



# **San Joaquin County Employees' Retirement Association**

## **Actuarial Valuation Report as of January 1, 2021**

**Produced by Cheiