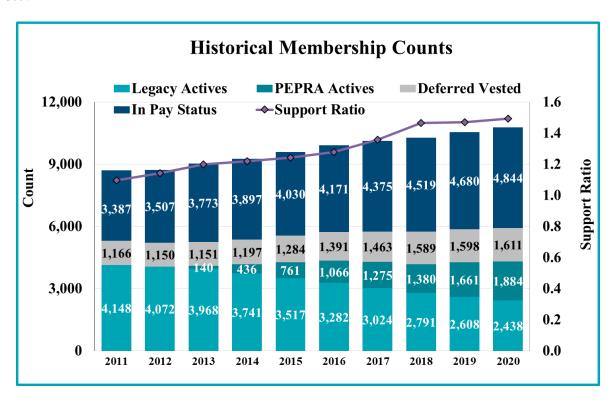
Plan Maturity Measures

The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. To assess each of these risks, it is important to understand the maturity of the plan and how it has changed over time.

Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic – the larger the plan is compared to the contribution or revenue base that supports it; the more sensitive the plan will be to risk. The measures below have been selected as the most important in understanding the primary risks identified for the plan.

Inactives per Active (Support Ratio)

One simple measure of plan maturity is the ratio of the number of inactive members (those receiving benefits or inactives – those entitled to a deferred benefit) to the number of active members. The Support Ratio is expected to increase gradually as a plan matures. The chart below shows the growth in the Support Ratio from 2011 to 2020 as the number of active members has remained relatively consistent, while the number of inactives has increased by over 40%.



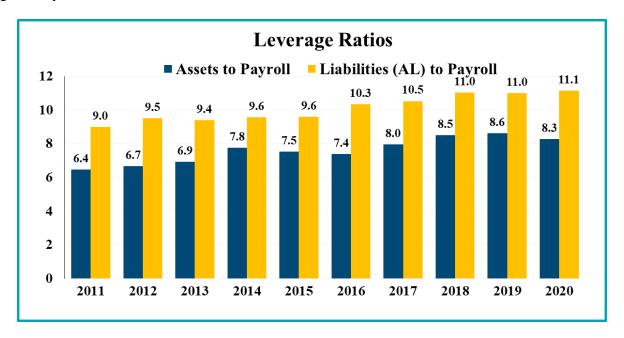


SECTION II – DISCLOSURES RELATED TO RISK

Leverage Ratios

Leverage or volatility ratios measure the size of the plan compared to its revenue base more directly. The asset leverage ratio is simply the Market Value of Assets divided by active member payroll and indicates the sensitivity of the Plan to investment returns. The liability leverage ratio is the ratio of plan's Actuarial Liability to active member payroll and indicates the sensitivity of the Plan to assumption changes or demographic experience.

The chart below shows the historical leverage ratios of the Plan. Both leverage ratios have gradually increased since 2011.



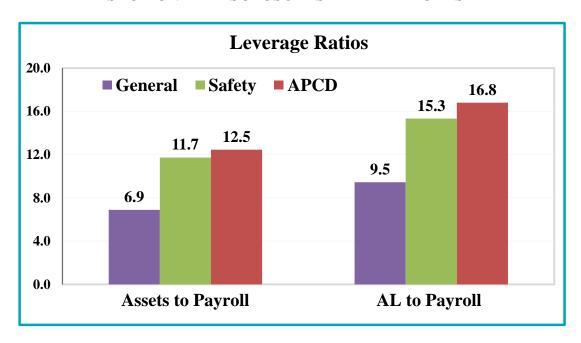
To appreciate the impact of the ratio of assets to payroll on plan cost, consider the situation for a new plan with almost no assets. Even if the assets suffer a bad year of investment returns, the impact on the plan cost is nil, because the asset level is so small.

As the Plan becomes better funded, the asset leverage ratio will increase, and if it was 100% funded, the asset leverage ratio would be 11.1 times payroll, or the Actuarial Liability (AL) leverage ratio.

We note that the ratio of both assets and liabilities to payroll, and therefore the sensitivity to investment returns, is higher for the Safety and APCD members compared to the General members. The Safety members have higher leverage ratios because of the higher benefit amounts and the earlier average retirement ages than General. The APCD members have the highest leverage ratios mainly because their support ratio – inactives to actives – is significantly higher (2.8 compared to 1.5 for both General and Safety), and thus their payroll base is much smaller relative to their asset reserves and liabilities.



SECTION II – DISCLOSURES RELATED TO RISK



The General asset leverage ratio of 6.9 means that if the Plan's assets lose 10% of their value, which is a 17.00% actuarial loss compared to the expected return of 7.00%, the loss would be equivalent to 117% of payroll (17.00% times 6.9). Based on the current amortization policy and economic assumptions, the General contribution rate would ultimately increase by about 11% of payroll.

The same investment loss for the Safety group with an asset ratio of 11.7 would be equivalent to just under 199% of payroll, or an approximate contribution rate increase of almost 19% of pay. Lastly, the same investment loss for the APCD group with an asset ratio of 12.5 would be equivalent to just under 213% of payroll, or an approximate contribution rate increase of 20%. Therefore, the contribution rates for the Safety and APCD members will generally be much more volatile than those of the General members.

More Detailed Assessment

While a more detailed assessment is always valuable to enhance the understanding of the risks identified above, we believe the scenarios illustrated above cover the primary risks facing the Plan at this time. We would be happy to provide the Board with a more in-depth analysis at their request.



SECTION III – ASSETS

Pension plan assets play a key role in the financial operation of the System and in the decisions the Board may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely affect employer contributions and the ultimate security of participants' benefits.

In this section, we present detailed information on System assets including:

- **Disclosure** of System assets as of June 30, 2019 and June 30, 2020,
- Statement of the **changes** in market values during the year,
- An allocation of the assets by **reserve balances**,
- An assessment of historical investment performance versus inflation, and
- An allocation of the assets between the **valuation subgroups**.

Disclosure

Only the Market Value of Assets is relevant for this actuarial valuation. It represents a snapshot value, which provides the principal basis for measuring financial performance from one year to the next.

As of June 30, 2014, a smoothed Actuarial Value of Assets is no longer used in the calculations of the Unfunded Actuarial Liability or funded status due to the implementation of the funding policy adopted by the Board in September 2014. This policy change was made in conjunction with the new 19-year layered amortization with phase-in of any unexpected changes in the Unfunded Actuarial Liability starting with the June 30, 2014 valuation.

Table III-1 on the next page discloses and compares the asset values as of June 30, 2019 and June 30, 2020.



SECTION III – ASSETS

Table III-1								
Statement of Assets at Market Value								
Assets:	June 30, 2019		June 30, 2020					
Cash and Cash Equivalents \$	11,718,158	\$	15,984,536					
Prepaid Expenses	3,146,682		3,298,092					
Receivables:								
Contributions Receivable	5,938,004		7 712 072					
Other	41,575		7,713,972 111,135					
Accrued Interest	3,237,621		3,218,852					
Dividends	2,627,044		2,557,603					
Security Sales	42,359,649		6,339,274					
Total Receivables	54,203,894		19,940,836					
Investments, at Market Value:								
Short Term Investments	49,528,412		69,751,807					
Alternative/Private Equity	309,551,968		347,032,449					
Domestic Equity	663,236,246		628,892,487					
Domestic Bonds	478,302,061		518,596,229					
International Equity	325,951,903		312,907,959					
Emerging Market Equity	256,480,480		227,498,647					
International Bonds/Non-Core Fixed Income	291,205,270		266,379,299					
Private Credit	0		58,900,886					
Real Estate	297,276,440		310,592,388					
Real Assets/Real Return	512,180,154		436,914,522					
Total Investments	3,183,712,934		3,177,466,674					
Other Assets:								
Collateral Held for Securities Lent	(16,043,154)		15,387,113					
Total Assets	3,236,738,514		3,232,077,252					
Liabilities:								
Accounts Payable	529,876		629,178					
Benefits Payable	12,504,289		13,657,628					
Collateral Held for Securities Lent	(16,043,154)		15,387,113					
Investment Manager Fees	41		41					
Security Purchases	41,613,406		8,471,327					
Total Liabilities	38,604,459		38,145,287					
Market Value of Assets \$	3,198,134,055	\$	3,193,931,965					



SECTION III – ASSETS

Changes in Market Value

The components of asset change are:

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

Table III-2 below shows the components of change in the Market Value of Assets during the fiscal years ending June 30, 2019 and June 30, 2020.

Table III-2 Changes in Market Values					
		Fiscal Year ending]	Fiscal Year ending	
Additions		June 30, 2019		June 30, 2020	
Contributions					
Employer's Contribution	\$	133,707,646	\$	141,584,585	
Members' Contributions		26,604,850	_	31,618,487	
Total Contributions		160,312,495		173,203,072	
Net Investment Income					
Net Appreciation/(Depreciation) in					
Fair Value of Investments		197,721,121		859,117	
Interest		16,413,048		15,352,433	
Dividends		21,783,167		20,654,362	
Investment Expense		(11,636,698)		(12,501,364)	
Net Investment Income		224,280,637	-	24,364,548	
Securities Lending Income					
Securities Lent Income		677,151		377,004	
Securities Lent Expense		(319,473)	_	(175,010)	
Net Securities Lending Income		357,678	_	201,994	
Miscellaneous Income					
Net Miscellaneous Income		204,637		198,110	
Total Additions	\$	385,155,447	\$	197,967,724	



SECTION III – ASSETS

Table III-2 Changes in Market Values (Continued)					
		Fiscal Year ending June 30, 2019		Fiscal Year ending <u>June 30, 2020</u>	
<u>Deductions</u>					
Benefit payments	\$	180,527,571	\$	193,809,561	
Refunds of Members' Contributions		1,728,207		1,837,035	
Total Benefit Payments		182,255,779		195,646,596	
Administrative & Other Expenses					
General Administrative Expenses		6,093,279		5,987,114	
Actuary Fees		96,198		212,428	
Fund Legal Fees		594,647		323,676	
Total Administrative & Other		6,784,124		6,523,218	
Expenses					
Total Deductions		189,039,903		202,169,814	
Net increase (Decrease)		196,115,545		(4,202,090)	
Net Assets Held in Trust for Pension I	Benefi	ts			
Beginning of Year		3,002,018,510		3,198,134,055	
End of Year	\$	3,198,134,055	\$	3,193,931,965	
Expected Return	\$	209,152,842	\$	222,872,695	
Actual Return	\$	224,842,952	\$	24,764,652	
Actuarial Gain/(Loss)	¥ -	15,690,111	Ψ.	(198,108,043)	
Expected Return		7.00%		7.00%	
Approximate Return		7.53%		0.78%	



SECTION III – ASSETS

Allocation of Reserve Balances

The following table shows the allocation of the assets among the various accounting reserves.

A new Interest Crediting and Undesignated Earnings Policy was established on August 25, 2010. In accordance with that policy, the Market Stabilization Account is based on the difference between the Market Value of Assets and the Actuarial Value of Assets. The Market Stabilization Account is zero under the current funding policy. The Contra Tracking Account was established with that policy. In effect, that account is the difference between the Actuarial Value of Assets, now equal to the Market Value of Assets, and the sum of the first three reserves in Table III-3, as long as that account is negative.

Table III-3 Allocation of Assets by Accounting Reserve Amounts for the Years Ended June 30, 2019 and June 30, 2020				
		FYE 2019		FYE 2020
Member Deposit Reserve	\$	217,069,722	\$	230,742,947
County and District Advance Reserve		1,226,580,441		1,291,078,052
Retired Member Reserve		2,610,065,022		2,784,605,670
Transferred Funds Reserve		205,017,072		219,619,413
	\$	4,053,715,185	\$	4,306,426,669
New Market Stabilization Reserve		0		0
Contra Tracking Account		(855,581,129)		(1,115,294,233)
Total Reserves	\$	3,198,134,055	\$	3,191,132,436



SECTION III – ASSETS

Historical Investment Performance

The following table shows the historical annual asset returns on a market value basis, as well as the change in the Consumer Price Index (CPI) since 1994.

Table III-4 Net Return on Assets vs. Increase in Consumer Price Index						
Year Ended June	Net Return at Market Value	Increase in Consumer Price Index ¹				
2001	-4.3%	3.2%				
2002	-5.4%	1.1%				
2003	4.6%	2.1%				
2004	15.7%	3.3%				
2005	9.9%	2.5%				
2006	10.6%	4.3%				
2007	16.6%	2.7%				
2008	-7.2%	5.0%				
2009	-19.20%	-1.4%				
2010	13.40%	1.1%				
2011	21.10%	3.6%				
2012	1.80%	1.7%				
2013	8.10%	1.8%				
2014	15.00%	2.1%				
2015	0.83%	0.1%				
2016	1.30%	1.0%				
2017	10.39%	1.6%				
2018	8.00%	2.9%				
2019	7.53%	1.6%				
2020	0.78%	0.6%				
Geometric Averag	e					
5-Year	5.5%	1.0%				
10-Year	7.3%	1.4%				
20-Year	5.0%	1.9%				

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



SECTION III – ASSETS

Allocation of Assets by Valuation Subgroup

The following table shows the allocation of the Market Value of Assets between the three valuation subgroups (General, Safety, and APCD). The assets are allocated to each subgroup based on their share of the Valuation Reserves maintained by SBCERS. The Market Value of Asset is used to calculate each subgroups' UAL and the resulting amortization payment.

Table III-5 Allocation of Assets by Subgroup for June 30, 2020 (in thousands)												
		General		Safety		APCD			Total			
1.	Member Deposit Reserve	\$	175,015	\$	55,584	\$	144	\$	230,743			
2.	County and District Advance Reserve		835,536		446,748		8,794		1,291,078			
3.	Retired Member Reserve		1,561,944		1,176,794		45,867		2,784,606			
4.	Transferred Funds Reserve		113,587	_	103,726		2,306		219,619			
5.	Total Valuation Reserves $(1 + 2 + 3)$	\$	2,572,494	\$	1,679,127	\$	54,806	\$	4,306,427			
6.	Percentage of Line 5, by Plan		59.7%		39.0%		1.3%		100.0%			
7.	Market Value of Assets								3,193,932			
8.	Allocated Market Value of Assets	\$	1,907,933	\$	1,245,352	\$	40,647	\$	3,193,932			



SECTION IV – LIABILITIES

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

- **Disclosure** of System liabilities at June 30, 2019 and June 30, 2020,
- Statement of **changes** in these liabilities during the year.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them. Note that these liabilities are not appropriate for settlement purposes, including the purchase of annuities and the payment of lump sums.

- **Present Value of Future Benefits:** Used for measuring all future System obligations; the obligations of the System earned as of the valuation date and those to be earned in the future by current plan participants, under the current System provisions.
- Actuarial Liability: Used for funding calculations, this liability is calculated taking the Present Value of Future Benefits and subtracting the present value of future Member Contributions and future Employer Normal Costs under an acceptable actuarial funding method. The method used for this System is called the Entry Age Normal (EAN) funding method.
- **Unfunded Actuarial Liability:** The excess of the Actuarial Liability over the Market Value of Assets.

Table IV-1 on the following page discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of Plan assets yields, for each respective type, a **net surplus**, or an **Unfunded Actuarial Liability**.



SECTION IV – LIABILITIES

Table IV-1 Present Value of Future Benefits and Actuarial Liability (in thousands)												
	General		Safety			APCD		June 30, 2020 Total		June 30, 2019 Total		
Present Value of Future Benefits		General		Safety		Arcb		Total		1 otal		
Actives	\$	1,389,152	\$	829,433	\$	15,833	\$	2,234,418	\$	2,141,170		
Terminated Vested	Ψ	1,367,132	φ	32,557	φ	3,998	φ	164,304	φ	160,480		
Retirees		1,377,448		869,804		37,834		2,285,086		2,144,487		
				· · · · · · · · · · · · · · · · · · ·		•						
Disabled		49,790		116,578		2.405		166,368		155,839		
Beneficiaries	φ.	78,763	Φ.	77,338	ф.	2,495	Φ.	158,596	Φ.	149,429		
Total SBCERS	\$	3,022,901	\$	1,925,710	\$	60,160	\$	5,008,771	\$	4,751,405		
Actuarial Liability												
Total Present Value of Benefits	\$	3,022,901	\$	1,925,710	\$	60,160	\$	5,008,771	\$	4,751,405		
Present Value of Future Normal Costs		,		, ,		,		, ,		, ,		
Employer Portion		262,361		201,598		3,221		467,180		450,800		
Employee Portion		145,338		96,408		2,117		243,863		219,967		
Actuarial Liability	\$	2,615,202	\$	1,627,704	\$	54,822	\$	4,297,728	\$	4,080,638		
·												
Market Value of Assets	\$	1,907,933	\$	1,245,352	\$	40,647	\$	3,193,932	\$	3,198,134		
Funded Ratio	73.0%			76.5% 74.1		74.1%	74.3%		78.4%			
Unfunded Actuarial Liability/(Surplus)	\$	707,269	\$	382,352	\$	14,175	\$	1,103,796	\$	882,504		



SECTION IV – LIABILITIES

Changes in Liabilities

Each of the liabilities disclosed in the prior tables are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- Plan amendments increasing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above, and also due to changes in System assets resulting from:

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



SECTION IV – LIABILITIES

	Table IV-2 Development of 2020 Experience Gain/(Loss) (in thousands)	
		Cost
1.	Unfunded Actuarial Liability (UAL) at June 30, 2019	\$ 882,504
2.	Middle of year actuarial liability payment	(91,431)
3.	Interest to end of year on 1 and 2	58,629
4.	Assumption Changes	 19,125
5.	Expected UAL at June 30, 2020 (1+2+3+4)	\$ 868,827
6.	Actual Unfunded Liability at June 30, 2020	 1,103,79 <u>5</u>
7.	Net Gain/(Loss): (5 - 6)	\$ (234,968)
8.	Portion of net gain/(loss) due to:	
	a. Investment experience loss	\$ (198,108)
	b. Inactive mortality gain	1,879
	c. Salary increases more than expected	(1,854)
	d. Retiree COLAs more than expected	(10,882)
	e. Retirement, termination and disability experience loss	(5,624)
	f. Inactive and terminated vested member loss	(5,370)
	g. New entrant loss	(2,778)
	h. Contribution timing lag	(3,075)
	i. Administrative expenses more than expected	(1,265)
	j. Other experience	 (7,891)
	k. Total gain/(loss)	\$ (234,968)



SECTION V – CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the System. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this System, the actuarial funding method used to determine the normal cost and the Unfunded Actuarial Liability is the **Entry Age Normal (EAN)** cost method. There are three primary components to the total contribution: the **normal cost rate** (employee and employer), the **Unfunded Actuarial Liability rate** (UAL rate), and **assumed administrative expenses**. Administrative expenses are split between employees and employers based on their share of the overall contributions.

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

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

The Unfunded Actuarial Liability (UAL) is the difference between the EAN Actuarial Liability and the Market Value of Assets. The Unfunded Actuarial Liability payment is determined as the amount needed to fund the outstanding Unfunded Actuarial Liability resulting from the creation of Safety Plan 6 over eight remaining years and the outstanding Unfunded Actuarial Liability as of June 30, 2013 over a closed period with ten years remaining, both as a level percentage of pay. Any subsequent unexpected change in the Unfunded Actuarial Liability after June 30, 2013 is amortized over 19 years that includes a five-year phase-in/out of the payments/credits for each annual layer.

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



SECTION V – CONTRIBUTIONS

Table V-1 Development of the Net Employer Contribution Rate as of June 30, 2020 for FYE 2022 June 30, 2020 June 30, 2019 General **Safety COMPOSITE COMPOSITE APCD** 1. Total Normal Cost Rate 19.08% 32.71% 18.96% 23.04% 22.84% 2. Member Contribution Rate 9.43% 6.39% 7.04% 7.24% 7.00% 3. Employer Normal Cost Rate (1-2) 12.69% 23.28% 11.92% 15.60% 16.04% 4. UAL Amortization 24.59% 35.74% 38.53% 27.76% 25.40% 5. Employer Contribution Rate (3+4) 37.28% 59.02% 50.45% 43.36% 41.44% 6. Estimated Impact of Employee Cost-Sharing -1.37% -3.53% 0.00% -1.96% -2.11% 7. Net Employer Contribution Rate (5+6) 35.91% 55.49% 41.40% 39.33% 50.45% Projected Payroll for FYE 2021 \$ 276,678,945 \$ 106,195,435 \$ 3,262,288 \$ 386,136,668 370,936,244

Beginning with the June 30, 2013 valuation, the Member and Employer Contribution Rates have been explicitly loaded by 3% to account for anticipated administrative expenses.



SECTION V – CONTRIBUTIONS

The table below presents the calculation of the UAL payments of the System as a dollar amount and as a percentage of pay under the amortization policy. The total UAL payment of the System is 27.76% as a percentage of pay, which is not the sum of the individual amortization bases, since the Safety Plan 6 UAL of 5.23% is paid only for members under Safety Plan 6. Once the (Gain)/Loss and Assumption bases are fully phased-in, the UAL payment from these sources will be 32.60% of pay.

If the UAL payment below of \$104,231,009 were calculated based on a single-equivalent period with the June 30, 2020 UAL of \$1,103,795,392, the number of years to fully pay off the unfunded liability would be 14 years.

Table V-2 Development of Amortization Payment For the June 30, 2020 Actuarial Valuation													
Type of Base	Date Established 6/30/2011	\$	Initial Amount 12,800,000	Initial Amortization Years 17	June 30, 2020 Outstanding Balance \$ 10,699,715	Remaining Amortization Years 8	Current Phase-In Percentage N/A	A \$	Amount 1,574,829	% of Pay 5.23%	% of Pay After Phase-In ² 5.23%		
2. Remaining UAL	6/30/2013		803,940,900	17	667,499,157	10	N/A		81,471,326	21.71%	21.71%		
3. (Gain)/Loss Base	6/30/2014		(227,291,825)	19	(231,533,717)	13	100%		(26,224,784)	-6.99%	-6.99%		
4. (Gain)/Loss Base	6/30/2015		137,382,857	19	144,984,156	14	100%		15,317,114	4.08%	4.08%		
5. (Gain)/Loss Base	6/30/2016		117,812,662	19	127,924,386	15	100%		12,692,943	3.38%	3.38%		
6. Assumption Changes	6/30/2016		215,838,077	19	234,363,209	15	100%		23,254,040	6.20%	6.20%		
7. (Gain)/Loss Base	6/30/2017		(83,693,202)	19	(91,701,811)	16	80%		(7,003,470)	-1.87%	-2.33%		
8. Assumption Change	6/30/2017		(29,683,810)	19	(32,524,257)	16	80%		(2,483,949)	-0.66%	-0.83%		
9. (Gain)/Loss Base	6/30/2018		869,981	19	942,115	17	60%		53,010	0.01%	0.02%		
10. (Gain)/Loss Base	6/30/2019		25,594,711	19	26,879,474	18	40%		1,009,413	0.27%	0.67%		
11. Assumption Change	6/30/2019		(7,455,037)	19	(7,829,253)	18	40%		(294,014)	-0.08%	-0.20%		
12. (Gain)/Loss Base	6/30/2020		234,967,694	19	234,967,694	19	20%		4,498,416	1.20%	5.99%		
13. Assumption Change	6/30/2020		19,124,525	19	19,124,525	19	20%		366,136	0.10%	0.49%		
Total					\$ 1,103,795,392			\$	104,231,009	27.76%	32.60%		

¹ Original amortization base for increase in benefits established in 6/30/2007 with a 15-year period. In 2011, the outstanding balance was re-amortized over a closed 17-year period.



funcludes explicit administrative expense load. Safety Plan 6 Base is shown as a percentage of the Safety Plan 6 payroll only.

SECTION V – CONTRIBUTIONS

The tables below present the calculation of the UAL payments of the System as a dollar amount and as a percentage of pay under the amortization policy, broken out by group.

	Table V-2(a) General Development of Amortization Payment For the June 30, 2020 Actuarial Valuation													
	Type of Base	Date Established	Initial Amortization Years	June 30, 2020 Outstanding Balance	Remaining Amortization Years	Current Phase-In Percentage	Aı	mortization Amount	% of Pay¹	% of Pay After Phase-In¹				
1.	Remaining UAL	6/30/2013	17	416,066,677	10	N/A		50,782,841	18.89%	18.89%				
2.	(Gain)/Loss Base	6/30/2014	19	(134,533,473)	13	100%		(15,238,002)	-5.67%	-5.67%				
3.	(Gain)/Loss Base	6/30/2015	19	91,782,396	14	100%		9,696,518	3.61%	3.61%				
4.	(Gain)/Loss Base	6/30/2016	19	80,455,910	15	100%		7,983,015	2.97%	2.97%				
5.	Assumption Changes	6/30/2016	19	151,296,521	15	100%		15,011,978	5.58%	5.58%				
6.	(Gain)/Loss Base	6/30/2017	19	(57,196,121)	16	80%		(4,368,194)	-1.62%	-2.03%				
7.	Assumption Change	6/30/2017	19	(20,398,989)	16	80%		(1,557,916)	-0.58%	-0.72%				
8.	(Gain)/Loss Base	6/30/2018	19	(4,894,722)	17	60%		(275,411)	-0.10%	-0.17%				
9.	(Gain)/Loss Base	6/30/2019	19	11,397,519	18	40%		428,014	0.16%	0.40%				
10.	Assumption Change	6/30/2019	19	18,962,623	18	40%		712,109	0.26%	0.66%				
11.	(Gain)/Loss Base	6/30/2020	19	140,137,728	19	20%		2,682,913	1.00%	4.99%				
12.	Assumption Change	6/30/2020	19	14,193,469	19	20%		271,732	0.10%	<u>0.51%</u>				
	Total			\$ 707,269,537			\$	66,129,596	24.59%	29.01%				

¹ Includes explicit administrative expense load.



SECTION V – CONTRIBUTIONS

Table V-2(b) Safety Development of Amortization Payment For the June 30, 2020 Actuarial Valuation

			For	the June 30, 202	O Actuarial Val	uation				
	Type of Base	Date Established	Initial Amortization Years	June 30, 2020 Outstanding Balance	Remaining Amortization Years	Current Phase-In Percentage	A	amortization Amount	% of Pay ²	% of Pay After Phase-In²
1.	Safety Plan 6 Base ¹	6/30/2011	17	\$ 10,699,715	8	N/A	\$	1,574,829	5.23%	5.23%
2.	Remaining UAL	6/30/2013	17	243,232,634	10	N/A		29,687,656	28.77%	28.77%
3.	(Gain)/Loss Base	6/30/2014	19	(94,377,596)	13	100%		(10,689,726)	-10.36%	-10.36%
4.	(Gain)/Loss Base	6/30/2015	19	51,099,936	14	100%		5,398,546	5.23%	5.23%
5.	(Gain)/Loss Base	6/30/2016	19	47,287,699	15	100%		4,691,991	4.55%	4.55%
6.	Assumption Changes	6/30/2016	19	80,261,747	15	100%		7,963,749	7.72%	7.72%
7.	(Gain)/Loss Base	6/30/2017	19	(32,456,642)	16	80%		(2,478,786)	-2.40%	-3.00%
8.	Assumption Change	6/30/2017	19	(11,734,532)	16	80%		(896,192)	-0.87%	-1.09%
9.	(Gain)/Loss Base	6/30/2018	19	4,957,537	17	60%		278,945	0.27%	0.45%
10.	(Gain)/Loss Base	6/30/2019	19	13,886,933	18	40%		521,500	0.51%	1.26%
11.	Assumption Change	6/30/2019	19	(27,323,347)	18	40%		(1,026,082)	-0.99%	-2.49%
12.	(Gain)/Loss Base	6/30/2020	19	91,971,733	19	20%		1,760,783	1.71%	8.53%
13.	Assumption Change	6/30/2020	19	4,846,089	19	20%		92,778	0.09%	0.45%
	Total			\$ 382,351,905			\$	36,879,991	35.74%	41.55%

¹ Original amortization base for increase in benefits established in 6/30/2007 with a 15-year period. In 2011, the outstanding balance was re-amortized over a closed 17-year period.



² Includes explicit administrative expense load. Safety Plan 6 Base is shown as a percentage of the Safety Plan 6 payroll only.

SECTION V – CONTRIBUTIONS

Table V-2(c) APCD Development of Amortization Payment For the June 30, 2020 Actuarial Valuation

	Type of Base	Date Established	Initial Amortization Years	June 30, 2020 Outstanding Balance	Remaining Amortization Years	Current Phase-In Percentage		tization ount	% of Pay ¹	% of Pay After Phase-In¹
1.	Remaining UAL	6/30/2013	17	8,199,846	10	N/A	1	1,000,829	31.57%	31.57%
2.	(Gain)/Loss Base	6/30/2014	19	(2,622,648)	13	100%		(297,056)	-9.37%	-9.37%
3.	(Gain)/Loss Base	6/30/2015	19	2,101,824	14	100%		222,051	7.00%	7.00%
4.	(Gain)/Loss Base	6/30/2016	19	180,777	15	100%		17,937	0.57%	0.57%
5.	Assumption Changes	6/30/2016	19	2,804,942	15	100%		278,313	8.78%	8.78%
6.	(Gain)/Loss Base	6/30/2017	19	(2,049,048)	16	80%		(156,490)	-4.94%	-6.17%
7.	Assumption Change	6/30/2017	19	(390,736)	16	80%		(29,841)	-0.94%	-1.18%
8.	(Gain)/Loss Base	6/30/2018	19	879,301	17	60%		49,476	1.56%	2.60%
9.	(Gain)/Loss Base	6/30/2019	19	1,595,022	18	40%		59,898	1.89%	4.72%
10.	Assumption Change	6/30/2019	19	531,471	18	40%		19,958	0.63%	1.57%
11.	(Gain)/Loss Base	6/30/2020	19	2,858,233	19	20%		54,720	1.73%	8.63%
12.	Assumption Change	6/30/2020	19	84,967	19	20%		1,627	0.05%	<u>0.26%</u>
	Total			\$ 14,173,950			\$ 1	1,221,422	38.53%	48.98%

¹ Includes explicit administrative expense load.



SECTION V – CONTRIBUTIONS

As discussed earlier, a portion of the UAL attributable to the implementation of Safety Plan 6 is being amortized over a separate period from the rest of UAL. Beginning with the 2011 actuarial valuation, the outstanding balance of the Safety Plan 6 UAL is being amortized over a closed 17-year period; eight years are now remaining. The amortization payment for this separate base is applied only to the payroll of the Safety Plan 6 members.

Since the Safety Plan 6 is a closed group, its payroll has been declining over the last several years and the extra amortization payment rate as a percentage of payroll has been increasing. It will continue to increase in future years since the Plan 6 payroll is expected to continue to decrease while the amortization payment amount will increase with assumed wage growth of 3.00%.

Table V-3 below contains the details of the calculations of the Safety UAL rates for the Plan 6 members.

Table V-3 Development of Safety UAL Amortization	Rate	es
June 30, 2020 Plan 6 Layer	\$	10,699,715
8-year amortization factor		0.147184
Safety Plan 6 payroll	\$	30,981,636
Middle of year payment		1,574,829
Extra Plan 6 UAL Amortization Rate		5.08%
- including Administrative Expense Load		5.23%
Safety UAL less Extra Plan 6	\$	371,652,190
Middle of year payment		35,305,162
Total Safety Payroll		106,195,435
UAL Rate without Extra Plan 6		33.25%
- including Administrative Expense Load		34.21%
UAL Rate - Plan 6 including Admin Expense Load		39.44%



SECTION V – CONTRIBUTIONS

Tables V-4 through V-7 show the calculations of the employer contribution rates for each group and tier, as well as a comparison to the prior year rates.

Development of the Gene	ral	Net Empl	OVE	Table V		on Rate a	s of	7 June 30	202	0 for FVI	र १ ।	022			
Development of the Gene	1 41	Tiet Empi	oy c	a contra	, uu	on rate a	J UL	ounc 50,	-0-			PEP	R A	1	
		5A		5B		5C]	Plan 2	1	Plan 7	2%	6 COLA	3 %	6 COLA	Total
Current Year															
A. Basic Employer Normal Cost Rate		10.18%		9.29%		11.52%		3.60%		12.18%		6.96%		7.49%	9.23%
B. COLA Normal Cost Rate		4.51%		5.45%		4.94%		0.00%		3.36%		1.40%		2.14%	3.46%
C. Employer Normal Cost Rate		14.69%		14.74%		16.46%		3.60%		15.54%		8.36%		9.63%	12.69%
D. Basic UAL Contribution Rate		17.12%		17.12%		17.12%		17.12%		17.12%		17.12%		17.12%	17.12%
E. COLA UAL Contribution Rate		7.47%		7.47%		7.47%		7.47%		7.47%		7.47%		7.47%	7.47%
F. UAL Contribution Rate		24.59%		24.59%		24.59%		24.59%		24.59%		24.59%		24.59%	24.59%
G. Total June 30, 2020 Contribution Rate (C+F)		39.28%		39.33%		41.05%		28.19%		40.13%		32.95%		34.22%	37.28%
Projected Payroll for FYE 2021 (in thousands)	\$	29,412	\$	37,810	\$	83,797	\$	446	\$	11,060	\$	107,681	\$	6,473	\$ 276,679
Prior Year															
A. Basic Employer Normal Cost Rate		10.23%		9.29%		11.56%		3.63%		12.44%		7.01%		7.26%	9.46%
B. COLA Normal Cost Rate		<u>4.51%</u>		<u>5.45%</u>		<u>4.95%</u>		0.00%		3.44%		1.41%		2.08%	3.62%
C. Employer Normal Cost Rate		14.74%		14.74%		16.51%		3.63%		15.88%		8.42%		9.34%	13.09%
D. Basic UAL Contribution Rate		15.63%		15.63%		15.63%		15.63%		15.63%		15.63%		15.63%	15.63%
E. COLA UAL Contribution Rate		6.69%		6.69%		6.69%		6.69%		6.69%		6.69%		6.69%	6.69%
F. UAL Contribution Rate		22.32%		22.32%		22.32%		22.32%		22.32%		22.32%		22.32%	22.32%
G. Total June 30, 2019 Contribution Rate (C+F)		37.06%		37.06%		38.83%		25.95%		38.20%		30.74%		31.66%	35.41%
Projected Payroll for FYE 2020 (in thousands)	\$	33,042	\$	36,920	\$	88,182	\$	497	\$	10,770	\$	91,886	\$	5,650	\$ 266,947



SECTION V – CONTRIBUTIONS

Development of the Safety Net		Table V-5 bution Rate as of June 30, 2020 for FYE 2022							
Development of the barety feet	4A		4B	Lau	4C	6A	6B	PEPRA	Total
Current Year									
A. Basic Employer Normal Cost Rate	18.61%		18.38%		17.57%	20.71%	19.38%	11.20%	15.97%
B. COLA Normal Cost Rate	<u>8.81%</u>		10.70%		<u>8.61%</u>	9.19%	9.64%	<u>3.94%</u>	<u>7.31%</u>
C. Employer Normal Cost Rate	27.42%		29.08%		26.18%	29.90%	29.02%	15.14%	23.28%
D. Basic UAL Contribution Rate	22.29%		22.29%		22.29%	25.70%	25.70%	22.29%	23.30%
E. COLA UAL Contribution Rate	<u>11.92%</u>		<u>11.92%</u>		11.92%	<u>13.74%</u>	13.74%	<u>11.92%</u>	<u>12.44%</u>
F. UAL Contribution Rate	34.21%		34.21%		34.21%	39.44%	39.44%	34.21%	35.74%
G. Total June 30, 2020 Contribution Rate (C+F)	61.63%		63.29%		60.39%	69.34%	68.46%	49.35%	59.02%
Projected Payroll for FYE 2021 (in thousands)	\$ 4,365	\$	1,622	\$	32,783 \$	3,622 \$	27,359	\$ 36,444	\$ 106,195
Prior Year									
A. Basic Employer Normal Cost Rate	18.48%		17.45%		17.46%	21.15%	19.36%	11.18%	16.32%
B. COLA Normal Cost Rate	<u>8.77%</u>		10.12%		<u>8.57%</u>	<u>9.19%</u>	<u>9.61%</u>	<u>3.95%</u>	<u>7.53%</u>
C. Employer Normal Cost Rate	27.25%		27.57%		26.03%	30.34%	28.97%	15.13%	23.85%
D. Basic UAL Contribution Rate	20.76%		20.76%		20.76%	23.96%	23.96%	20.76%	21.79%
E. COLA UAL Contribution Rate	10.87%		<u>10.87%</u>		10.87%	<u>12.55%</u>	12.55%	10.87%	<u>11.40%</u>
F. UAL Contribution Rate	31.63%		31.63%		31.63%	36.51%	36.51%	31.63%	33.19%
G. Total June 30, 2019 Contribution Rate (C+F)	58.88%		59.20%		57.66%	66.85%	65.48%	46.76%	57.04%
Projected Payroll for FYE 2020 (in thousands)	\$ 4,363	\$	1,813	\$	32,745 \$	4,879 \$	27,405	\$ 29,727	\$ 100,932



SECTION V – CONTRIBUTIONS

Please note the addition of Plan 7 APCD members in the current year contribution rates. These members were included with General Plan 7 in previous valuations.

Table V-6 Development of the APCD Net Employer Contribution Rate as of June 30, 2020 for FYE 2022											
Development of the APCD Net Employer		ribution . Plan 1		e as of Jun Plan 2), 2020 101 Plan 7		PEPRA		Total	
Current Year											
A. Basic Employer Normal Cost Rate		10.36%		8.06%		12.18%		5.98%		8.39%	
B. COLA Normal Cost Rate		4.72%		<u>5.53%</u>		3.36%		1.26%		3.53%	
C. Employer Normal Cost Rate		15.08%		13.59%		15.54%		7.24%		11.92%	
D. Basic UAL Contribution Rate		26.58%		26.58%		26.58%		26.58%		26.58%	
E. COLA UAL Contribution Rate		11.95%		<u>11.95%</u>		<u>11.95%</u>		<u>11.95%</u>		<u>11.95%</u>	
F. UAL Contribution Rate		38.53%		38.53%		38.53%		38.53%		38.53%	
G. Total June 30, 2020 Contribution Rate (C+F)		53.61%		52.12%		54.07%		45.77%		50.45%	
Projected Payroll for FYE 2021 (in thousands)	\$	471	\$	1,110	\$	405	\$	1,276	\$	3,262	
Prior Year											
A. Basic Employer Normal Cost Rate		10.83%		8.23%				6.01%		8.10%	
B. COLA Normal Cost Rate		<u>4.95%</u>		<u>5.56%</u>				1.27%		3.84%	
C. Employer Normal Cost Rate		15.78%		13.79%				7.28%		11.94%	
D. Basic UAL Contribution Rate		24.87%		24.87%				24.87%		24.87%	
E. COLA UAL Contribution Rate		10.76%		<u>10.76%</u>				10.76%		<u>10.76%</u>	
F. UAL Contribution Rate		35.63%		35.63%				35.63%		35.63%	
G. Total June 30, 2019 Contribution Rate (C+F)		51.41%		49.42%				42.91%		47.57%	
Projected Payroll for FYE 2020 (in thousands)	\$	825	\$	1,123			\$	1,110	\$	3,057	



SECTION V – CONTRIBUTIONS

Table V-7 Development of the PEPRA Member and Net Employer Contribution Rates as of June 30, 2020 for FYE 2022

General 2% COLA 3% COLA Safety APCD Current Year **Basic Member Contribution Rate** 7.49% 11.20% 5.97% 6.96% **COLA Member Contribution Rate** 1.40% 2.14% 3.94% 1.26% **Member Contribution Rate** 9.63% 7.23% 8.36% 15.14% 7.49% 11.20% 5.98% Basic Employer Normal Cost Rate 6.96% **COLA Employer Normal Cost Rate** 1.40% 2.14% 3.94% 1.26% **Employer Normal Cost Rate** 8.36% 9.63% 15.14% 7.24% **Basic UAL Contribution Rate** 17.12% 17.12% 22.29% 26.58% COLA UAL Contribution Rate 7.47% 7.47% 11.92% 11.95% **Employer UAL Contribution Rate** 24.59% 24.59% 34.21% 38.53% **Employer Contribution Rate** 45.77% 32.95% 34.22% 49.35% **Prior Year Basic Member Contribution Rate** 7.26% 6.00% 7.02% 11.19% **COLA Member Contribution Rate** 1.41% 2.08% 3.95% 1.27% **Member Contribution Rate** 8.43% 9.34% 15.14% 7.27% Basic Employer Normal Cost Rate 7.01% 7.26% 11.18% 6.01% **COLA Employer Normal Cost Rate** 1.41% 2.08% 3.95% 1.27% **Employer Normal Cost Rate** 8.42% 9.34% 15.13% 7.28% **Basic UAL Contribution Rate** 24.87% 15.63% 15.63% 20.76% COLA UAL Contribution Rate 6.69% 6.69% 10.87% 10.76% **Employer UAL Contribution Rate** 31.63% 22.32% 22.32% 35.63% 31.66% 42.91% **Employer Contribution Rate** 30.74% 46.76%



SECTION VI – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION

The GASB adopted Statement Nos. 67 and 68, which replaced GASB Statement Nos. 25 and 27. GASB 67 became effective June 30, 2014 for the Plan and GASB 68 became effective for the fiscal year ending June 30, 2015 for the Employers. The disclosures needed to satisfy the GASB requirements can be found in the SBCERS GASB 67/68 Report as of June 30, 2020.

In accordance with Government Finance Officers Association (GFOA) and their recommended checklist for Comprehensive Annual Financial Reports, the Schedule of Funded Liabilities by Type (formerly known as the Solvency Test), Actuarial Analysis of Financial Experience, and the Schedule of Funding Progress disclosures are included below.

	Table VI-1											
		SCHEDU	JLE OF FUNDE	ED LIABILITI	ES BY TYP	E						
			(dollars i	n thousands)								
	(A)	(B)	(C)									
Valuation	Active	Retirees	Remaining Active			Portion of Actu Liabilities Cove						
Date	Member	And	Members'	Reported		by Reported As						
June 30,	Contributions	Beneficiaries	Liabilities	Assets ¹	(A)	(B)	(C)					
2020	\$ 230,743	\$ 2,774,353	\$ 1,292,632	\$ 3,193,932	100%	100%	15%					
2019	217,070	2,610,235	1,253,333	3,198,134	100%	100%	30%					
2018	203,168	2,463,993	1,220,966	3,002,019	100%	100%	27%					
2017	187,084	2,295,926	1,219,287	2,801,307	100%	100%	26%					
2016	183,954	2,142,873	1,244,971	2,554,539	100%	100%	18%					
2015	178,233	1,926,975	1,125,926	2,532,529	100%	100%	38%					
2014	174,958	1,822,654	1,100,403	2,513,630	100%	100%	47%					
2013	171,614	1,747,430	1,049,090	2,150,006	100%	100%	22%					
2012^{-2}	165,623	1,660,773	1,047,987	2,046,641	100%	100%	21%					
2011	165,774	1,559,716	1,024,324	2,007,859	100%	100%	28%					

¹ Actuarial Value of Assets. As of June 30 2014, the Actuarial Value of Assets is the Market Value of Assets.

The Schedule of Funded Liabilities by Type shows the portion of actuarial liabilities for active member contributions, inactive members, and the employer-financed portion of the active members that are covered by the Actuarial Value of Assets. As of June 30, 2016, the assumed rate of investment return is 7.00%. As of June 30, 2013, the assumed rate of investment return was reduced from 7.75% to 7.50%.



² June 30, 2012 and earlier numbers calculated by prior actuary.

SECTION VI – COMPREHENSIVE ANNUAL FINANCIAL REPORTING INFORMATION

Table VI-2 ACTUARIAL ANALYSIS OF FINANCIAL EXPERIEN (dollars in thousands)	CE	
Unfunded Actuarial Liability (UAL) as of June 30, 2019	\$	882,504
Expected Change in UAL Assumption Changes		(32,801) 19,125
Actuarial (Gains) or Losses During the Year		
Asset Return (Greater) or Less than Expected	\$	198,108
New Entrants		2,778
Salary Increases Greater or (Less) than Expected		1,854
All Other (Including Demographic Experience)		32,227
Total Changes	\$	221,291
Unfunded Actuarial Liability (UAL) as of June 30, 2020	\$	1,103,795

	Table VI-3 Schedule of Funding Progress ¹												
			lollars in thousands										
Actuarial Valuation Date	Actuarial Value of Assets ²	Actuarial Liability (AL)	Unfunded AL	Funded Ratio	Covered Payroll	Unfunded AL as a % of Covered Payroll							
June 30, 2020	\$ 3,193,932	\$ 4,297,728	\$ 1,103,796	74.3%	\$ 386,137	285.9%							
June 30, 2019	3,198,134	4,080,639	882,505	78.4%	370,936	237.9%							
June 30, 2018	3,002,019	3,888,126	886,107	77.2%	353,016	251.0%							
June 30, 2017	2,801,307	3,702,297	900,990	75.7%	351,829	256.1%							
June 30, 2016	2,554,539	3,356,333	801,794	76.1%	346,975	231.1%							
June 30, 2015	2,532,529	3,231,134	698,605	78.4%	336,982	207.3%							
June 30, 2014	2,513,630	3,098,014	584,384	81.1%	323,831	180.5%							
June 30, 2013	2,150,006	2,968,134	818,128	72.4%	316,177	258.8%							
June 30, 2012	2,046,641	2,874,383	827,742	71.2%	302,114	274.0%							
June 30, 2011	2,007,859	2,749,814	741,955	73.0%	305,758	242.7%							

Amounts for June 30, 2012 and earlier were calculated by the prior actuary



²As of June 30, 2014 the Actuarial Value of Assets is the Market Value of Assets

APPENDIX A – MEMBERSHIP INFORMATION

The data for this valuation was provided by the System staff as of June 30, 2020. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

SBCERS' Membership

As of June 30, 2019 and 2020	2019	2020
Members Now Receiving Benefits		
Service Retirement	3,815	3,959
Disability Retirement	271	281
Beneficiaries and Survivors	594	604
Subtotal	4,680	4,844
Active Members		
Active Vested Members	2,983	3,033
Active Nonvested Members	1,286	1,289
Subtotal	4,269	4,322
Deferred Vested and Inactive Members	1,598	1,611
Total Membership	10,547	10,777

Schedule of Average Benefit Payments											
	Years in Pay Status										
June 30, 2020	0-9	10-14	15-19	20-24	25-29	30+					
Average Monthly Benefit	\$3,625	\$3,753	\$3,392	\$3,059	\$2,592	\$2,356					
Average Annual Benefit	43,500	45,036	40,704	36,708	31,104	28,272					
Number of Members in Pay Status	2,331	993	671	408	213	228					



APPENDIX A – MEMBERSHIP INFORMATION

Schedule of Active Member Valuation Data

Valuation Date	Plan	Active Members	Aı	ınual Salary ¹	Average ¹	% Increase in Average Salary
June 30, 2020	General	3,327	\$	268,092,934	\$ 80,581	4.11%
	Safety	962		101,475,166	105,484	3.73%
	APCD	33		3,116,418	94,437	3.58%
	Total	4,322	\$	372,684,519	86,230	4.05%

¹Based on salary data provided in the June 30, 2020 valuation data for FYE 2020.



APPENDIX A – MEMBERSHIP INFORMATION

Schedule of Retirees & Beneficiaries Added to and Removed from Retirement Payroll Added to rolls **Removed from rolls** Rolls at end of year % Increase in Average Annual **Annual Annual** Retiree **Annual** Allowance¹ **Fiscal Year** Number Number Allowance Number Allowance **Allowance** Allowance 2011 -123 5.0% 192 \$ 5,922,775 2,942,348 3,387 \$ 110,219,174 32,542 2012 226 \$ 9,082,861 -106 2,884,973 3,507 \$ 118,545,000 7.6% \$ 33,802 2013 364² \$ 8,811,248 -98 1,787,108 3,773 \$ 126,691,263 6.9% \$ 33,578 2014 203 \$ 6,842,058 -79 2,112,523 3,897 \$ 132,766,493 4.8% \$ 34,069 241 9.044,486 -108 2,627,746 4.030 \$ 141,193,001 6.3% \$ 35,016 2015 2016 244 \$ 9,705,939 -103 2,534,190 4,171 \$ 149,683,889 6.0% \$ 35,886 \$ 162,510,138 2017 314 13,124,187 -110 3,255,813 4,375 8.6% 37,146 2018 3,280,607 \$ 174,765,068 270 10,896,350 -126 4,519 7.5% 38,673 2019 294 12,466,673 -133 4,484,686 4,680 \$ 187,679,334 7.4% \$ 40,102 2020 11,952,403 -105 3,671,844 4,844 \$ 201,478,012 7.4% 41,593 269



Annual allowance added during the year does not include COLAs granted in year to continuing retirees and beneficiaries.

² Includes 119 new records for members with benefits in more than one plan. Previously these members had only one record that accounted for their total benefit.

APPENDIX A – MEMBERSHIP INFORMATION

SBCERS	SBCERS Membership - Active Members as of June 30, 2020											
Group	Count	Annual Salary ¹	Average Age	Average Monthly Salary ¹	Average Vesting Service							
General Members												
Plan 2	6	\$431,000	60.2	\$5,986	30.2							
Plan 5A	328	\$28,437,000	56.7	\$7,225	28.0							
Plan 5B	305	\$36,461,000	50.2	\$9,962	16.4							
Plan 5C	1,090	\$80,829,000	49.3	\$6,180	16.3							
Plan 7	107	\$10,629,000	44.3	\$8,278	11.7							
PEPRA	<u>1,491</u>	\$111,305,000	38.9	\$6,221	3.3							
Total	3,327	\$268,093,000	45.3	\$6,715	11.5							
APCD Members												
Plan 1	5	\$456,000	57.8	\$7,600	30.6							
Plan 2	9	\$1,068,000	44.0	\$9,889	12.0							
Plan 7	3	\$391,000	43.0	\$10,861	15.7							
PEPRA	<u>16</u>	<u>\$1,202,000</u>	33.0	\$6,260	3.1							
Total	33	\$3,117,000	40.7	\$7,870	10.8							
Safety Members												
Plan 4A	30	\$4,205,000	53.1	\$11,681	22.8							
Plan 4B	11	\$1,560,000	50.7	\$11,818	22.2							
Plan 4C	280	\$31,553,000	45.3	\$9,391	16.9							
Plan 6A	24	\$3,491,000	53.9	\$12,122	29.6							
Plan 6B	240	\$26,330,000	44.6	\$9,142	16.2							
PEPRA	<u>377</u>	<u>\$34,336,000</u>	33.8	\$7,590	3.4							
Total	962	\$101,475,000	41.1	\$8,790	12.0							
Total Actives	4,322	\$372,685,000	44.3	\$7,186	11.6							

¹Based on salary data provided in the June 30, 2020 valuation data for FYE 2020.



APPENDIX A – MEMBERSHIP INFORMATION

SBCERS Membership - Schedule of Active Member Valuation Data

Valuation Date	Plan	Count	Annual Salary ¹	Average Annual Salary ¹	Increase in Average Salary
June 30, 2014	General	3,226	\$221,733,000	\$68,733	0.14%
ŕ	APCD	41	3,335,000	\$81,341	4.60%
	Safety	<u>910</u>	83,659,000	\$91,933	2.60%
	Total	4,177	\$308,727,000	\$73,911	0.77%
June 30, 2015	General	3,307	\$231,757,487	\$70,081	1.96%
	APCD	40	3,079,706	\$76,993	-5.35%
	Safety	<u>931</u>	86,077,154	\$92,457	0.57%
	Total	4,278	\$320,914,347	\$75,015	1.49%
June 30, 2016	General	3,394	\$241,729,055	\$71,222	1.63%
	APCD	38	2,979,643	\$78,412	1.84%
	Safety	<u>916</u>	86,041,656	\$93,932	1.60%
	Total	4,348	\$330,750,354	\$76,070	1.41%
June 30, 2017	General	3,315	\$242,037,608	\$73,013	2.51%
	APCD	35	2,886,965	\$82,485	5.19%
	Safety	<u>949</u>	91,187,124	\$96,088	2.30%
	Total	4,299	\$336,111,696	\$78,184	2.78%
June 30, 2018	General	3,212	\$246,464,767	\$76,732	5.09%
	APCD	30	2,585,875	\$86,196	4.50%
	Safety	<u>929</u>	91,508,536	\$98,502	2.51%
	Total	4,171	\$340,559,179	\$81,649	4.43%
June 30, 2019	General	3,293	\$254,877,894	\$77,400	0.87%
	APCD	32	2,917,484	\$91,171	5.77%
	Safety	<u>944</u>	95,991,720	\$101,686	3.23%
	Total	4,269	\$353,787,098	\$82,874	1.50%
June 30, 2020	General	3,327	\$268,092,934	\$80,581	4.11%
	APCD	33	3,116,418	\$94,437	3.58%
	Safety	<u>962</u>	101,475,166	\$105,484	3.74%
	Total	4,322	\$372,684,519	\$86,230	4.05%

¹Based on salary data provided in the June 30, 2020 valuation data for FYE 2020.



APPENDIX A – MEMBERSHIP INFORMATION

SBCERS Membership – Deferred Vested Members as of June 30, 2020

SBCERS Membership Deferred Vested and Inactive Members										
as of June 30, 2020										
		Average								
Group	Count	Age								
General Members										
Plan 2	16	59.9								
Plan 5A	138	56.4								
Plan 5B	424	50.5								
Plan 5C	339	45.7								
Plan 7	64	42.9								
PEPRA	360	39.0								
Total	1,353	46.5								
APCD Members										
Plan 1	7	58.6								
Plan 2	12	39.6								
PEPRA	6	35.2								
Total	25	43.8								
Safety Members										
Plan 4A	5	49.2								
Plan 4B	43	48.0								
Plan 4C	43	43.0								
Plan 6A	18	56.8								
Plan 6B	63	40.1								
PEPRA	61	34.4								
Total	233	42.1								
Total Inactives	1,611	45.8								



APPENDIX A – MEMBERSHIP INFORMATION

SBCERS Membership - Retired Members as of June 30, 2020

		Average Current	Average Retirement	Monthly	Average Monthly
Group	Count	Age	Age ¹	Allowances	Benefit
General Members					
Plan 1	673	83.8	57.6	\$1,233,000	\$1,832
Plan 2	71	71.1	61.0	53,000	746
Plan 3	6	67.7	56.4	7,000	1,194
Plan 4A	182	77.7	59.1	467,000	2,566
Plan 4B	4	74.8	55.6	1,000	307
Plan 5A	1,734	69.2	59.4	6,465,000	3,728
Plan 5B	393	67.7	60.6	778,000	1,979
Plan 5C	508	66.0	62.1	1,108,000	2,182
Plan 7	4	64.0	61.1	2,000	505
Plan 8	5	61.6	61.5	4,000	777
Total	3,580	71.8	59.7	\$10,118,000	\$2,826
APCD Members					
Plan 1	54	67.7	58.5	\$212,000	\$3,917
Plan 2	15	67.4	60.8	34,000	2,258
Total	69	67.6	59.0	\$245,000	\$3,551
Safety Members					
Plan 1	269	77.8	54.9	\$1,256,000	\$4,669
Plan 2	20	76.6	54.2	49,000	2,434
Plan 3	4	68.0	55.3	17,000	4,132
Plan 4A	294	67.5	56.1	2,191,000	7,452
Plan 4B	110	67.7	56.2	358,000	3,257
Plan 4C	119	61.7	58.0	466,000	3,913
Plan 4D	2	65.0	63.0	8,000	3,989
Plan 6A	275	60.6	53.5	1,713,000	6,230
Plan 6B	102	56.6	56.1	368,000	3,611
Total	1,195	66.9	55.4	\$6,426,000	\$5,377
Total in Pay Status	4,844	70.5	58.7	\$16,789,000	\$3,466

¹For healthy retired members only, excludes disabled members and beneficiaries.



APPENDIX A – MEMBERSHIP INFORMATION

SBCERS Membership - Retired Members as of June 30, 2020

	Count	Monthly Allowances	Average Monthly Benefit
General Members			
Healthy	3,030	\$9,100,000	\$3,003
Disabled	133	324,000	2,436
Beneficiaries	417	694,000	1,664
Total	3,580	\$10,118,000	\$2,826
APCD Members			
Healthy	63	\$230,000	\$3,651
Disabled	0	0	0
Beneficiaries	6	15,000	2,500
Total	69	\$245,000	\$3,551
Safety Members			
Healthy	866	\$5,210,000	\$6,016
Disabled	148	665,000	4,493
Beneficiaries	181	551,000	3,044
Total	1,195	\$6,426,000	\$5,377
Total in Pay Status	4,844	\$16,789,000	\$3,466



APPENDIX A – MEMBERSHIP INFORMATION

Age & Service Distribution of Active Members by Count and Average Salary as of June 30, 2020 All Members

Count

				Ye	ears of Ser	vice				
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total Count
Under 25	16	38	0	0	0	0	0	0	0	54
25-29	48	262	50	0	0	0	0	0	0	360
30-34	45	261	221	30	0	0	0	0	0	557
35-39	25	194	225	180	47	0	0	0	0	671
40-44	20	97	104	145	149	35	0	0	0	550
45-49	13	75	77	87	157	172	37	1	0	619
50-54	12	65	51	77	116	138	98	24	0	581
55-59	3	62	53	56	72	98	69	70	22	505
60-64	4	36	37	38	60	55	44	35	17	326
65 & Over	0	13	14	20	21	12	9	4	6	99
Total Count	186	1,103	832	633	622	510	257	134	45	4,322



APPENDIX A – MEMBERSHIP INFORMATION

Salary

				Y	ears of Ser	vice				Average
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Salary ¹
Under 25	\$53,994	\$63,524	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$60,700
25-29	62,544	68,973	78,130	0	0	0	0	0	0	69,387
30-34	66,676	69,687	78,938	76,933	0	0	0	0	0	73,504
35-39	75,620	78,628	81,582	85,659	92,259	0	0	0	0	82,347
40-44	65,750	79,906	87,606	87,819	94,356	97,512	0	0	0	87,968
45-49	69,072	79,277	85,107	82,339	93,117	104,139	98,491	53,243	0	91,743
50-54	72,145	90,576	81,061	89,095	94,505	98,382	98,589	104,073	0	93,712
55-59	63,199	107,688	96,224	95,245	84,862	96,353	97,763	101,979	97,305	96,787
60-64	76,723	106,203	101,499	89,590	93,163	83,535	100,603	93,312	84,300	93,864
65 & Over	0	100,894	87,857	101,124	91,085	79,062	78,536	113,637	91,340	92,273
Average Salary ¹	\$66,302	\$77,355	\$83,643	\$87,275	\$92,588	\$97,818	\$97,996	\$100,074	\$91,596	\$86,230

¹Based on salary data provided in the June 30, 2020 valuation data for FYE 2020.



APPENDIX A – MEMBERSHIP INFORMATION

Age & Service Distribution of Active Members by Count as of June 30, 2020 General Members

Count

				Υe	ears of Ser	vice				
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total Count
Under 25	13	27	0	0	0	0	0	0	0	40
25-29	33	167	32	0	0	0	0	0	0	232
30-34	31	209	158	22	0	0	0	0	0	420
35-39	18	160	171	120	26	0	0	0	0	495
40-44	18	90	84	94	87	22	0	0	0	395
45-49	11	68	65	68	112	92	26	1	0	443
50-54	9	59	50	62	88	103	69	18	0	458
55-59	2	54	44	54	64	86	60	54	21	439
60-64	4	33	36	33	59	54	43	32	16	310
65 & Over	0	13	14	20	19	11	9	4	5	95
Total Count	139	880	654	473	455	368	207	109	42	3,327



APPENDIX A – MEMBERSHIP INFORMATION

Age & Service Distribution of Active Members by Average Salary as of June 30, 2020 General Members

Salary

Years of Service											
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Salary ¹	
Under 25	\$49,908	\$57,159	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$54,802	
25-29	57,692	61,463	68,449	0	0	0	0	0	0	61,890	
30-34	65,686	66,050	71,685	68,645	0	0	0	0	0	68,279	
35-39	71,934	75,658	74,893	74,581	75,502	0	0	0	0	74,989	
40-44	64,098	78,512	83,863	80,778	82,107	81,319	0	0	0	80,480	
45-49	68,272	77,382	81,926	77,128	83,653	91,855	80,971	53,243	0	82,531	
50-54	64,146	86,261	81,658	84,012	87,840	89,844	86,296	88,610	0	86,226	
55-59	62,937	104,852	94,398	95,141	81,653	91,370	92,244	93,259	91,268	92,597	
60-64	76,723	103,353	99,832	85,167	93,170	83,364	100,138	90,427	80,945	92,308	
65 & Over	0	100,894	87,857	101,124	88,443	77,799	78,536	113,637	75,149	90,920	
Average Salary ¹	\$63,299	\$74,454	\$79,134	\$81,347	\$84,854	\$88,883	\$89,889	\$92,041	\$85,417	\$80,581	

¹Based on salary data provided in the June 30, 2020 valuation data for FYE 2020.



APPENDIX A – MEMBERSHIP INFORMATION

Age & Service Distribution of Active Members by Count as of June 30, 2020 Safety Members

Count

				Ye	ears of Ser	vice				
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total Count
Under 25	3	11	0	0	0	0	0	0	0	14
25-29	15	92	17	0	0	0	0	0	0	124
30-34	13	47	59	8	0	0	0	0	0	127
35-39	7	34	54	55	21	0	0	0	0	171
40-44	2	7	19	51	61	13	0	0	0	153
45-49	2	6	11	19	45	80	11	0	0	174
50-54	3	6	1	14	28	34	29	6	0	121
55-59	1	8	7	2	8	12	8	13	1	60
60-64	0	3	1	5	1	1	1	2	1	15
65 & Over	0	0	0	0	2	0	0	0	1	3
Total Count	46	214	169	154	166	140	49	21	3	962



APPENDIX A – MEMBERSHIP INFORMATION

Age & Service Distribution of Active Members by Average Salary as of June 30, 2020 Safety Members

Salary

					Years of Se	rvice				Average
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Salary ¹
Under 25	\$71,698	\$79,148	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$77,551
25-29	73,219	82,755	95,465	0	0	0	0	0	0	83,344
30-34	72,965	86,397	97,088	99,722	0	0	0	0	0	90,828
35-39	85,097	92,605	102,762	106,611	113,006	0	0	0	0	102,516
40-44	80,621	97,836	104,136	100,797	112,018	124,917	0	0	0	107,336
45-49	73,473	94,464	103,194	100,991	116,671	118,266	139,900	0	0	115,047
50-54	96,141	133,006	51,237	107,999	115,453	121,019	127,838	150,461	0	120,720
55-59	63,723	126,831	103,956	98,043	110,527	132,059	136,717	139,620	224,078	126,732
60-64	0	137,550	161,501	118,780	92,724	92,724	120,598	160,625	137,971	128,888
65 & Over	0	0	0	0	116,183	0	0	0	172,291	134,886
Average Salary ¹	\$76,477	\$89,581	\$100,322	\$104,044	\$113,846	\$120,552	\$131,847	\$144,718	\$178,113	\$105,484

¹Based on salary data provided in the June 30, 2020 valuation data for FYE 2020.



APPENDIX A – MEMBERSHIP INFORMATION

Age & Service Distribution of Active Members by Count as of June 30, 2020 APCD Members

Count

				Ye	ears of Ser	vice				
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total Count
Under 25	0	0	0	0	0	0	0	0	0	0
25-29	0	3	1	0	0	0	0	0	0	4
30-34	1	5	4	0	0	0	0	0	0	10
35-39	0	0	0	5	0	0	0	0	0	5
40-44	0	0	1	0	1	0	0	0	0	2
45-49	0	1	1	0	0	0	0	0	0	2
50-54	0	0	0	1	0	1	0	0	0	2
55-59	0	0	2	0	0	0	1	3	0	6
60-64	0	0	0	0	0	0	0	1	0	1
65 & Over	0	0	0	0	0	1	0	0	0	1
Total Count	1	9	9	6	1	2	1	4	0	33



APPENDIX A – MEMBERSHIP INFORMATION

Age & Service Distribution of Active Members by Average Salary as of June 30, 2020 APCD Members

Salary

·				<u>, </u>	Years of Se	rvice				Average
Age	0-1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Salary ¹
Under 25	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25-29	0	64,324	93,193	0	0	0	0	0	0	71,541
30-34	15,616	64,630	97,672	0	0	0	0	0	0	72,945
35-39	0	0	0	121,053	0	0	0	0	0	121,053
40-44	0	0	87,963	0	82,589	0	0	0	0	85,276
45-49	0	117,020	92,949	0	0	0	0	0	0	104,985
50-54	0	0	0	139,550	0	208,124	0	0	0	173,837
55-59	0	0	109,316	0	0	0	117,315	95,815	0	103,899
60-64	0	0	0	0	0	0	0	50,998	0	50,998
65 & Over	0	0	0	0	0	92,949	0	0	0	92,949
Average Salary ¹	\$15,616	\$70,349	\$98,158	\$124,136	\$82,589	\$150,537	\$117,315	\$84,611	\$0	\$94,437

¹Based on salary data provided in the June 30, 2020 valuation data for FYE 2020.



APPENDIX A – MEMBERSHIP INFORMATION

Distribution of Retired Members by Age and Retirement Year as of June 30, 2020 All Members

				Bene	fit Effective	Date				Total	Average Monthly
Age	Pre-1985	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020	Count	Benefit
Under 35	0	0	0	3	1	0	4	2	0	10	\$797
35-39	0	0	0	0	0	0	1	4	0	5	\$3,007
40-44	0	0	0	0	2	1	3	8	1	15	\$2,824
45-49	0	0	0	1	2	0	6	10	2	21	\$3,149
50-54	0	0	2	3	3	3	7	115	22	155	\$3,167
55-59	0	0	0	2	8	9	118	216	27	380	\$3,295
60-64	0	0	1	17	13	133	239	330	50	783	\$3,626
65-69	2	1	1	8	76	234	280	348	21	971	\$3,807
70-74	6	5	6	62	175	292	267	153	5	971	\$3,819
75-79	17	5	28	128	190	187	79	56	2	692	\$3,629
80-84	12	18	60	89	108	48	23	26	1	385	\$2,813
85-89	17	29	46	60	24	17	15	24	1	233	\$2,439
90-94	27	31	36	13	15	11	8	11	1	153	\$2,249
95-99	21	13	10	4	4	3	4	3	0	62	\$2,272
100 & Over	6	1	1	0	0	0	0	0	0	8	\$3,076
Total Count	108	103	191	390	621	938	1,054	1,306	133	4,844	
Avg Monthly Benefit	\$2,226	\$2,463	\$2,591	\$3,020	\$3,264	\$3,679	\$3,582	\$3,665	\$4,381		\$3,466



APPENDIX A – MEMBERSHIP INFORMATION

Distribution of Retired Members by Age and Retirement Year as of June 30, 2020 General Members

				Bene	fit Effective	Date				Total	Average Monthly
Age	Pre-1985	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020	Count	Benefit
Under 35	0	0	0	3	1	0	2	0	0	6	\$561
35-39	0	0	0	0	0	0	1	0	0	1	\$33
40-44	0	0	0	0	2	1	2	3	1	9	\$1,879
45-49	0	0	0	1	1	0	3	1	0	6	\$1,582
50-54	0	0	2	1	1	2	1	44	9	60	\$1,295
55-59	0	0	0	2	5	3	63	123	19	215	\$1,774
60-64	0	0	1	11	9	77	141	254	42	535	\$2,903
65-69	1	1	1	6	56	154	218	296	20	753	\$3,165
70-74	1	3	3	49	107	233	238	135	2	771	\$3,318
75-79	3	2	16	67	139	163	65	44	2	501	\$2,894
80-84	1	12	48	69	99	43	21	21	1	315	\$2,497
85-89	14	22	38	54	21	15	10	23	1	198	\$2,167
90-94	25	30	36	11	11	10	8	11	1	143	\$2,239
95-99	21	13	10	4	4	3	3	3	0	61	\$2,245
100 & Over	4	1	1	0	0	0	0	0	0	6	\$2,198
Total Count	70	84	156	278	456	704	776	958	98	3,580	
Avg Monthly Benefit	\$1,731	\$2,106	\$2,150	\$2,028	\$2,438	\$2,953	\$3,045	\$3,138	\$3,692		\$2,826



APPENDIX A – MEMBERSHIP INFORMATION

Distribution of Retired Members by Age and Retirement Year as of June 30, 2020 Safety Members

				Bene	fit Effective	Date				Total	Average Monthly
Age	Pre-1985	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020	Count	Benefit
Under 35	0	0	0	0	0	0	2	2	0	4	\$1,152
35-39	0	0	0	0	0	0	0	4	0	4	\$3,750
40-44	0	0	0	0	0	0	1	5	0	6	\$4,241
45-49	0	0	0	0	1	0	3	9	2	15	\$3,775
50-54	0	0	0	2	2	1	6	70	13	94	\$4,377
55-59	0	0	0	0	3	6	50	90	8	157	\$5,461
60-64	0	0	0	6	4	50	93	72	6	231	\$5,328
65-69	1	0	0	2	19	77	54	45	1	199	\$6,160
70-74	5	2	3	13	66	57	23	16	3	188	\$5,838
75-79	14	3	12	61	51	21	11	12	0	185	\$5,639
80-84	11	6	12	20	6	3	2	5	0	65	\$4,301
85-89	3	7	8	6	3	2	5	1	0	35	\$3,980
90-94	2	1	0	2	3	1	0	0	0	9	\$2,649
95-99	0	0	0	0	0	0	1	0	0	1	\$3,908
100 & Over	2	0	0	0	0	0	0	0	0	2	\$5,710
Total Count	38	19	35	112	158	218	251	331	33	1,195	
Avg Monthly Benefit	\$3,137	\$4,042	\$4,553	\$5,482	\$5,691	\$6,080	\$5,260	\$5,165	\$6,124		\$5,377



APPENDIX A – MEMBERSHIP INFORMATION

Distribution of Retired Members by Age and Retirement Year as of June 30, 2020 APCD Members

				Bene	fit Effective	Date				Total	Average Monthly
Age	Pre-1985	1985-89	1990-94	1995-99	2000-04	2005-09	2010-14	2015-19	2020	Count	Benefit
Under 35	0	0	0	0	0	0	0	0	0	0	\$0
35-39	0	0	0	0	0	0	0	0	0	0	\$0
40-44	0	0	0	0	0	0	0	0	0	0	\$0
45-49	0	0	0	0	0	0	0	0	0	0	\$0
50-54	0	0	0	0	0	0	0	1	0	1	\$1,731
55-59	0	0	0	0	0	0	5	3	0	8	\$1,676
60-64	0	0	0	0	0	6	5	4	2	17	\$3,249
65-69	0	0	0	0	1	3	8	7	0	19	\$4,605
70-74	0	0	0	0	2	2	6	2	0	12	\$4,381
75-79	0	0	0	0	0	3	3	0	0	6	\$3,024
80-84	0	0	0	0	3	2	0	0	0	5	\$3,348
85-89	0	0	0	0	0	0	0	0	0	0	\$0
90-94	0	0	0	0	1	0	0	0	0	1	\$58
95-99	0	0	0	0	0	0	0	0	0	0	\$0
100 & Over	0	0	0	0	0	0	0	0	0	0	\$0
Total Count	0	0	0	0	7	16	27	17	2	69	
Avg Monthly Benefit	\$0	\$0	\$0	\$0	\$2,364	\$2,925	\$3,439	\$4,143	\$9,369		\$3,551



APPENDIX A – MEMBERSHIP INFORMATION

Reconciliation of System Membership since Prior Valuation All Members

	Actives	Deferred Members	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
June 30, 2019	4,269	1,598	67	204	3,815	594	10,547
New Entrants	428	0	0	0	0	0	428
Rehires	29	(18)	0	0	(1)	0	10
Duty Disabilities	(3)	(2)	0	5	0	0	0
Ordinary Disabilities	(3)	0	3	0	0	0	0
Retirements	(146)	(59)	0	0	205	0	0
Retirements from one plan with service in another	0	(2)	0	0	8	0	6
Vested Terminations	(68)	68	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	(2)	(1)	(1)	(1)	(27)	33	1
Non-Vested Terminations and Death without beneficiary	(88)	87	0	(1)	(34)	0	(36)
Transfers	(9)	9	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	(29)	(29)
Domestic Relations Orders	0	4	0	0	0	5	9
Withdrawals Paid	(85)	(72)	0	0	0	0	(157)
Data Corrections	0	0	0	5	(6)	4	3
Benefit Expired	0	(1)	0	0	(1)	(3)	(5)
June 30, 2020	4,322	1,611	69	212	3,959	604	10,777



APPENDIX A – MEMBERSHIP INFORMATION

Reconciliation of System Membership since Prior Valuation General Members

	Actives	Deferred Members	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
June 30, 2019	3,293	1,341	57	74	2,923	413	8,101
New Entrants	335	0	0	0	0	0	335
Rehires	28	(17)	0	0	(1)	0	10
Duty Disabilities	0	(1)	0	1	0	0	0
Ordinary Disabilities	(3)	0	3	0	0	0	0
Retirements	(105)	(50)	0	0	155	0	0
Retirements from one plan with service in another	0	(2)	0	0	7	0	5
Vested Terminations	(60)	60	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	(2)	0	(1)	(1)	(19)	23	0
Non-Vested Terminations and Death without beneficiary	(75)	74	0	(1)	(32)	0	(34)
Transfers	(7)	7	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	(19)	(19)
Domestic Relations Orders	0	2	0	0	0	0	2
Withdrawals Paid	(71)	(60)	0	0	0	0	(131)
Data Corrections	(6)	0	0	1	(2)	3	(4)
Benefit Expired	0	(1)	0	0	(1)	(3)	(5)
June 30, 2020	3,327	1,353	59	74	3,030	417	8,260



APPENDIX A – MEMBERSHIP INFORMATION

Reconciliation of System Membership since Prior Valuation Safety Members

	Actives	Deferred Members	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
June 30, 2019	944	232	10	130	832	175	2,323
New Entrants	91	0	0	0	0	0	91
Rehires	1	(1)	0	0	0	0	0
Duty Disabilities	(3)	(1)	0	4	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0
Retirements	(38)	(9)	0	0	47	0	0
Retirements from one plan with service in another	0	0	0	0	1	0	1
Vested Terminations	(7)	7	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	(1)	0	0	(8)	10	1
Non-Vested Terminations and Death without beneficiary	(13)	13	0	0	(2)	0	(2)
Transfers	(2)	2	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	(10)	(10)
Domestic Relations Orders	0	2	0	0	0	5	7
Withdrawals Paid	(14)	(11)	0	0	0	0	(25)
Data Corrections	3	0	0	4	(4)	1	4
Benefit Expired	0	0	0	0	0	0	0
June 30, 2020	962	233	10	138	866	181	2,390



APPENDIX A – MEMBERSHIP INFORMATION

Reconciliation of System Membership since Prior Valuation APCD Members

	Actives	Deferred Members	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
June 30, 2019	32	25	0	0	60	6	123
New Entrants	2	0	0	0	0	0	2
Rehires	0	0	0	0	0	0	0
Duty Disabilities	0	0	0	0	0	0	0
Ordinary Disabilities	0	0	0	0	0	0	0
Retirements	(3)	0	0	0	3	0	0
Retirements from one plan with service in another	0	0	0	0	0	0	0
Vested Terminations	(1)	1	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	0	0
Non-Vested Terminations and Death without beneficiary	0	0	0	0	0	0	0
Transfers	0	0	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	0	0
Domestic Relations Orders	0	0	0	0	0	0	0
Withdrawals Paid	0	(1)	0	0	0	0	(1)
Data Corrections	3	0	0	0	0	0	3
Benefit Expired	0	0	0	0	0	0	0
June 30, 2020	33	25	0	0	63	6	127



APPENDIX B – MEMBER CONTRIBUTION RATES

Plan/Tier	Code Section	Member Contribution Provides Average Annuity	FAS Period
General 5A	31621.5	1/200th of Final Average Salary (FAS) at age 60	1 year
General 5B	31621.2	1/100th of Final Average Salary (FAS) at age 60	1 year
General 5C	31621.5	1/200th of Final Average Salary (FAS) at age 60	3 year
General 2	NA	NA	3 year
General 7	31621.4	1/240th of Final Average Salary (FAS) at age 60	3 year
APCD 1	31621.6 & 31581.1	1/2 x 1/100th of Final Average Salary (FAS) at age 55	1 year
APCD 2	31621.6	1/100th of Final Average Salary (FAS) at age 55	1 year
Safety 4A & 6A		1/2 x 3/200th of Final Average Salary (FAS) at age 55	1 year
Safety 4B		3/200th of Final Average Salary (FAS) at age 55	1 year
Safety 4C & 6B		1/2 x 3/200th of Final Average Salary (FAS) at age 55	3 year



APPENDIX B – MEMBER CONTRIBUTION RATES

PEPRA Member Contribution Rates effective as of the June 30, 2020 Valuation

	PEPRA	Rates	
Ge	neral		
2% COLA	3% COLA	Safety	APCD
8.36%	9.63%	15.14%	7.23%
Assumptions:			
Interest:	7.00%		
Salary:	2019 Scale (Service bas	ed, includes wage inflati	on at 3.00%)
Mortality:	Cost. Thus, the moractuarial valuation (Pu Public Safety 2010)	on rates are based on 50 tality rates are the same ablic General 2010 Above Mortality Tables with geted from 2010 using Project.	as those used in the ve-Median Income and enerational mortality
Administrative expenses:	Rates have been loaded administrative expenses	•	*



APPENDIX B – MEMBER CONTRIBUTION RATES

Member Cost Sharing/Pick-Up Contributions by Bargaining Group Estimated Rate During July 1, 2021 to June 30, 2022 (Non-PEPRA Plans Only)

Bargaining Unit	Union	Employer Contribution Offset ¹	Additional Member Contribution ¹
10, 11	Union of American Physicians & Dentists	2.48%	2.50%
12, 13	Fire Fighters Local 2046	5.97%	6.00%
14, 15	Deputy Sheriffs' Association - Safety	5.97%	6.00%
14, 15	Deputy Sheriffs' Association - non-Safety	2.48%	2.50%
17	Deputy District Attorneys	1.49%	1.50%
18, 19	Probation Peace Officers	5.97%	6.00%
20	Deputy Public Defenders	2.48%	2.50%
21, 22	SEIU Local 721	2.48%	2.50%
23, 24, 25, 26, 27	SEIU Local 620	2.48%	2.50%
28, 29	Engineers & Technicians	2.48%	2.50%
30	Civil Attorneys Association	1.48%	1.49%
32	Confidential	2.48%	2.50%
35, 40, 41, 42, 43	Unrepresented Managers (including CEO)	2.47%	2.49%
35, 40, 41, 42, 43	Unrepresented Managers - Safety	0.83%	0.83%
36	Unrepresented Confidential Attorneys	1.48%	1.49%
39	Board of Supervisors	0.82%	0.83%
44	Sheriff Managers Association	5.97%	6.00%

¹ Contribution rates shown are the estimated rates to be made during the Plan Year, based on the actual timing and amount of cost-sharing, and not the effective rate at the beginning of the Plan Year.



APPENDIX B – MEMBER CONTRIBUTION RATES

SEIU Local 620 (23,24,25,26,27) and Local 721 (21,22), Deputy Sheriffs' Association - Non-Safety (14,15), Deputy Public Defenders (20), Engineers & Technicians (28,29) and Confidential (32)

	1, 2020

		Plan 5A			Plan 5B			Plan 5C			Plan 7	
Entry Age	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total
16	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
17	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
18	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
19	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
20	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
21	3.08%	2.50%	5.58%	6.16%	2.50%	8.66%	2.98%	2.50%	5.48%	2.48%	2.50%	4.98%
22	3.14%	2.50%	5.64%	6.29%	2.50%	8.79%	3.04%	2.50%	5.54%	2.54%	2.50%	5.04%
23	3.21%	2.50%	5.71%	6.43%	2.50%	8.93%	3.11%	2.50%	5.61%	2.59%	2.50%	5.09%
24	3.28%	2.50%	5.78%	6.56%	2.50%	9.06%	3.18%	2.50%	5.68%	2.65%	2.50%	5.15%
25	3.35%	2.50%	5.85%	6.71%	2.50%	9.21%	3.24%	2.50%	5.74%	2.70%	2.50%	5.20%
26	3.42%	2.50%	5.92%	6.85%	2.50%	9.35%	3.31%	2.50%	5.81%	2.76%	2.50%	5.26%
27	3.50%	2.50%	6.00%	7.00%	2.50%	9.50%	3.38%	2.50%	5.88%	2.82%	2.50%	5.32%
28	3.57%	2.50%	6.07%	7.15%	2.50%	9.65%	3.46%	2.50%	5.96%	2.88%	2.50%	5.38%
29	3.65%	2.50%	6.15%	7.30%	2.50%	9.80%	3.53%	2.50%	6.03%	2.94%	2.50%	5.44%
30	3.73%	2.50%	6.23%	7.45%	2.50%	9.95%	3.61%	2.50%	6.11%	3.00%	2.50%	5.50%
31	3.81%	2.50%	6.31%	7.61%	2.50%	10.11%	3.68%	2.50%	6.18%	3.07%	2.50%	5.57%
32	3.89%	2.50%	6.39%	7.77%	2.50%	10.27%	3.76%	2.50%	6.26%	3.13%	2.50%	5.63%
33	3.97%	2.50%	6.47%	7.94%	2.50%	10.44%	3.84%	2.50%	6.34%	3.20%	2.50%	5.70%
34	4.05%	2.50%	6.55%	8.11%	2.50%	10.61%	3.92%	2.50%	6.42%	3.27%	2.50%	5.77%
35	4.14%	2.50%	6.64%	8.28%	2.50%	10.78%	4.01%	2.50%	6.51%	3.34%	2.50%	5.84%
36	4.23%	2.50%	6.73%	8.46%	2.50%	10.96%	4.09%	2.50%	6.59%	3.41%	2.50%	5.91%
37	4.32%	2.50%	6.82%	8.64%	2.50%	11.14%	4.18%	2.50%	6.68%	3.48%	2.50%	5.98%
38	4.41%	2.50%	6.91%	8.82%	2.50%	11.32%	4.27%	2.50%	6.77%	3.55%	2.50%	6.05%
39	4.50%	2.50%	7.00%	9.01%	2.50%	11.51%	4.35%	2.50%	6.85%	3.63%	2.50%	6.13%
40	4.60%	2.50%	7.10%	9.20%	2.50%	11.70%	4.45%	2.50%	6.95%	3.70%	2.50%	6.20%
41	4.69%	2.50%	7.19%	9.39%	2.50%	11.89%	4.54%	2.50%	7.04%	3.78%	2.50%	6.28%
42	4.79%	2.50%	7.29%	9.58%	2.50%	12.08%	4.63%	2.50%	7.13%	3.86%	2.50%	6.36%
43	4.89%	2.50%	7.39%	9.78%	2.50%	12.28%	4.72%	2.50%	7.22%	3.94%	2.50%	6.44%
44	4.99%	2.50%	7.49%	9.99%	2.50%	12.49%	4.82%	2.50%	7.32%	4.02%	2.50%	6.52%
45	5.09%	2.50%	7.59%	10.19%	2.50%	12.69%	4.91%	2.50%	7.41%	4.09%	2.50%	6.59%
46	5.20%	2.50%	7.70%	10.39%	2.50%	12.89%	5.00%	2.50%	7.50%	4.17%	2.50%	6.67%
47	5.29%	2.50%	7.79%	10.59%	2.50%	13.09%	5.09%	2.50%	7.59%	4.25%	2.50%	6.75%
48	5.39%	2.50%	7.89%	10.78%	2.50%	13.28%	5.18%	2.50%	7.68%	4.32%	2.50%	6.82%
49	5.49%	2.50%	7.99%	10.98%	2.50%	13.48%	5.27%	2.50%	7.77%	4.39%	2.50%	6.89%
50	5.58%	2.50%	8.08%	11.17%	2.50%	13.67%	5.36%	2.50%	7.86%	4.47%	2.50%	6.97%
51 52	5.68%	2.50%	8.18%	11.36%	2.50%	13.86%	5.45%	2.50%	7.95%	4.54%	2.50%	7.04%
52	5.78% 5.87%	2.50% 2.50%	8.28% 8.37%	11.56% 11.74%	2.50% 2.50%	14.06% 14.24%	5.53% 5.60%	2.50% 2.50%	8.03% 8.10%	4.61% 4.67%	2.50% 2.50%	7.11% 7.17%
55 54	5.96%	2.50%	8.46%	11.74%	2.50%	14.42%	5.65%	2.50%	8.15%	4.07%	2.50%	7.17%
54 55	6.03%	2.50%	8.46%	12.06%	2.50%	14.42%	5.69%	2.50%	8.15% 8.19%	4.71%	2.50%	7.21% 7.24%
55 56	6.08%	2.50%	8.58%	12.06%	2.50%	14.56%	5.71%	2.50%	8.19%	4.74%	2.50%	7.24% 7.26%
57	6.11%	2.50%	8.61%	12.10%	2.50%	14.72%	5.71%	2.50%	8.21%	4.76%	2.50%	7.26%
58	6.12%	2.50%	8.62%	12.22%	2.50%	14.72%	5.89%	2.50%	8.39%	4.70%	2.50%	7.41%
59	6.12%	2.50%	8.62%	12.23%	2.50%	14.73%	6.09%	2.50%	8.59%	5.08%	2.50%	7.41%
60	6.12%	2.50%	8.62%	12.23%	2.50%	14.73%	6.09%	2.50%	8.59%	5.08%	2.50%	7.58%
00	0.12/0	2.3070	0.02/0	12.23/0	2.3070	17.73/0	0.07/0	2.3070	0.07/0	5.0070	2.3070	7.50/0

Members do not pay COLA contributions

Assumptions:

Interest: 7.00%

Salary: 2019 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Mortality: Public General 2010 Above-Median Income - PUBG-2010(A) - Retiree Mortality Table, projected to 2044 using MP-2019

(blended 35% Male / 65% Female)



APPENDIX B – MEMBER CONTRIBUTION RATES

			Ţ	U nion of	American Pl			sts (10,11)				
					Effective No	ovember	16, 2020					
		Plan 5A			Plan 5B			Plan 5C			Plan 7	
Entry Age	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total
16	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
17	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
18	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
19	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
20	3.01%	2.50%	5.51%	6.03%	2.50%	8.53%	2.92%	2.50%	5.42%	2.43%	2.50%	4.93%
21	3.08%	2.50%	5.58%	6.16%	2.50%	8.66%	2.98%	2.50%	5.48%	2.48%	2.50%	4.98%
22	3.14%	2.50%	5.64%	6.29%	2.50%	8.79%	3.04%	2.50%	5.54%	2.54%	2.50%	5.04%
23	3.21%	2.50%	5.71%	6.43%	2.50%	8.93%	3.11%	2.50%	5.61%	2.59%	2.50%	5.09%
24	3.28%	2.50%	5.78%	6.56%	2.50%	9.06%	3.18%	2.50%	5.68%	2.65%	2.50%	5.15%
25	3.35%	2.50%	5.85%	6.71%	2.50%	9.21%	3.24%	2.50%	5.74%	2.70%	2.50%	5.20%
26	3.42%	2.50%	5.92%	6.85%	2.50%	9.35%	3.31%	2.50%	5.81%	2.76%	2.50%	5.26%
27	3.50%	2.50%	6.00%	7.00%	2.50%	9.50%	3.38%	2.50%	5.88%	2.82%	2.50%	5.32%
28	3.57%	2.50%	6.07%	7.15%	2.50%	9.65%	3.46%	2.50%	5.96%	2.88%	2.50%	5.38%
29	3.65%	2.50%	6.15%	7.30%	2.50%	9.80%	3.53%	2.50%	6.03%	2.94%	2.50%	5.44%
30	3.73%	2.50%	6.23%	7.45%	2.50%	9.95%	3.61%	2.50%	6.11%	3.00%	2.50%	5.50%
31	3.81%	2.50%	6.31%	7.61%	2.50%	10.11%	3.68%	2.50%	6.18%	3.07%	2.50%	5.57%
32	3.89%	2.50%	6.39%	7.77%	2.50%	10.27%	3.76%	2.50%	6.26%	3.13%	2.50%	5.63%
33	3.97%	2.50%	6.47%	7.94%	2.50%	10.44%	3.84%	2.50%	6.34%	3.20%	2.50%	5.70%
34	4.05%	2.50%	6.55%	8.11%	2.50%	10.61%	3.92%	2.50%	6.42%	3.27%	2.50%	5.77%
35	4.14%	2.50%	6.64%	8.28%	2.50%	10.78%	4.01%	2.50%	6.51%	3.34%	2.50%	5.84%
36	4.23%	2.50%	6.73%	8.46%	2.50%	10.96%	4.09%	2.50%	6.59%	3.41%	2.50%	5.91%
37	4.32%	2.50%	6.82%	8.64%	2.50%	11.14%	4.18%	2.50%	6.68%	3.48%	2.50%	5.98%
38	4.41%	2.50%	6.91%	8.82%	2.50%	11.32%	4.27%	2.50%	6.77%	3.55%	2.50%	6.05%
39	4.50%	2.50%	7.00%	9.01%	2.50%	11.51%	4.35%	2.50%	6.85%	3.63%	2.50%	6.13%
40	4.60%	2.50%	7.10%	9.20%	2.50%	11.70%	4.45%	2.50%	6.95%	3.70%	2.50%	6.20%
41	4.69%	2.50%	7.19%	9.39%	2.50%	11.89%	4.54%	2.50%	7.04%	3.78%	2.50%	6.28%
42	4.79%	2.50%	7.29%	9.58%	2.50%	12.08%	4.63%	2.50%	7.13%	3.86%	2.50%	6.36%
43	4.89%	2.50%	7.39%	9.78%	2.50%	12.28%	4.72%	2.50%	7.22%	3.94%	2.50%	6.44%
44	4.99%	2.50%	7.49%	9.99%	2.50%	12.49%	4.82%	2.50%	7.32%	4.02%	2.50%	6.52%
45	5.09%	2.50%	7.59%	10.19%	2.50%	12.69%	4.91%	2.50%	7.41%	4.09%	2.50%	6.59%
46	5.20%	2.50%	7.70%	10.39%	2.50%	12.89%	5.00%	2.50%	7.50%	4.17%	2.50%	6.67%
47	5.29%	2.50%	7.79%	10.59%	2.50%	13.09%	5.09%	2.50%	7.59%	4.25%	2.50%	6.75%
48	5.39%	2.50%	7.89%	10.78%	2.50%	13.28%	5.18%	2.50%	7.68%	4.32%	2.50%	6.82%
49	5.49%	2.50%	7.99%	10.98%	2.50%	13.48%	5.27%	2.50%	7.77%	4.39%	2.50%	6.89%
50	5.58%	2.50%	8.08%	11.17%	2.50%	13.67%	5.36%	2.50%	7.86%	4.47%	2.50%	6.97%
51	5.68%	2.50%	8.18%	11.36%	2.50%	13.86%	5.45%	2.50%	7.95%	4.54%	2.50%	7.04%
52	5.78%	2.50%	8.28%	11.56%	2.50%	14.06%	5.53%	2.50%	8.03%	4.61%	2.50%	7.11%
53	5.87%	2.50%	8.37%	11.74%	2.50%	14.24%	5.60%	2.50%	8.10%	4.67%	2.50%	7.17%
54	5.96%	2.50%	8.46%	11.92%	2.50%	14.42%	5.65%	2.50%	8.15%	4.71%	2.50%	7.21%
55	6.03%	2.50%	8.53%	12.06%	2.50%	14.56%	5.69%	2.50%	8.19%	4.74%	2.50%	7.24%
56	6.08%	2.50%	8.58%	12.16%	2.50%	14.66%	5.71%	2.50%	8.21%	4.76%	2.50%	7.26%
57	6.11%	2.50%	8.61%	12.22%	2.50%	14.72%	5.71%	2.50%	8.21%	4.76%	2.50%	7.26%
58	6.12%	2.50%	8.62%	12.23%	2.50%	14.73%	5.89%	2.50%	8.39%	4.91%	2.50%	7.41%
59	6.12%	2.50%	8.62%	12.23%	2.50%	14.73%	6.09%	2.50%	8.59%	5.08%	2.50%	7.58%
60	6.12%	2.50%	8.62%	12.23%	2.50%	14.73%	6.09%	2.50%	8.59%	5.08%	2.50%	7.58%

Members do not pay COLA contributions

Assumptions:

Interest: 7.00%

Salary: 2019 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Mortality: Public General 2010 Above-Median Income - PUBG-2010(A) - Retiree Mortality Table, projected to 2044 using MP-2019

(blended 35% Male / 65% Female)



APPENDIX B – MEMBER CONTRIBUTION RATES

					Deputy Dist	rict Attori e July 1, 2						
						cour, 1, 1	0_0					
		Plan 5A			Plan 5B			Plan 5C			Plan 7	
Entry Age	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total
16	3.01%	1.50%	4.51%	6.03%	1.50%	7.53%	2.92%	1.50%	4.42%	2.43%	1.50%	3.93%
17	3.01%	1.50%	4.51%	6.03%	1.50%	7.53%	2.92%	1.50%	4.42%	2.43%	1.50%	3.93%
18	3.01%	1.50%	4.51%	6.03%	1.50%	7.53%	2.92%	1.50%	4.42%	2.43%	1.50%	3.93%
19	3.01%	1.50%	4.51%	6.03%	1.50%	7.53%	2.92%	1.50%	4.42%	2.43%	1.50%	3.93%
20	3.01%	1.50%	4.51%	6.03%	1.50%	7.53%	2.92%	1.50%	4.42%	2.43%	1.50%	3.93%
21	3.08%	1.50%	4.58%	6.16%	1.50%	7.66%	2.98%	1.50%	4.48%	2.48%	1.50%	3.98%
22	3.14%	1.50%	4.64%	6.29%	1.50%	7.79%	3.04%	1.50%	4.54%	2.54%	1.50%	4.04%
23	3.21%	1.50%	4.71%	6.43%	1.50%	7.93%	3.11%	1.50%	4.61%	2.59%	1.50%	4.09%
24	3.28%	1.50%	4.78%	6.56%	1.50%	8.06%	3.18%	1.50%	4.68%	2.65%	1.50%	4.15%
25	3.35%	1.50%	4.85%	6.71%	1.50%	8.21%	3.24%	1.50%	4.74%	2.70%	1.50%	4.20%
26	3.42%	1.50%	4.92%	6.85%	1.50%	8.35%	3.31%	1.50%	4.81%	2.76%	1.50%	4.26%
27	3.50%	1.50%	5.00%	7.00%	1.50%	8.50%	3.38%	1.50%	4.88%	2.82%	1.50%	4.32%
28	3.57%	1.50%	5.07%	7.15%	1.50%	8.65%	3.46%	1.50%	4.96%	2.88%	1.50%	4.38%
29	3.65%	1.50%	5.15%	7.30%	1.50%	8.80%	3.53%	1.50%	5.03%	2.94%	1.50%	4.44%
30	3.73%	1.50%	5.23%	7.45%	1.50%	8.95%	3.61%	1.50%	5.11%	3.00%	1.50%	4.50%
31	3.81%	1.50%	5.31%	7.61%	1.50%	9.11%	3.68%	1.50%	5.18%	3.07%	1.50%	4.57%
32	3.89%	1.50%	5.39%	7.77%	1.50%	9.27%	3.76%	1.50%	5.26%	3.13%	1.50%	4.63%
33	3.97%	1.50%	5.47%	7.94%	1.50%	9.44%	3.84%	1.50%	5.34%	3.20%	1.50%	4.70%
34	4.05%	1.50%	5.55%	8.11%	1.50%	9.61%	3.92%	1.50%	5.42%	3.27%	1.50%	4.77%
35	4.14%	1.50%	5.64%	8.28%	1.50%	9.78%	4.01%	1.50%	5.51%	3.34%	1.50%	4.84%
36	4.23%	1.50%	5.73%	8.46%	1.50%	9.96%	4.09%	1.50%	5.59%	3.41%	1.50%	4.91%
37	4.32%	1.50%	5.82%	8.64%	1.50%	10.14%	4.18%	1.50%	5.68%	3.48%	1.50%	4.98%
38	4.41%	1.50%	5.91%	8.82%	1.50%	10.32%	4.27%	1.50%	5.77%	3.55%	1.50%	5.05%
39	4.50%	1.50%	6.00%	9.01%	1.50%	10.51%	4.35%	1.50%	5.85%	3.63%	1.50%	5.13%
40	4.60%	1.50%	6.10%	9.20%	1.50%	10.70%	4.45%	1.50%	5.95%	3.70%	1.50%	5.20%
41	4.69%	1.50%	6.19%	9.39%	1.50%	10.89%	4.54%	1.50%	6.04%	3.78%	1.50%	5.28%
42	4.79%	1.50%	6.29%	9.58%	1.50%	11.08%	4.63%	1.50%	6.13%	3.86%	1.50%	5.36%
43	4.89%	1.50%	6.39%	9.78%	1.50%	11.28%	4.72%	1.50%	6.22%	3.94%	1.50%	5.44%
44	4.99%	1.50%	6.49%	9.99%	1.50%	11.49%	4.82%	1.50%	6.32%	4.02%	1.50%	5.52%
45	5.09%	1.50%	6.59%	10.19%	1.50%	11.69%	4.91%	1.50%	6.41%	4.09%	1.50%	5.59%
46	5.20%	1.50%	6.70%	10.39%	1.50%	11.89%	5.00%	1.50%	6.50%	4.17%	1.50%	5.67%
47	5.29%	1.50%	6.79%	10.59%	1.50%	12.09%	5.09%	1.50%	6.59%	4.25%	1.50%	5.75%
48	5.39%	1.50%	6.89%	10.78%	1.50%	12.28%	5.18%	1.50%	6.68%	4.32%	1.50%	5.82%
49	5.49%	1.50%	6.99%	10.98%	1.50%	12.48%	5.27%	1.50%	6.77%	4.39%	1.50%	5.89%
50	5.58%	1.50%	7.08%	11.17%	1.50%	12.67%	5.36%	1.50%	6.86%	4.47%	1.50%	5.97%
51	5.68%	1.50%	7.18%	11.36%	1.50%	12.86%	5.45%	1.50%	6.95%	4.54%	1.50%	6.04%
52	5.78%	1.50%	7.28%	11.56%	1.50%	13.06%	5.53%	1.50%	7.03%	4.61%	1.50%	6.11%
53	5.87%	1.50%	7.37%	11.74%	1.50%	13.24%	5.60%	1.50%	7.10%	4.67%	1.50%	6.17%
54	5.96%	1.50%	7.46%	11.92%	1.50%	13.42%	5.65%	1.50%	7.15%	4.71%	1.50%	6.21%
55	6.03%	1.50%	7.53%	12.06%	1.50%	13.56%	5.69%	1.50%	7.19%	4.74%	1.50%	6.24%
56	6.08%	1.50%	7.58%	12.16%	1.50%	13.66%	5.71%	1.50%	7.21%	4.76%	1.50%	6.26%
57	6.11%	1.50%	7.61%	12.22%	1.50%	13.72%	5.71%	1.50%	7.21%	4.76%	1.50%	6.26%
58	6.12%	1.50%	7.62%	12.23%	1.50%	13.73%	5.89%	1.50%	7.39%	4.91%	1.50%	6.41%
59	6.12%	1.50%	7.62%	12.23%	1.50%	13.73%	6.09%	1.50%	7.59%	5.08%	1.50%	6.58%
60	6.12%	1.50%	7.62%	12.23%	1.50%	13.73/0	0.07/0	1.50%	1.57/0	5.5570	1.50/0	0.5070

Members do not pay COLA contributions

Assumptions:

Interest: 7.00%

Salary: 2016 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Mortality: Public General 2010 Above-Median Income - PUBG-2010(A) - Retiree Mortality Table, projected to 2044 using MP-2019

(blended 35% Male / 65% Female)



APPENDIX B – MEMBER CONTRIBUTION RATES

Civil Attorneys Association (30) and Unrepresented Confidential Attorneys (36) Effective July 1, 2020

		Plan 5A			Plan 5B			Plan 5C			Plan 7	
Entry Age	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total
16	3.01%	1.49%	4.50%	6.03%	1.49%	7.52%	2.92%	1.49%	4.41%	2.43%	1.49%	3.92%
17	3.01%	1.49%	4.50%	6.03%	1.49%	7.52%	2.92%	1.49%	4.41%	2.43%	1.49%	3.92%
18	3.01%	1.49%	4.50%	6.03%	1.49%	7.52%	2.92%	1.49%	4.41%	2.43%	1.49%	3.92%
19	3.01%	1.49%	4.50%	6.03%	1.49%	7.52%	2.92%	1.49%	4.41%	2.43%	1.49%	3.92%
20	3.01%	1.49%	4.50%	6.03%	1.49%	7.52%	2.92%	1.49%	4.41%	2.43%	1.49%	3.92%
21	3.08%	1.49%	4.57%	6.16%	1.49%	7.65%	2.98%	1.49%	4.47%	2.48%	1.49%	3.97%
22	3.14%	1.49%	4.63%	6.29%	1.49%	7.78%	3.04%	1.49%	4.53%	2.54%	1.49%	4.03%
23	3.21%	1.49%	4.70%	6.43%	1.49%	7.92%	3.11%	1.49%	4.60%	2.59%	1.49%	4.08%
24	3.28%	1.49%	4.77%	6.56%	1.49%	8.05%	3.18%	1.49%	4.67%	2.65%	1.49%	4.14%
25	3.35%	1.49%	4.84%	6.71%	1.49%	8.20%	3.24%	1.49%	4.73%	2.70%	1.49%	4.19%
26	3.42%	1.49%	4.91%	6.85%	1.49%	8.34%	3.31%	1.49%	4.80%	2.76%	1.49%	4.25%
27	3.50%	1.49%	4.99%	7.00%	1.49%	8.49%	3.38%	1.49%	4.87%	2.82%	1.49%	4.31%
28	3.57%	1.49%	5.06%	7.15%	1.49%	8.64%	3.46%	1.49%	4.95%	2.88%	1.49%	4.37%
29	3.65%	1.49%	5.14%	7.30%	1.49%	8.79%	3.53%	1.49%	5.02%	2.94%	1.49%	4.43%
30	3.73%	1.49%	5.22%	7.45%	1.49%	8.94%	3.61%	1.49%	5.10%	3.00%	1.49%	4.49%
31	3.81%	1.49%	5.30%	7.61%	1.49%	9.10%	3.68%	1.49%	5.17%	3.07%	1.49%	4.56%
32	3.89%	1.49%	5.38%	7.77%	1.49%	9.26%	3.76%	1.49%	5.25%	3.13%	1.49%	4.62%
33	3.97%	1.49%	5.46%	7.94%	1.49%	9.43%	3.84%	1.49%	5.33%	3.20%	1.49%	4.69%
34	4.05%	1.49%	5.54%	8.11%	1.49%	9.60%	3.92%	1.49%	5.41%	3.27%	1.49%	4.76%
35	4.14%	1.49%	5.63%	8.28%	1.49%	9.77%	4.01%	1.49%	5.50%	3.34%	1.49%	4.83%
36	4.23%	1.49%	5.72%	8.46%	1.49%	9.95%	4.09%	1.49%	5.58%	3.41%	1.49%	4.90%
37	4.32%	1.49%	5.81%	8.64%	1.49%	10.13%	4.18%	1.49%	5.67%	3.48%	1.49%	4.97%
38	4.41%	1.49%	5.90%	8.82%	1.49%	10.31%	4.27%	1.49%	5.76%	3.55%	1.49%	5.04%
39	4.50%	1.49%	5.99%	9.01%	1.49%	10.50%	4.35%	1.49%	5.84%	3.63%	1.49%	5.12%
40	4.60%	1.49%	6.09%	9.20%	1.49%	10.69%	4.45%	1.49%	5.94%	3.70%	1.49%	5.19%
41	4.69%	1.49%	6.18%	9.39%	1.49%	10.88%	4.54%	1.49%	6.03%	3.78%	1.49%	5.27%
42	4.79%	1.49%	6.28%	9.58%	1.49%	11.07%	4.63%	1.49%	6.12%	3.86%	1.49%	5.35%
43	4.89%	1.49%	6.38%	9.78%	1.49%	11.27%	4.72%	1.49%	6.21%	3.94%	1.49%	5.43%
44	4.99%	1.49%	6.48%	9.99%	1.49%	11.48%	4.82%	1.49%	6.31%	4.02%	1.49%	5.51%
45	5.09%	1.49%	6.58%	10.19%	1.49%	11.68%	4.91%	1.49%	6.40%	4.09%	1.49%	5.58%
46	5.20%	1.49%	6.69%	10.39%	1.49%	11.88%	5.00%	1.49%	6.49%	4.17%	1.49%	5.66%
47	5.29%	1.49%	6.78%	10.59%	1.49%	12.08%	5.09%	1.49%	6.58%	4.25%	1.49%	5.74%
48	5.39%	1.49%	6.88%	10.78%	1.49%	12.27%	5.18%	1.49%	6.67%	4.32%	1.49%	5.81%
49	5.49%	1.49%	6.98%	10.98%	1.49%	12.47%	5.27%	1.49%	6.76%	4.39%	1.49%	5.88%
50	5.58%	1.49%	7.07%	11.17%	1.49%	12.66%	5.36%	1.49%	6.85%	4.47%	1.49%	5.96%
51	5.68%	1.49%	7.17%	11.36%	1.49%	12.85%	5.45%	1.49%	6.94%	4.54%	1.49%	6.03%
52	5.78%	1.49%	7.27%	11.56%	1.49%	13.05%	5.53%	1.49%	7.02%	4.61%	1.49%	6.10%
53	5.87%	1.49%	7.36%	11.74%	1.49%	13.23%	5.60%	1.49%	7.09%	4.67%	1.49%	6.16%
54	5.96%	1.49%	7.45%	11.92%	1.49%	13.41%	5.65%	1.49%	7.14%	4.71%	1.49%	6.20%
55	6.03%	1.49%	7.52%	12.06%	1.49%	13.55%	5.69%	1.49%	7.18%	4.74%	1.49%	6.23%
56	6.08%	1.49%	7.57%	12.16%	1.49%	13.65%	5.71%	1.49%	7.20%	4.76%	1.49%	6.25%
57	6.11%	1.49%	7.60%	12.22%	1.49%	13.71%	5.71%	1.49%	7.20%	4.76%	1.49%	6.25%
58	6.12%	1.49%	7.61%	12.23%	1.49%	13.72%	5.89%	1.49%	7.38%	4.91%	1.49%	6.40%
59	6.12%	1.49%	7.61%	12.23%	1.49%	13.72%	6.09%	1.49%	7.58%	5.08%	1.49%	6.57%
60	6.12%	1.49%	7.61%	12.23%	1.49%	13.72%	6.09%	1.49%	7.58%	5.08%	1.49%	6.57%

Members do not pay COLA contributions

Assumptions:

Interest: 7.00%

Salary: 2019 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Mortality: Public General 2010 Above-Median Income - PUBG-2010(A) - Retiree Mortality Table, projected to 2044 using MP-2019

(blended 35% Male / 65% Female)



APPENDIX B – MEMBER CONTRIBUTION RATES

			U	nreprese	ented Manage	rs (incl Cl	EO) (35,4	10,41,42,43)				
					Effectiv	e July 1, 2	2020					
		Plan 5A			Plan 5B			Plan 5C			Plan 7	
Entry Age	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total	Basic	Cost-Sharing	Total
16	3.01%	2.49%	5.50%	6.03%	2.49%	8.52%	2.92%	2,49%	5.41%	2.43%	2.49%	4.92%
17	3.01%	2.49%	5.50%	6.03%	2.49%	8.52%	2.92%	2.49%	5.41%	2.43%	2.49%	4.92%
18	3.01%	2.49%	5.50%	6.03%	2.49%	8.52%	2.92%	2.49%	5.41%	2.43%	2.49%	4.92%
19	3.01%	2.49%	5.50%	6.03%	2.49%	8.52%	2.92%	2.49%	5.41%	2.43%	2.49%	4.92%
20	3.01%	2.49%	5.50%	6.03%	2.49%	8.52%	2.92%	2.49%	5.41%	2.43%	2.49%	4.92%
21	3.08%	2.49%	5.57%	6.16%	2.49%	8.65%	2.98%	2.49%	5.47%	2.48%	2.49%	4.97%
22	3.14%	2.49%	5.63%	6.29%	2.49%	8.78%	3.04%	2.49%	5.53%	2.54%	2.49%	5.03%
23	3.21%	2.49%	5.70%	6.43%	2.49%	8.92%	3.11%	2.49%	5.60%	2.59%	2.49%	5.08%
24	3.28%	2.49%	5.77%	6.56%	2.49%	9.05%	3.18%	2.49%	5.67%	2.65%	2.49%	5.14%
25	3.35%	2.49%	5.84%	6.71%	2.49%	9.20%	3.24%	2.49%	5.73%	2.70%	2.49%	5.19%
26	3.42%	2.49%	5.91%	6.85%	2.49%	9.34%	3.31%	2.49%	5.80%	2.76%	2.49%	5.25%
27	3.50%	2.49%	5.99%	7.00%	2.49%	9.49%	3.38%	2.49%	5.87%	2.82%	2.49%	5.31%
28	3.57%	2.49%	6.06%	7.15%	2.49%	9.64%	3.46%	2.49%	5.95%	2.88%	2.49%	5.37%
29	3.65%	2.49%	6.14%	7.30%	2.49%	9.79%	3.53%	2.49%	6.02%	2.94%	2.49%	5.43%
30	3.73%	2.49%	6.22%	7.45%	2.49%	9.94%	3.61%	2.49%	6.10%	3.00%	2.49%	5.49%
31	3.81%	2.49%	6.30%	7.61%	2.49%	10.10%	3.68%	2.49%	6.17%	3.07%	2.49%	5.56%
32	3.89%	2.49%	6.38%	7.77%	2.49%	10.26%	3.76%	2.49%	6.25%	3.13%	2.49%	5.62%
33	3.97%	2.49%	6.46%	7.94%	2.49%	10.43%	3.84%	2.49%	6.33%	3.20%	2.49%	5.69%
34	4.05%	2.49%	6.54%	8.11%	2.49%	10.60%	3.92%	2.49%	6.41%	3.27%	2.49%	5.76%
35	4.14%	2.49%	6.63%	8.28%	2.49%	10.77%	4.01%	2.49%	6.50%	3.34%	2.49%	5.83%
36	4.23%	2.49%	6.72%	8.46%	2.49%	10.95%	4.09%	2.49%	6.58%	3.41%	2.49%	5.90%
37	4.32%	2.49%	6.81%	8.64%	2.49%	11.13%	4.18%	2.49%	6.67%	3.48%	2.49%	5.97%
38	4.41%	2.49%	6.90%	8.82%	2.49%	11.31%	4.27%	2.49%	6.76%	3.55%	2.49%	6.04%
39	4.50%	2.49%	6.99%	9.01%	2.49%	11.50%	4.35%	2.49%	6.84%	3.63%	2.49%	6.12%
40	4.60%	2.49%	7.09%	9.20%	2.49%	11.69%	4.45%	2.49%	6.94%	3.70%	2.49%	6.19%
41	4.69%	2.49%	7.18%	9.39%	2.49%	11.88%	4.54%	2.49%	7.03%	3.78%	2.49%	6.27%
42	4.79%	2.49%	7.28%	9.58%	2.49%	12.07%	4.63%	2.49%	7.12%	3.86%	2.49%	6.35%
43	4.89%	2.49%	7.38%	9.78%	2.49%	12.27%	4.72%	2.49%	7.21%	3.94%	2.49%	6.43%
44	4.99%	2.49%	7.48%	9.99%	2.49%	12.48%	4.82%	2.49%	7.31%	4.02%	2.49%	6.51%
45	5.09%	2.49%	7.58%	10.19%	2.49%	12.68%	4.91%	2.49%	7.40%	4.09%	2.49%	6.58%
46	5.20%	2.49%	7.69%	10.39%	2.49%	12.88%	5.00%	2.49%	7.49%	4.17%	2.49%	6.66%
47	5.29%	2.49%	7.78%	10.59%	2.49%	13.08%	5.09%	2.49%	7.58%	4.25%	2.49%	6.74%
48	5.39%	2.49%	7.88%	10.78%	2.49%	13.27%	5.18%	2.49%	7.67%	4.32%	2.49%	6.81%
49	5.49%	2.49%	7.98%	10.98%	2.49%	13.47%	5.27%	2.49%	7.76%	4.39%	2.49%	6.88%
50	5.58%	2.49%	8.07%	11.17%	2.49%	13.66%	5.36%	2.49%	7.85%	4.47%	2.49%	6.96%
51	5.68%	2.49%	8.17%	11.36%	2.49%	13.85%	5.45%	2.49%	7.94%	4.54%	2.49%	7.03%
52	5.78%	2.49%	8.27%	11.56%	2.49%	14.05%	5.53%	2.49%	8.02%	4.61%	2.49%	7.10%
53	5.87%	2.49%	8.36%	11.74%	2.49%	14.23%	5.60%	2.49%	8.09%	4.67%	2.49%	7.16%
54	5.96%	2.49%	8.45%	11.92%	2.49%	14.41%	5.65%	2.49%	8.14%	4.71%	2.49%	7.20%
55	6.03%	2.49%	8.52%	12.06%	2.49%	14.55%	5.69%	2.49%	8.18%	4.74%	2.49%	7.23%
56	6.08%	2.49%	8.57%	12.16%	2.49%	14.65%	5.71%	2.49%	8.20%	4.76%	2.49%	7.25%
57	6.11%	2.49%	8.60%	12.22%	2.49%	14.71%	5.71%	2.49%	8.20%	4.76%	2.49%	7.25%
58	6.12%	2.49%	8.61%	12.23%	2.49%	14.72%	5.89%	2.49%	8.38%	4.91%	2.49%	7.40%
59	6.12%	2.49%	8.61%	12.23%	2.49%	14.72%	6.09%	2.49%	8.58%	5.08%	2.49%	7.57%
60	6.12%	2.49%	8.61%	12.23%	2.49%	14.72%	6.09%	2.49%	8.58%	5.08%	2.49%	7.57%

Members do not pay COLA contributions

Assumptions:

Interest: 7.00%

Salary: 2019 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Mortality: Public General 2010 Above-Median Income - PUBG-2010(A) - Retiree Mortality Table, projected to 2044 using MP-2019

(blended 35% Male / 65% Female)



APPENDIX B – MEMBER CONTRIBUTION RATES

	Unrepresented Managers Safety (35,40,41,42,43)									
					July 1, 2020					
		Plan 4A & 6A			Plan 4B			Plan 4C & 6B		
Entry Age	Basic	Cost Sharing	Total	Basic	Cost Sharing	Total	Basic	Cost Sharing	Total	
16	5.58%	0.83%	6.41%	11.15%	0.83%	11.98%	5.38%	0.83%	6.21%	
17	5.58%	0.83%	6.41%	11.15%	0.83%	11.98%	5.38%	0.83%	6.21%	
18	5.58%	0.83%	6.41%	11.15%	0.83%	11.98%	5.38%	0.83%	6.21%	
19	5.58%	0.83%	6.41%	11.15%	0.83%	11.98%	5.38%	0.83%	6.21%	
20	5.58%	0.83%	6.41%	11.15%	0.83%	11.98%	5.38%	0.83%	6.21%	
21	5.68%	0.83%	6.51%	11.36%	0.83%	12.19%	5.48%	0.83%	6.31%	
22	5.79%	0.83%	6.62%	11.57%	0.83%	12.40%	5.58%	0.83%	6.41%	
23	5.89%	0.83%	6.72%	11.79%	0.83%	12.62%	5.68%	0.83%	6.51%	
24	6.00%	0.83%	6.83%	12.01%	0.83%	12.84%	5.79%	0.83%	6.62%	
25	6.11%	0.83%	6.94%	12.23%	0.83%	13.06%	5.90%	0.83%	6.73%	
26	6.23%	0.83%	7.06%	12.46%	0.83%	13.29%	6.00%	0.83%	6.83%	
27	6.34%	0.83%	7.17%	12.69%	0.83%	13.52%	6.12%	0.83%	6.95%	
28	6.46%	0.83%	7.29%	12.92%	0.83%	13.75%	6.23%	0.83%	7.06%	
29	6.58%	0.83%	7.41%	13.16%	0.83%	13.99%	6.34%	0.83%	7.17%	
30	6.70%	0.83%	7.53%	13.40%	0.83%	14.23%	6.46%	0.83%	7.29%	
31	6.83%	0.83%	7.66%	13.65%	0.83%	14.48%	6.58%	0.83%	7.41%	
32	6.95%	0.83%	7.78%	13.91%	0.83%	14.74%	6.70%	0.83%	7.53%	
33	7.08%	0.83%	7.91%	14.17%	0.83%	15.00%	6.83%	0.83%	7.66%	
34	7.22%	0.83%	8.05%	14.43%	0.83%	15.26%	6.96%	0.83%	7.79%	
35	7.35%	0.83%	8.18%	14.70%	0.83%	15.53%	7.08%	0.83%	7.91%	
36	7.49%	0.83%	8.32%	14.98%	0.83%	15.81%	7.21%	0.83%	8.04%	
37	7.63%	0.83%	8.46%	15.25%	0.83%	16.08%	7.35%	0.83%	8.18%	
38	7.77%	0.83%	8.60%	15.53%	0.83%	16.36%	7.48%	0.83%	8.31%	
39	7.91%	0.83%	8.74%	15.82%	0.83%	16.65%	7.62%	0.83%	8.45%	
40	8.06%	0.83%	8.89%	16.11%	0.83%	16.94%	7.75%	0.83%	8.58%	
41	8.20%	0.83%	9.03%	16.41%	0.83%	17.24%	7.89%	0.83%	8.72%	
42	8.36%	0.83%	9.19%	16.71%	0.83%	17.54%	8.04%	0.83%	8.87%	
43	8.51%	0.83%	9.34%	17.02%	0.83%	17.85%	8.18%	0.83%	9.01%	
44	8.67%	0.83%	9.50%	17.33%	0.83%	18.16%	8.33%	0.83%	9.16%	
45	8.83%	0.83%	9.66%	17.65%	0.83%	18.48%	8.47%	0.83%	9.30%	
46	8.99%	0.83%	9.82%	17.98%	0.83%	18.81%	8.61%	0.83%	9.44%	
47	9.15%	0.83%	9.98%	18.31%	0.83%	19.14%	8.74%	0.83%	9.57%	
48	9.31%	0.83%	10.14%	18.62%	0.83%	19.45%	8.85%	0.83%	9.68%	
49	9.45%	0.83%	10.28%	18.89%	0.83%	19.72%	8.93%	0.83%	9.76%	
50	9.56%	0.83%	10.39%	19.12%	0.83%	19.95%	8.98%	0.83%	9.81%	
51	9.63%	0.83%	10.46%	19.25%	0.83%	20.08%	8.98%	0.83%	9.81%	
52	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	8.98%	0.83%	9.81%	
53	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.21%	0.83%	10.04%	
54	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.52%	0.83%	10.35%	
55	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.52%	0.83%	10.35%	
56	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.52%	0.83%	10.35%	
57	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.52%	0.83%	10.35%	
58	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.52%	0.83%	10.35%	
59	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.52%	0.83%	10.35%	
60	9.65%	0.83%	10.48%	19.30%	0.83%	20.13%	9.52%	0.83%	10.35%	

Members do not pay COLA contributions

Assumptions:

Interest: 7.00%

Salary: 2019 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Public Safety 2010 – PUBS-2010 – Retiree Mortality Table, projected to 2044 using MP-2019

Mortality: (blended 80% Male / 20% Female)

Administrative Rates have been loaded by 3% to account for expected administrative expenses allocated to

expeneses: the members.



APPENDIX B – MEMBER CONTRIBUTION RATES

Fire Fighters Local 2046 (12,13), Deputy Sheriffs' Association - Safety (14,15) Probation Peace Officers (18,19), Sheriffs Managers Association (44)

Effective July 1, 2020

		Plan 4A & 6A			Plan 4B			Plan 4C & 6B	
Entry Age	Basic	Cost Sharing	Total	Basic	Cost Sharing	Total	Basic	Cost Sharing	Total
16	5.58%	6.00%	11.58%	11.15%	6.00%	17.15%	5.38%	6.00%	11.38%
17	5.58%	6.00%	11.58%	11.15%	6.00%	17.15%	5.38%	6.00%	11.38%
18	5.58%	6.00%	11.58%	11.15%	6.00%	17.15%	5.38%	6.00%	11.38%
19	5.58%	6.00%	11.58%	11.15%	6.00%	17.15%	5.38%	6.00%	11.38%
20	5.58%	6.00%	11.58%	11.15%	6.00%	17.15%	5.38%	6.00%	11.38%
21	5.68%	6.00%	11.68%	11.36%	6.00%	17.36%	5.48%	6.00%	11.48%
22	5.79%	6.00%	11.79%	11.57%	6.00%	17.57%	5.58%	6.00%	11.58%
23	5.89%	6.00%	11.89%	11.79%	6.00%	17.79%	5.68%	6.00%	11.68%
24	6.00%	6.00%	12.00%	12.01%	6.00%	18.01%	5.79%	6.00%	11.79%
25	6.11%	6.00%	12.11%	12.23%	6.00%	18.23%	5.90%	6.00%	11.90%
26	6.23%	6.00%	12.23%	12.46%	6.00%	18.46%	6.00%	6.00%	12.00%
27	6.34%	6.00%	12.34%	12.69%	6.00%	18.69%	6.12%	6.00%	12.12%
28	6.46%	6.00%	12.46%	12.92%	6.00%	18.92%	6.23%	6.00%	12.23%
29	6.58%	6.00%	12.58%	13.16%	6.00%	19.16%	6.34%	6.00%	12.34%
30	6.70%	6.00%	12.70%	13.40%	6.00%	19.40%	6.46%	6.00%	12.46%
31	6.83%	6.00%	12.83%	13.65%	6.00%	19.65%	6.58%	6.00%	12.58%
32	6.95%	6.00%	12.95%	13.91%	6.00%	19.91%	6.70%	6.00%	12.70%
33	7.08%	6.00%	13.08%	14.17%	6.00%	20.17%	6.83%	6.00%	12.83%
34	7.22%	6.00%	13.22%	14.43%	6.00%	20.43%	6.96%	6.00%	12.96%
35	7.35%	6.00%	13.35%	14.70%	6.00%	20.70%	7.08%	6.00%	13.08%
36	7.49%	6.00%	13.49%	14.98%	6.00%	20.98%	7.21%	6.00%	13.21%
37	7.63%	6.00%	13.63%	15.25%	6.00%	21.25%	7.35%	6.00%	13.35%
38	7.77%	6.00%	13.77%	15.53%	6.00%	21.53%	7.48%	6.00%	13.48%
39	7.91%	6.00%	13.91%	15.82%	6.00%	21.82%	7.62%	6.00%	13.62%
40	8.06%	6.00%	14.06%	16.11%	6.00%	22.11%	7.75%	6.00%	13.75%
41	8.20%	6.00%	14.20%	16.41%	6.00%	22.41%	7.89%	6.00%	13.89%
42	8.36%	6.00%	14.36%	16.71%	6.00%	22.71%	8.04%	6.00%	14.04%
43	8.51%	6.00%	14.51%	17.02%	6.00%	23.02%	8.18%	6.00%	14.18%
44	8.67%	6.00%	14.67%	17.33%	6.00%	23.33%	8.33%	6.00%	14.33%
45	8.83%	6.00%	14.83%	17.65%	6.00%	23.65%	8.47%	6.00%	14.47%
46	8.99%	6.00%	14.99%	17.98%	6.00%	23.98%	8.61%	6.00%	14.61%
47	9.15%	6.00%	15.15%	18.31%	6.00%	24.31%	8.74%	6.00%	14.74%
48	9.31%	6.00%	15.31%	18.62%	6.00%	24.62%	8.85%	6.00%	14.85%
49	9.45%	6.00%	15.45%	18.89%	6.00%	24.89%	8.93%	6.00%	14.93%
50	9.56%	6.00%	15.56%	19.12%	6.00%	25.12%	8.98%	6.00%	14.98%
51	9.63%	6.00%	15.63%	19.25%	6.00%	25.25%	8.98%	6.00%	14.98%
52	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	8.98%	6.00%	14.98%
53	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.21%	6.00%	15.21%
54	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.52%	6.00%	15.52%
55	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.52%	6.00%	15.52%
56	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.52%	6.00%	15.52%
57	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.52%	6.00%	15.52%
58	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.52%	6.00%	15.52%
59	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.52%	6.00%	15.52%
60	9.65%	6.00%	15.65%	19.30%	6.00%	25.30%	9.52%	6.00%	15.52%

Members do not pay COLA contributions

Assumptions:

Interest: 7.00%

Salary: 2019 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Public Safety 2010 – PUBS-2010 – Retiree Mortality Table, projected to 2044 using MP-2019

Mortality: (blended 80% Male / 20% Female)

Administrative Rates have been loaded by 3% to account for expected administrative expenses allocated to

expeneses: the members.



APPENDIX B – MEMBER CONTRIBUTION RATES

Basic Member Contribution Rates Effective July 1, 2020									
Entry Age	5A	5B	5C	7	1	2	4A & 6A	4B	4C & 6I
16	3.01%	6.03%	2.92%	2.43%	3.53%	7.06%	5.58%	11.15%	5.38%
17	3.01%	6.03%	2.92%	2.43%	3.53%	7.06%	5.58%	11.15%	5.38%
18	3.01%	6.03%	2.92%	2.43%	3.53%	7.06%	5.58%	11.15%	5.38%
19	3.01%	6.03%	2.92%	2.43%	3.53%	7.06%	5.58%	11.15%	5.38%
20	3.01%	6.03%	2.92%	2.43%	3.53%	7.06%	5.58%	11.15%	5.38%
21	3.08%	6.16%	2.98%	2.48%	3.60%	7.21%	5.68%	11.36%	5.48%
22	3.14%	6.29%	3.04%	2.54%	3.68%	7.36%	5.79%	11.57%	5.58%
23	3.21%	6.43%	3.11%	2.59%	3.76%	7.52%	5.89%	11.79%	5.68%
24	3.28%	6.56%	3.18%	2.65%	3.84%	7.68%	6.00%	12.01%	5.79%
25	3.35%	6.71%	3.24%	2.70%	3.92%	7.84%	6.11%	12.23%	5.90%
26	3.42%	6.85%	3.31%	2.76%	4.01%	8.01%	6.23%	12.46%	6.00%
27	3.50%	7.00%	3.38%	2.82%	4.09%	8.18%	6.34%	12.69%	6.12%
28	3.57%	7.15%	3.46%	2.88%	4.18%	8.36%	6.46%	12.92%	6.23%
29	3.65%	7.30%	3.53%	2.94%	4.27%	8.53%	6.58%	13.16%	6.34%
30	3.73%	7.45%	3.61%	3.00%	4.36%	8.72%	6.70%	13.40%	6.46%
31	3.81%	7.61%	3.68%	3.07%	4.45%	8.90%	6.83%	13.65%	6.58%
32	3.89%	7.77%	3.76%	3.13%	4.55%	9.09%	6.95%	13.91%	6.70%
33	3.97%	7.94%	3.84%	3.20%	4.64%	9.28%	7.08%	14.17%	6.83%
34	4.05%	8.11%	3.92%	3.27%	4.74%	9.48%	7.22%	14.43%	6.96%
35	4.14%	8.28%	4.01%	3.34%	4.84%	9.68%	7.35%	14.70%	7.08%
36	4.23%	8.46%	4.09%	3.41%	4.94%	9.88%	7.49%	14.98%	7.21%
37	4.32%	8.64%	4.18%	3.48%	5.04%	10.09%	7.63%	15.25%	7.35%
38	4.41%	8.82%	4.27%	3.55%	5.15%	10.30%	7.77%	15.53%	7.48%
39	4.50%	9.01%	4.35%	3.63%	5.26%	10.51%	7.91%	15.82%	7.62%
40	4.60%	9.20%	4.45%	3.70%	5.36%	10.72%	8.06%	16.11%	7.75%
40	4.69%	9.20%	4.45%	3.78%	5.47%	10.72%	8.20%	16.41%	7.73%
42								16.71%	
	4.79% 4.89%	9.58%	4.63%	3.86%	5.57%	11.14%	8.36%		8.04%
43 44	1	9.78%	4.72%	3.94%	5.68%	11.35%	8.51%	17.02%	8.18%
	4.99%	9.99%	4.82%	4.02%	5.78%	11.55%	8.67%	17.33%	8.33%
45	5.09%	10.19%	4.91%	4.09%	5.88%	11.76%	8.83%	17.65%	8.47%
46	5.20%	10.39%	5.00%	4.17%	5.98%	11.96%	8.99%	17.98%	8.61%
47	5.29%	10.59%	5.09%	4.25%	6.08%	12.17%	9.15%	18.31%	8.74%
48	5.39%	10.78%	5.18%	4.32%	6.18%	12.36%	9.31%	18.62%	8.85%
49	5.49%	10.98%	5.27%	4.39%	6.27%	12.54%	9.45%	18.89%	8.93%
50	5.58%	11.17%	5.36%	4.47%	6.34%	12.69%	9.56%	19.12%	8.98%
51	5.68%	11.36%	5.45%	4.54%	6.40%	12.80%	9.63%	19.25%	8.98%
52	5.78%	11.56%	5.53%	4.61%	6.43%	12.87%	9.65%	19.30%	8.98%
53	5.87%	11.74%	5.60%	4.67%	6.44%	12.88%	9.65%	19.30%	9.21%
54	5.96%	11.92%	5.65%	4.71%	6.44%	12.88%	9.65%	19.30%	9.52%
55	6.03%	12.06%	5.69%	4.74%	6.44%	12.88%	9.65%	19.30%	9.52%
56	6.08%	12.16%	5.71%	4.76%	6.44%	12.88%	9.65%	19.30%	9.52%
57	6.11%	12.22%	5.71%	4.76%	6.44%	12.88%	9.65%	19.30%	9.52%
58	6.12%	12.23%	5.89%	4.91%	6.44%	12.88%	9.65%	19.30%	9.52%
59	6.12%	12.23%	6.09%	5.08%	6.44%	12.88%	9.65%	19.30%	9.52%
60	6.12%	12.23%	6.09%	5.08%	6.44%	12.88%	9.65%	19.30%	9.52%

Interest: 7.00%

Salary: 2019 Valuation Scale (Service based, includes wage inflation at 3.00%)

Unisex Public General 2010 Above-Median Income and Public Safety 2010 Retiree Mortality Tables Mortality: projected to 2044 using Scale MP-2019 (blended 35% Male / 65% Female for General and APCD,

and blended 80% Male / 20% Female for Safety)

Administrative Rates have been loaded by 3% to account for expected administrative expenses allocated to

expenses: the members.



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Contribution Allocation Procedure

The contribution allocation procedure primarily consists of an actuarial cost method, an asset valuation method, and an amortization method as described below. There were no changes to the contribution allocation procedures from the prior valuation.

1. Actuarial Cost Method

The actuarial valuation is prepared using the Entry Age Actuarial Cost Method (CERL 31453.5). Under the principles of this method, the actuarial present value of the projected benefits of each individual included in the valuation is allocated as a level percentage of the individual's projected compensation between entry age and assumed exit (until maximum retirement age). For members who transferred between plans, entry age is based on original entry into the system. The normal cost for the Plan is based on the sum of the individual normal costs for each member (Individual Entry Age Method).

2. Amortization Method

The UAL (or Surplus Funding) is amortized as a percentage of the projected salaries of present and future members of SBCERS. Effective with the June 30, 2013 valuation, the UAL as of June 30, 2013 is amortized over a closed 17-year period, except for the additional UAL attributable to the creation of Safety Plan 6, which is being amortized over a separate closed period (currently eight years). Effective with the June 30, 2014 valuation, any new sources of UAL due to actuarial gains and losses, assumption changes, or method changes is amortized over a closed 19-year period, with five-year ramp up period at the beginning of the period, a four-year ramp down at the end of the period, and 10 years of level payments as a percentage of payroll. This new method is a type of direct rate smoothing method.

The single equivalent amortization period is 14 years. As of June 30, 2020, it would take approximately 14 years to fully pay off the total Unfunded Actuarial Liability based on the current UAL payment increasing as a level percentage of payroll.

3. Asset Valuation Method

As of June 30, 2014, the Market Value of Assets is used to determine the System's UAL. A smoothed Actuarial Value of Assets is no longer used.



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

The assumptions used in this report reflect the results of an experience study performed by Cheiron covering the period from July 1, 2016 through June 30, 2019. More details on the rationale for the demographic and economic assumptions can be found in the Actuarial Experience Study report presented to the Board on January 22, 2020.

1. Rate of Return

Assets are assumed to earn 7.00%, net of investment expenses.

2. Administrative Expenses

Administrative expenses are assumed to be \$5.5 million for the next year, to be split between employees and employers based on their share of the overall contributions. This is equivalent to a 3% load to both the member and employer contribution rates. Administrative expenses are assumed to increase by the assumed wage inflation of 3.00% each year.

3. Cost-of-Living

The cost-of-living as measured by the Consumer Price Index (CPI) will increase at the rate of 2.75% per year. This assumption is also used for increasing the compensation limit that applies to PEPRA members.

4. Post Retirement COLA

Benefits are assumed to increase after retirement at the rate of 2.6% per year for General Plans 5, Safety Plans 4, 6 and 8 (PEPRA), and APCD Plans 1 and 2; 1.90% per year for General Plans 7 and APCD Plan 8 (PEPRA), and 0% per year for General Plan 2.

For General Plan 8 (PEPRA), benefits are assumed to increase at the rate of 1.90% per year if their employer had implemented General Plan 7 prior to January 1, 2013. Otherwise, benefits are assumed to increase at the rate of 2.6% per year.

5. Internal Revenue Code Section 415 Limit

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

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

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



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

7. Social Security Wage Base

General Plan 2 members have their benefits offset by an assumed Social Security Benefit. For projecting the Social Security Benefit, the annual Social Security Wage Base increase is assumed to be 2.75% per year.

8. Interest on Member Contributions

The annual credited interest rate on member contributions is assumed to be 3.25%. As of June 30, 2008, the credited interest rate each six-month period is the semi-annual yield of the five-year Treasury note as of the last business day of the interest-crediting period.

9. Sick Leave Service Credit Upon Retirement

Upon retirement, members are entitled to turn their sick leave balances into service credit for retirement benefits. Members are limited to one year of service credit. For safety plan members, a 2.25% load was applied to the expected years of service at retirement for sick leave service credit. For general plan members, the load was 1.25%.

10. Family Composition

Percentage married for all active members who retire, become disabled, or die during active service is shown in the table below. Male members are assumed to be three years older than their spouses and female members are assumed to be one year younger than their spouses.

Percentage Married							
Gender Percentage							
Males	75%						
Females	60%						

11. Vacation Cash Out

Any cash outs of vacation during the final average salary period affecting the calculation of a retirement benefit are recognized at the time of retirement. There is no pre-recognition of potential costs included in the valuation.



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

12. Increases in Pay

Wage inflation component: 3.00%

Additional longevity and promotion component:

Longevi	ity and Promotic	on Increases
Service	General	Safety
0	4.75%	6.00%
1	4.00%	5.00%
2	3.25%	4.00%
3	2.75%	3.25%
4	2.25%	2.50%
5	1.75%	2.00%
6	1.50%	1.60%
7	1.25%	1.30%
8	1.20%	1.20%
9	1.10%	1.10%
10	1.00%	1.00%
11	0.90%	1.00%
12	0.80%	0.92%
13	0.70%	0.89%
14	0.60%	0.87%
15	0.55%	0.85%
16	0.50%	0.82%
17	0.48%	0.80%
18	0.46%	0.77%
19	0.44%	0.75%
20	0.42%	0.75%
21	0.40%	0.75%
22	0.38%	0.75%
23	0.38%	0.75%
24	0.38%	0.75%
25	0.38%	0.75%
26	0.38%	0.75%
27	0.38%	0.75%
28	0.38%	0.75%
29	0.38%	0.75%
30+	0.38%	0.75%

Increases are compound rather than additive.



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

13. Rates of Termination

Sample rates of termination are shown in the following table below. The 1.30% rate of termination continues for Safety PEPRA members with 20 or more years of service who are not eligible to retire.

Ra	tes of Termina	ntion
Service	General	Safety
0	20.00%	9.00%
1	14.00%	9.00%
2	10.00%	3.50%
3	8.00%	3.00%
4	7.00%	3.00%
5	7.00%	5.00%
6	6.00%	2.75%
7	6.00%	2.75%
8	6.00%	2.75%
9	5.00%	2.75%
10	4.50%	2.00%
11	3.50%	1.50%
12	3.00%	1.30%
13	3.00%	1.30%
14	2.75%	1.30%
15	2.75%	1.30%
16	2.75%	1.30%
17	2.50%	1.30%
18	2.50%	1.30%
19	2.50%	1.30%
20	1.50%	0.00%
21	1.50%	
22	1.50%	
23	1.50%	
24	1.50%	
25	1.50%	
26	1.50%	
27	1.50%	
28	1.50%	
29	1.50%	
30	0.00%	

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



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

14. Withdrawal

Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits.

Rates of Withdrawal								
Service	General	Safety						
0	100.00%	100.00%						
1	100.00%	100.00%						
2	100.00%	100.00%						
3	100.00%	100.00%						
4	100.00%	100.00%						
5	20.00%	15.00%						
6	20.00%	15.00%						
7	20.00%	15.00%						
8	20.00%	15.00%						
9	20.00%	15.00%						
10	15.00%	10.00%						
11	15.00%	10.00%						
12	15.00%	10.00%						
13	15.00%	10.00%						
14	15.00%	10.00%						
15	10.00%	5.00%						
16	10.00%	5.00%						
17	10.00%	5.00%						
18	10.00%	5.00%						
19	10.00%	5.00%						
20	5.00%	0.00%						
21	5.00%	0.00%						
22	5.00%	0.00%						
23	5.00%	0.00%						
24	5.00%	0.00%						
25	0.00%	0.00%						
26	0.00%	0.00%						
27	0.00%	0.00%						
28	0.00%	0.00%						
29	0.00%	0.00%						
30	0.00%	0.00%						



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Former members with contributions on deposit who commence benefits from deferred vested status are assumed to receive a retirement benefit commencing at the following ages:

General Plans 5, 7, and 8 (PEPRA) Members:	Age 58
General Plan 2 Members:	Age 60
Safety Plans 4 and 8 (PEPRA) Members:	Age 55
Safety Plan 6 Members:	Age 52
APCD Members:	Age 58

15. Reciprocal Transfers

30% of vested terminated General (except Plan 2) and 35% of vested terminated Safety Members that leave their member contributions on deposit with the Plan are assumed to be reciprocal.

Reciprocal members are assumed to remain with the reciprocal agency until retirement, and receive annual salary increases of:

General & APCD Members: 3.375% Safety Members: 3.750%

Reciprocal members are assumed to commence retirement benefits at the following ages:

General Plans 5, 7, and 8 (PEPRA) Members:	Age 60
General Plan 2 Members:	Age 60
Safety Plans 4 and 8 (PEPRA) Members:	Age 55
Safety Plan 6 Members:	Age 55
APCD Members:	Age 60



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

16. Rates of Disability

General member rates are based on the sex distinct CalPERS Non-Industrial Disability Miscellaneous Public Agency rates.

Safety members are based the sum of the Industrial and Non-Industrial Disability State Safety rates.

Representative disability rates of active participants are shown below.

Rates of Disability								
		Saf	ety					
		Years of	Service					
	Ma	lles	Fem	ales				
Age	Less than 5	5 or More	Less than 5	5 or More	Less than 5	5 or More		
20	0.009%	0.017%	0.009%	0.016%	0.034%	0.038%		
25	0.009%	0.017%	0.009%	0.016%	0.117%	0.130%		
30	0.010%	0.019%	0.013%	0.024%	0.210%	0.233%		
35	0.021%	0.039%	0.039%	0.071%	0.302%	0.336%		
40	0.056%	0.102%	0.074%	0.135%	0.389%	0.432%		
45	0.083%	0.151%	0.103%	0.188%	0.509%	0.565%		
50	0.087%	0.158%	0.109%	0.199%	0.682%	0.758%		
55	0.087%	0.158%	0.082%	0.149%	0.808%	0.898%		
60	0.084%	0.153%	0.058%	0.105%	0.974%	1.082%		
65	0.070%	0.128%	0.048%	0.088%	0.000%	0.000%		
70	0.056%	0.102%	0.046%	0.084%				
75	0.000%	0.000%	0.000%	0.000%				

55% of General disabilities and 90% of Safety disabilities where the member has five or more years of service are assumed to be service-related. All disabilities for those with less than five years or service are assumed to be service-related.

17. Rates of Mortality for Healthy Lives

Mortality rates for General active members are based on the sex distinct Public General 2010 Above-Median Income Employee Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2019, without adjustment.

Non-duty related mortality rates for Safety active members are based on the sex distinct Public Safety 2010 Employee Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2019, without adjustment.



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Safety active members are also subject to the 2014 CalPERS Preretirement Industrial Mortality Table for duty-related deaths, with generational improvement using Projection Scale MP-2019 from a base year of 2009.

Mortality rates for healthy General annuitants are based on the sex distinct Public General 2010 Above-Median Income Retiree Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2019.

Mortality rates for Safety annuitants are based the sex distinct Public Safety 2010 Retiree Mortality Table, with generational improvements projected from 2010 using Projection Scale MP-2019.

18. Rates of Mortality for Retired Disabled Lives

Mortality rates for disabled retirees are based on 2014 CalPERS Industrial Disabled Annuitant Mortality, with no adjustment (Safety only), 2014 CalPERS Non-Industrial Disabled Annuitant Mortality, with no adjustment (General only), with generational improvement using Projection Scale MP-2019 from a base year of 2009.

19. Benefit Payment Timing

End of the month

20. Benefit Load for Part-Time Employees

A load is applied to benefits for part-time active members who worked less than 2,080 in the previous plan year to better reflect their projected benefits at retirement. The loads are shown in the table below.

Partial Hours Member Load								
Hours Legacy PEPR								
< 1,040	2.500	1.000						
1,040 to 1,799	1.250	1.000						
1,800 to 2,079	1.085	1.000						

Members not identified as part-time but who work fewer than 2,080 hours are assumed to be on a leave of absence. For these members, salaries are annualized only for purposes of determining benefits and liabilities.



APPENDIX C – STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

21. Rates of Retirement

Rates of retirement are based on age and service according to the following table. The rates for Safety PEPRA members are the same as the Safety Plan 4 rates.

	Rates of Retirement										
								S	afety		
		General		General	- PEPRA		Plan 4			Plan 6	
Age	Svc < 20	20-29	Svc >= 30	Svc < 25	Svc >= 25	Svc < 20	20-29	Svc >= 30	Svc < 20	20-29	Svc >= 30
< 38	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
38	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
39	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
40	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
41	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
42	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
43	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
44	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
46	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
47	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
48	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	3.00%	3.00%
49	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	3.00%	0.00%	15.00%	50.00%
50	2.00%	2.00%	10.00%	0.00%	0.00%	3.00%	2.50%	5.00%	10.00%	25.00%	50.00%
51	2.50%	2.50%	4.00%	0.00%	0.00%	3.00%	2.50%	5.00%	10.00%	15.00%	20.00%
52	2.50%	2.50%	4.00%	2.00%	3.00%	3.00%	2.50%	5.00%	10.00%	15.00%	20.00%
53	4.00%	4.00%	4.00%	2.00%	2.00%	3.00%	5.00%	5.00%	7.50%	15.00%	20.00%
54	4.00%	4.00%	5.00%	3.00%	3.50%	10.00%	10.00%	30.00%	7.50%	15.00%	30.00%
55	4.00%	5.00%	10.00%	3.00%	7.00%	10.00%	25.00%	50.00%	7.50%	15.00%	35.00%
56	4.00%	5.00%	10.00%	3.00%	7.00%	10.00%	15.00%	25.00%	7.50%	15.00%	25.00%
57	7.00%	7.00%	10.00%	4.50%	6.00%	10.00%	15.00%	25.00%	10.00%	25.00%	25.00%
58	7.00%	7.00%	10.00%	4.50%	6.00%	10.00%	15.00%	40.00%	10.00%	25.00%	25.00%
59	7.00%	7.00%	15.00%	5.00%	10.00%	10.00%	30.00%	40.00%	15.00%	25.00%	25.00%
60	7.00%	10.00%	15.00%	5.00%	10.00%	10.00%	30.00%	50.00%	15.00%	25.00%	25.00%
61	15.00%	20.00%	30.00%	12.50%	15.00%	25.00%	30.00%	35.00%	20.00%	25.00%	25.00%
62	20.00%	30.00%	40.00%	15.00%	25.00%	25.00%	30.00%	35.00%	20.00%	25.00%	25.00%
63	15.00%	25.00%	40.00%	10.00%	25.00%	15.00%	30.00%	35.00%	10.00%	25.00%	25.00%
64	25.00%	25.00%	40.00%	15.00%	20.00%	15.00%	30.00%	35.00%	10.00%	25.00%	25.00%
65	30.00%	40.00%	50.00%	20.00%	30.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
66	30.00%	40.00%	50.00%	20.00%	30.00%						
67	26.00%	33.00%	40.00%	35.00%	40.00%						
68	26.00%	33.00%	40.00%	20.00%	30.00%						
69	26.00%	33.00%	40.00%	20.00%	30.00%						
70	26.00%	33.00%	40.00%	20.00%	30.00%						
71	26.00%	33.00%	40.00%	20.00%	30.00%						
72	26.00%	33.00%	40.00%	20.00%	30.00%						
73	26.00%	33.00%	40.00%	20.00%	30.00%						
74	26.00%	33.00%	40.00%	20.00%	30.00%						
75	100.00%	100.00%	100.00%	100.00%	100.00%						

22. Changes Since Last Valuation

A benefit load was added for part-time members who work fewer than 2,080 hours in the previous plan year in order to more accurately calculate retirement benefits.



APPENDIX D – SUMMARY OF PLAN PROVISIONS

All actuarial calculations are based on our understanding of the statutes governing the SBCERS as contained in the County Employees' Retirement Law (CERL) of 1937, with provisions adopted by the County Board of Supervisors, a district Board of Directors, or the SBCERS Board, effective through June 30, 2020. The benefit and contribution provisions of this law are summarized briefly below, (along with corresponding references to the State Code). This summary does not attempt to cover all the detailed provisions of the law.

There have been no changes to the Plan provisions since the prior valuation.

A. Membership in Retirement Plans

The County has established several defined benefit tiers based primarily on a member's date of entry into SBCERS and in some cases, bargaining unit. There are two types of SBCERS members:

Safety members: Employees whose principal duty is active law enforcement or active fire suppression are eligible to be Safety members. Membership in a particular tier depends upon date of entry to the system and bargaining unit.

General members: All non-Safety employees are eligible to be General members. Membership in a particular tier depends primarily upon date of entry to the system. General members employed by Santa Barbara County Air Pollution Control District (APCD) are in APCD Plan 1, APCD Plan 2, General Plan 7, or General Plan 8 depending upon their date of entry to the system.

APCD Plan 1: APCD employees hired on or before July 3, 1995.

APCD Plan 2: APCD employees hired after July 3, 1995.

General Plan 2: Employees hired on or before June 30, 1999, who elected to join

General Plan 2. Once vested, Plan 2 members have a one-time election to defer accrued Plan 2 benefits and enter a contributory plan in effect at the time of election. Contributions are based upon age at time of

transfer.

Safety Plan 4A &

General Plan 5A: General employees hired before October 10, 1994, who did not elect to

join General Plan 2, and some Safety employees hired before October

10, 1994.

Safety Plan 4B &

General Plan 5B: Employees in certain bargaining units hired on or after October 10,

1994. Some employees are in Safety Plan 4B without regard to hire date.



APPENDIX D – SUMMARY OF PLAN PROVISIONS

General Plan 5C: Members in certain bargaining units hired on or after October 10, 1994.

Members in those bargaining units transferred from Plan 5B on March

10, 2008.

General Plan 7: County General employees hired on or after June 25, 2012, and other

new non-PEPRA General hires for employers that have adopted Plan 7.

Safety Plan 4C: Members in certain bargaining units who were hired on or after October

10, 1994. All members in certain bargaining units. Members in those

bargaining units transferred from Plan 4B on July 3, 2006.

Safety Plan 6A: Members in certain bargaining units hired prior to October 10, 1994.

Members in those bargaining units transferred from Plan 4A on

February 25, 2008.

Safety Plan 6B: Members in certain bargaining units hired after October 10, 1994.

Members in those bargaining units transferred from Plan 4B on February

25, 2008.

Plan 8 (PEPRA): All new members hired on or after January 1, 2013. Employees who

transfer from and are eligible for reciprocity with another public employer will not be PEPRA members if their service in the reciprocal

system was under a pre-PEPRA tier.

B. Member Contributions

Basic: Contributions are based on the entry age and class of each member and

are required of all members except General Plan 2 members. See Appendix E for details on this calculation. Current member rates are

shown in the Appendix. (31453, 31454, 31454.1)

Contributions cease for all non-PEPRA safety members credited with 30

years of service. (31625, 31625.2)

Plan 8: PEPRA members must contribute half of the normal cost of the

Plan. Contributions for these members will be based on the Normal Cost

associated with their benefits; General and Safety members will pay

different rates.

Interest is credited to contributions semiannually on June 30 and December 31 at an interest rate set by the Board of Retirement on amounts that have been on deposit for at least six months. (31591,

31700)



APPENDIX D – SUMMARY OF PLAN PROVISIONS

Cost-of-Living: Some members may contribute towards the cost-of-living benefit based

on increases in COLA Normal Cost rates. No additional employee contributions towards the cost-of-living benefits are included in the

current employee rates.

Cost-Sharing: Members contribute a varying amount based on entry age and Plan.

General Plan 5A member rates are half General Plan 5B member rates.

General Plan 5C is based on half rates.

APCD Plan 1 member rates are half APCD Plan 2 member rates. Safety Plan 4A member rates are half Safety Plan 4B member rates.

Safety Plans 4C, 6A, and 6B are based on half rates. (31621.2, 31621.4, 31621.5, 31621.6, 31581.1)

C. Employer Contributions:

The employer (County or District) contributes to the retirement fund a percentage of the total compensation provided for all members based on an actuarial investigation, valuation, and recommendation of the actuary. (31453, 31453.5, 31453.6, 31454.1, 31581)

D. Service Retirement Allowance:

Eligibility:

General Plan members:

Plans 5A,

5B, 5C, &7: Age 50 with five years of service and 10 years of elapsed time since

membership;

Any age with 30 years of service; or

Age 70 regardless of service. (31672, 31672.1)

Plan 2: Age 55 with 10 years of service and 10 years of elapsed time since

membership. (31486.4)

APCD Plan members:

Age 50 with five years of service and 10 years of elapsed time since

membership;

Any age with 30 years of service; or

Age 70 regardless of service. (31672, 31672.1)

Safety Plan members:

Age 50 with five years of service and 10 years of elapsed time since

membership;

Any age with 20 years of service. (31663.25)



APPENDIX D – SUMMARY OF PLAN PROVISIONS

PEPRA Plan 8 members:

General and APCD: Age 52 with five years of service.

Safety: Age 50 with 5 years of service.

All PEPRA members: Age 70 regardless of service. (31672.3)

Final Compensation:

General Plan members:

Plans 5A & 5B: Monthly average of a member's highest 12 consecutive months of compensation. (31462.1)

Plans 5C & 7: Monthly average of a member's highest 36 consecutive months of compensation. (31462)

Plan 2: Monthly average of a member's highest 36 non-consecutive months of compensation.

APCD Plan members:

Plans 1 & 2: Monthly average of a member's highest 12 consecutive months of compensation. (31486.1)

Safety Plan members

Plans 4A, 4B, Monthly average of a member's highest 12 consecutive months of compensation. (31462.1)

Plans 4C & 6B: Monthly average of a member's highest 36 consecutive months of compensation. (31462)

PEPRA Plan members:

Plan 8: Monthly average of a member's highest 36 consecutive months of pensionable compensation.

Compensation

Limit: The amount of compensation that is taken into account in computing benefits payable to any person who first becomes a member on or after July 1, 1996, shall not exceed the dollar limitations in Section 401(a)(17)

of Title 26 of the US Code. (31671)

Plan 8: For PEPRA members, only pensionable compensation up to the Social Security-integrated PEPRA compensation limit will count for computing Plan benefits and employee contributions and employer contributions for those participating in Social Security (\$126,291 for calendar year 2020 and \$128,059 for calendar year 2021). For those not participating in Social Security, the compensation cap is 120% of the above limit (\$151,549 for calendar year 2020 and \$153,671 for calendar year 2021). In addition, it is



APPENDIX D – SUMMARY OF PLAN PROVISIONS

possible that some sources of compensation, such as any payments deemed to be terminal or special pays, may be excluded from the benefit and contribution computations for PEPRA members.

Monthly Allowance:

General Plan members:

Plans 5A,

5B & 5C: 2% x Final Compensation x Plan 5 Age Factor x Years of Service.

(31676.12)

Plan 7: 1/60 x Final Compensation x Plan 7 Age Factor x Years of Service.

(31676.1)

Plan 2: Sum of (a) + (b) – (c):

(a) 2% x Final Compensation x Years of Service (max. 35 years); plus

(b) 1% x Final Compensation x Years of Service in excess of 35 (max. 10

years); minus

(c) 1/35 x Primary Insurance Amount (PIA) at age 65 x Years of Covered

Service (max. 35 years). (31486.4)

The PIA is calculated based on certain assumptions specified by statute, and an assumed Social Security retirement age of 65. If retirement occurs prior to age 65, the benefit amount is adjusted by an actuarial equivalent factor (see Sample Plan Age Factors).

APCD Plan members:

2% x Final Compensation x APCD Age Factor x Years of Service. (31676.15)

Safety Plan members:

3% x Final Compensation x Safety Age Factor x Years of Service.

(31664.2)

Age Factors are higher for Plans 6A and 6B. (31664.1)

General, Safety and APCD members:

PEPRA Plan 8: PEPRA Age Factor x Final Compensation x Years of Service.

In between exact ages, the multiplier will increase by 0.025% for each quarter year increase in age.



APPENDIX D – SUMMARY OF PLAN PROVISIONS

Age Factors By Plan							
	Ge	eneral	General & APCD	APCD		Safety	
-	Plan 5	Plan 7	Plan 8		Plan 4	Plan 6	Plan 8
Code Section:	31676.12	31676.1		31676.15	31664.2	31664.1	
Label:	2% @ 57	1.67% @ 57.5	PEPRA	2% @ 55	3% @ 55	3% @ 50	PEPRA
Base:	2.00%	1.67%		2.00%	3.00%	3.00%	
Age:							
41					0.4777	0.6258	
42					0.5058	0.6625	
43					0.5347	0.7004	
44					0.5647	0.7397	
45					0.5958	0.7805	
46					0.6280	0.8226	
47					0.6625	0.8678	
48					0.6936	0.9085	
49					0.7269	0.9522	
50	0.6681	0.7091		0.7454	0.7634	1.0000	0.0200
51	0.7056	0.7457		0.7882	0.8028	1.0000	0.0210
52	0.7454	0.7816	0.0100	0.8346	0.8457	1.0000	0.0220
53	0.7882	0.8181	0.0110	0.8850	0.8926	1.0000	0.0230
54	0.8346	0.8556	0.0120	0.9399	0.9418	1.0000	0.0240
55	0.8850	0.8954	0.0130	1.0000	1.0000	1.0000	0.0250
56	0.9399	0.9382	0.0140	1.0447	1.0000	1.0000	0.0260
57	1.0000	0.9846	0.0150	1.1048	1.0000	1.0000	0.0270
58	1.0447	1.0350	0.0160	1.1686	1.0000	1.0000	0.0270
59	1.1048	1.0899	0.0170	1.2365	1.0000	1.0000	0.0270
60	1.1686	1.1500	0.0180	1.3093	1.0000	1.0000	0.0270
61	1.2365	1.1947	0.0190	1.3608	1.0000	1.0000	0.0270
62	1.3093	1.2548	0.0200	1.4123	1.0000	1.0000	0.0270
63	1.3093	1.3186	0.0210	1.4638	1.0000	1.0000	0.0270
64	1.3093	1.3865	0.0220	1.5153	1.0000	1.0000	0.0270
65	1.3093	1.4593	0.0230	1.5668	1.0000	1.0000	0.0270
66	1.3093	1.4593	0.0240	1.5668	1.0000	1.0000	0.0270
67	1.3093	1.4593	0.0250	1.5668	1.0000	1.0000	0.0270



APPENDIX D – SUMMARY OF PLAN PROVISIONS

Maximum Allowance:

General Plan 2: The sum of the normal retirement allowance and the estimated PIA cannot exceed 70% of Final Compensation for a member with 35 or less years of service, and cannot exceed 80% of Final Compensation if service exceeds 35 years. (31486.4)

All other Plans: Allowance may not exceed 100% of Final Compensation (does not apply to PEPRA members).

Unmodified Retirement Allowance (Normal Form):

General Plan 2: Life Annuity payable to retired member with 50% continuance to an eligible survivor (or eligible children). (31486.6)

All other Plans: Life Annuity payable to retired member with 60% continuance to an eligible survivor (or eligible children). (31760.1)

Eligible survivor includes certain domestic partners. (31780.2) If there is no eligible survivor, any unpaid remainder of the member's accumulated contributions will be paid to the member's designated beneficiary.

Optional Retirement Allowance:

A member may elect to have the actuarial equivalent of the service or disability retirement allowance applied to a lesser retirement allowance during the retired member's life in order to provide an optional survivor allowance.

Option 1: Member's allowance is reduced to pay a cash refund of any unpaid annuity payments (up to the amount of the member's contributions at retirement) to the member's estate or to a beneficiary having an insurable interest in the life of the member. (31761)

Option 2: 100% of member's reduced allowance is payable to a surviving spouse or beneficiary having an insurable interest in the life of the member. (31762)

Option 3: 50% of member's reduced allowance is payable to a beneficiary having an insurable interest in the life of the member. (31763)

Option 4: Other % of member's reduced allowance is payable to a beneficiary(ies) having an insurable interest in the life of the member. (31764)

A member may not revoke and name another beneficiary if the member elects Option 2, 3 or 4. (31782)



APPENDIX D – SUMMARY OF PLAN PROVISIONS

All Allowances: All allowances are made on a pro-rata basis (based on the number of days in that month) if not in effect for the entire month of retirement. (31600)

Death after Retirement:

General Plan 2: No benefit is payable upon death after retirement, other than in accordance with form of benefit allowance.

All other Plans: Upon a member's death after retirement, a special lump sum of \$5,000 is payable to an eligible survivor, or the member's estate. (31789.5)

E. Service-Connected Disability Retirement Allowance

Eligibility:

General Plan 2: Disability benefits not valued since provided outside of the retirement system.

All other Plans: Any age and length of service; disability must result from occupational injury or disease, and member must be permanently incapacitated for the performance of duty. (31720, 31720.5, 31720.6, 31720.7, 31720.9)

Monthly Allowance:

General Plan 2: Service retirement benefit payable at age 65 with service projected from disability until age 65. Prior to age 65, disability benefits are provided outside of retirement system.

All other Plans: Greater of (1) 50% of final compensation, and (2) the service retirement allowance, if eligible to retire. (31727.4)

Supplemental Disability Allowance:

APCD Members: Upon retirement for service disability, APCD members receive a monthly supplemental allowance of \$300. (31740)

Normal Form of Payment:

General Plan 2: Service retirement benefit payable at age 65 with service projected from disability until age 65. Prior to age 65, disability benefits are provided outside of retirement system. (31760, 31786)

All other Plans: Life Annuity payable to retired member with 100% continuance to an eligible survivor (or eligible children).



APPENDIX D – SUMMARY OF PLAN PROVISIONS

Death after Retirement:

General Plan 2: No benefit is payable upon death after retirement, other than in accordance

with form of benefit allowance.

All other Plans: Upon a member's death after retirement, a special lump sum of \$5,000 is

payable to an eligible survivor, or the member's estate. (31789.5)

F. Non Service-Connected Disability Retirement Allowance

Eligibility:

General Plan 2: Disability benefits not valued since provided outside of the retirement

system.

All other Plans: Any age with five years of service and permanently incapacitated for the

performance of duty. (31720)

Monthly Allowance:

General Plan 2: Service retirement benefit payable at age 65 with service projected from

disability until age 65. Prior to age 65, disability benefits are provided

outside of retirement system.

All other Plans: The monthly allowance is equal to a service retirement allowance if the

member is eligible to retire and the service retirement allowance exceeds the benefits described below. Otherwise, allowance equals (a) or (b)

where: (31727, 31727.1, 31727.2, and 31727.3)

(a) 90% x 1/50 (1/60 for PEPRA General and PEPRA APCD members and those in Plan 7) x Final Compensation x years of service, if member must rely on service in another retirement system in order to

be eligible to retire, or allowance exceeds 1/3 of final compensation.

(b) 90% x 1/50 (1/60 for PEPRA General and APCD members and those in Plan 7) x Final Compensation x Projected Service, not to exceed 1/3

of Final Compensation.

Projected Service:

General Members: Age 62. (31727.1); Age 65 for Plan 8 (PEPRA) General members.

APCD Members: Age 65. (31727.3)

Safety Members: Age 55. (31727.2)



APPENDIX D – SUMMARY OF PLAN PROVISIONS

Supplemental Monthly Disability Retirement:

APCD Members: Upon retirement for non-service disability, APCD members receive a monthly supplemental allowance of \$300. (31740)

Normal Form of Payment:

General Plan 2: Service retirement benefit payable at age 65 with service projected from disability until age 65. Prior to age 65, disability benefits are provided

outside of retirement system.

All other Plans: Life Annuity with 60% continuance to a surviving spouse (or eligible

children). (31760.1)

Death after Retirement:

General Plan 2: No benefit is payable upon death after retirement, other than in accordance

with form of benefit allowance.

All other Plans: Life Annuity with 60% continuance to a surviving spouse (or eligible

children). Upon a member's death after retirement, a special lump sum of \$5,000 is payable to an eligible survivor, or the member's estate.

(31789.5)

G. Service-Connected Death Benefits

Eligibility:

All Plans: Active members who die in service as a result of injury or disease arising

out of and in the course of employment. (31486.7, 31787)

Monthly Allowance:

General Plan 2: A lump sum is payable to an eligible survivor equal to 1/12 x final 12

months' Salary x years of service (up to max of six years). (31781)

All other Plans: A monthly allowance is payable to an eligible survivor equal to the greater

of the Member's Service Retirement Allowance (if he is eligible for service Retirement at his date of death), and (b) 50% x Final

Compensation. (31787)



APPENDIX D – SUMMARY OF PLAN PROVISIONS

Supplemental Monthly Death Benefit:

APCD Members: Eligible survivors of an active members who dies while employed with at least 18 months continuous service immediately prior to death, shall receive a supplemental monthly allowance. The amount of the supplemental allowance is based on the family demographics of the beneficiaries. (31855.11, 31855.12)

H. Non-Service-Connected Death Benefits

Eligibility:

All Plans: Active members who die while in service but not as a result of injury or

disease arising out of and in the course of employment.

Monthly Allowance:

General Plan 2: A lump sum is payable to an eligible survivor equal to 1/12 x final 12

months' Salary x years of service (up to maximum of six years). (31781)

All other Plans: If an active member is eligible for Non-Service Connected Disability at

his date of death, then a monthly allowance is payable to an eligible survivor equal to 60% x the member's non-service connected disability allowance. Otherwise, the benefit is a refund of contributions plus a lump sum equal to 1/12 x final 12 months' Salary x years of service (up to

maximum of six years). (31781.1)

Supplemental Monthly Death Benefit:

APCD Members: Eligible survivors of an active member who dies while employed with at

least 18 months continuous service immediately prior to death shall receive a supplemental monthly allowance. The amount of the supplemental allowance is based on the family demographics of the

beneficiaries. (31855.11, 31855.12)

I. Deferred Vested Benefits

Eligibility:

General Plan 2: The member must have terminated with 10 years of service. Members are

eligible for service retirement when they reach service retirement eligibility (based on years of service at termination plus reciprocal service,

if any). (31700)



APPENDIX D – SUMMARY OF PLAN PROVISIONS

All other Plans: Member contributions must be left on deposit and the member must have

terminated with five years of service or entered a reciprocal agency. Members are eligible for service retirement when they reach service retirement eligibility (based on years of service at termination plus

reciprocal service, if any). (31700, 31701, 31702)

Monthly Allowance:

General Plan 2: Same as service retirement allowance at normal retirement age 65 or in an

actuarially equivalent reduced amount at early retirement, after age 55.

All other Plans: Same as service retirement allowance; payable any time after the member

would have been eligible for service retirement. (31703, 31704, 31705)

J. Cost-of-Living Increases

Cost-of-living increases (or decreases) are applied to all retirement allowances (service and disability), optional death allowances, and annual death allowances effective April 1, based on changes in the average annual Consumer Price Index (CPI), rounded to the nearest ½ of 1%. (31870, 31870.1)

All Plans (excluding General Plans 2, 7, and 8):

Members (and their beneficiaries) are limited to a maximum 3% cost-of-living increase. (31870.1)

General Plan 7:

Members (and their beneficiaries) are limited to a maximum 2% cost-ofliving increase. (31870)

General Plan 8 (PEPRA):

Members (and their beneficiaries) hired by employers who had implemented General Plan 7 prior to January 1, 2013 are limited to a maximum 2% cost-of-living increase. (31870) Members hired by employers who had not implemented General Plan 7 prior to January 1, 2013 are limited to a maximum 3% cost-of-living increase. (31870.1)

General Plan 2: General Plan 2 does not have a COLA.



APPENDIX D – SUMMARY OF PLAN PROVISIONS

COLA Bank:

All Plans (excluding General Plan 2):

When the CPI exceeds the applicable percentage, the difference between the actual CPI and the maximum cost-of-living increase given in any year is credited to the COLA Accumulation (COLA Bank). It may be used in future years to provide cost-of-living increases when the CPI falls below the applicable percentage. (31874, 31874.1, 31874.2, 31874.3)

General Plan 2: General Plan 2 does not have a COLA and, therefore, does not have a COLA Bank.



APPENDIX E – CONTRIBUTION RATES WITH MEMBER COST-SHARING ADJUSTMENTS

General Employer Contribution Rates after Member Cost-Sharing

SEIU Local 620 (23,24,25,26,27) and Local 721 (21,22)

Deputy Public Defenders (20) and Deputy Sheriffs' Association (Non-Safety 14,15)

Engineers & Technicicans (28,29) and Confidential (32)

	5A	5B	5C	Plan 7
June 30, 2019 Contribution Rate for FYE 2021	37.06%	37.06%	38.83%	38.20%
Adjusted Member Cost-Sharing Contributions	<u>-2.48%</u>	<u>-2.48%</u>	<u>-2.48%</u>	<u>-2.48%</u>
Net Employer Rate Effective July 1, 2020	34.58%	34.58%	36.35%	35.72%
June 30, 2020 Contribution Rate for FYE 2022	39.28%	39.33%	41.05%	40.13%
Adjusted Member Cost-Sharing Contributions	<u>-2.48%</u>	<u>-2.48%</u>	<u>-2.48%</u>	<u>-2.48%</u>
Net Employer Rate Effective July 1, 2021	36.80%	36.85%	38.57%	37.65%

General Employer Contribution Rates after Member Cost-Sharing								
Deputy District Attorneys (17)								
	5A	5B	5C	Plan 7				
June 30, 2019 Contribution Rate for FYE 2021	37.06%	37.06%	38.83%	38.20%				
Adjusted Member Cost-Sharing Contributions	<u>-1.49%</u>	<u>-1.49%</u>	<u>-1.49%</u>	<u>-1.49%</u>				
Net Employer Rate Effective July 1, 2020	35.57%	35.57%	37.34%	36.71%				
1 20 2020 G 4 7 4 P 4 C FWF 2022	20.200/	20.220/	41.050/	40.120/				
June 30, 2020 Contribution Rate for FYE 2022	39.28%	39.33%	41.05%	40.13%				
Adjusted Member Cost-Sharing Contributions	<u>-1.49%</u>	<u>-1.49%</u>	<u>-1.49%</u>	<u>-1.49%</u>				
Net Employer Rate Effective July 1, 2021	37.79%	37.84%	39.56%	38.64%				



APPENDIX E – CONTRIBUTION RATES WITH MEMBER COST-SHARING ADJUSTMENTS

General Employer Contribution Rates after Member Cost-Sharing Civil Attorneys Association (30) and Unrepresented Confidential Attorneys (36)							
	5A	5B	5C	Plan 7			
June 30, 2019 Contribution Rate for FYE 2021	37.06%	37.06%	38.83%	38.20%			
Adjusted Member Cost-Sharing Contributions	-1.48%	<u>-1.48%</u>	<u>-1.48%</u>	<u>-1.48%</u>			
Net Employer Rate Effective July 1, 2020	35.58%	35.58%	37.35%	36.72%			
June 30, 2020 Contribution Rate for FYE 2022	39.28%	39.33%	41.05%	40.13%			
Adjusted Member Cost-Sharing Contributions	-1.48%	<u>-1.48%</u>	<u>-1.48%</u>	<u>-1.48%</u>			
Net Employer Rate Effective July 1, 2021	37.80%	37.85%	39.57%	38.65%			

General Employer Contribution Rates after Member Cost-Sharing Unrepresented Managers (including CEO) (35, 40, 41, 42, 43)							
	5A	5B	5C	Plan 7			
June 30, 2019 Contribution Rate for FYE 2021	37.06%	37.06%	38.83%	38.20%			
Adjusted Member Cost-Sharing Contributions	-2.47%	<u>-2.47%</u>	<u>-2.47%</u>	-2.47%			
Net Employer Rate Effective July 1, 2020	34.59%	34.59%	36.36%	35.73%			
June 30, 2020 Contribution Rate for FYE 2022	39.28%	39.33%	41.05%	40.13%			
Adjusted Member Cost-Sharing Contributions	-2.47%	-2.47%	-2.47%	-2.47%			
Net Employer Rate Effective July 1, 2021	36.81%	36.86%	38.58%	37.66%			



APPENDIX E – CONTRIBUTION RATES WITH MEMBER COST-SHARING ADJUSTMENTS

General Employer Contribution Rates after Member Cost-Sharing Union of American Physicians & Dentists (10,11)							
	5A	5B	5C	Plan 7			
June 30, 2019 Contribution Rate for FYE 2021	37.06%	37.06%	38.83%	38.20%			
Adjusted Member Cost-Sharing Contributions	-2.48%	-2.48%	-2.48%	-2.48%			
Net Employer Rate Effective November 16, 2020	34.58%	34.58%	36.35%	35.72%			
June 30, 2020 Contribution Rate for FYE 2022	39.28%	39.33%	41.05%	40.13%			
Adjusted Member Cost-Sharing Contributions	<u>-2.48%</u>	-2.48%	<u>-2.48%</u>	-2.48%			
Net Employer Rate Effective July 1, 2021	36.80%	36.85%	38.57%	37.65%			

Safety Employer Contribution Rates after Member Cost-Sharing Unrepresented Safety Managers (35,40,41,42,43)							
					(D		
	4A	4B	4C	6A	6B		
June 30, 2019 Contribution Rate for FYE 2021	58.88%	59.20%	57.66%	66.85%	65.48%		
Adjusted Member Cost-Sharing Contributions	<u>-0.83%</u>	<u>-0.83%</u>	<u>-0.83%</u>	<u>-0.83%</u>	<u>-0.83%</u>		
Net Employer Rate Effective July 1, 2020	58.05%	58.37%	56.83%	66.02%	64.65%		
June 30, 2020 Contribution Rate for FYE 2022	61.63%	63.29%	60.39%	69.34%	68.46%		
Adjusted Member Cost-Sharing Contributions	-0.83%	<u>-0.83%</u>	<u>-0.83%</u>	<u>-0.83%</u>	-0.83%		
Net Employer Rate Effective July 1, 2021	60.80%	62.46%	59.56%	68.51%	67.63%		



APPENDIX E – CONTRIBUTION RATES WITH MEMBER COST-SHARING ADJUSTMENTS

Safety Employer Contribution Rates after Member Cost-Sharing

Fire Fighters Local 2046 (12,13) and Deputy Sheriffs' Association (14,15), Probation Peace Officers (18,19)
Sheriff Managers Association (44)

	4 A	4B	4C	6A	6B
June 30, 2019 Contribution Rate for FYE 2021	58.88%	59.20%	57.66%	66.85%	65.48%
Adjusted Member Cost-Sharing Contributions	<u>-5.97%</u>	<u>-5.97%</u>	<u>-5.97%</u>	<u>-5.97%</u>	<u>-5.97%</u>
Net Employer Rate Effective July 1, 2020	52.91%	53.23%	51.69%	60.88%	59.51%
June 30, 2020 Contribution Rate for FYE 2022	61.63%	63.29%	60.39%	69.34%	68.46%
Adjusted Member Cost-Sharing Contributions	<u>-5.97%</u>	<u>-5.97%</u>	<u>-5.97%</u>	<u>-5.97%</u>	<u>-5.97%</u>
Net Employer Rate Effective July 1, 2021	55.66%	57.32%	54.42%	63.37%	62.49%



APPENDIX F – GLOSSARY

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs such as mortality, withdrawal, disability, retirement, changes in compensation, and rates of investment return.

2. Actuarial Cost Method

A procedure for determining the actuarial present value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a normal cost and an Actuarial Liability.

3. Actuarial Gain (Loss)

The difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

4. Actuarial Liability

The portion of the actuarial present value of projected benefits that will not be paid by future normal costs. It represents the value of the past normal costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

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

6. Actuarial Valuation

The determination, as of a specified date, of the normal cost, Actuarial Liability, Actuarial Value of Assets, and related actuarial present values for a pension plan.

7. Actuarial Value of Assets

The value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values. As of the June 30, 2014, actuarial valuation the Actuarial Value of Assets is equal to the market value.



APPENDIX F – GLOSSARY

8. Actuarially Equivalent

Of equal actuarial present value, determined as of a given date, with each value based on the same set of actuarial assumptions.

9. Amortization Payment

The portion of the pension plan contribution, which is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

10. Entry Age Normal Actuarial Cost Method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

11. Funded Ratio

The ratio of the Markel Value of Assets to the Actuarial Liability.

12. Normal Cost

That portion of the actuarial present value of pension plan benefits and expenses that is allocated to a valuation year by the actuarial cost method.

13. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of actuarial assumptions, taking into account such items as increases in future compensation and service credits.

14. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Market Value of Assets.





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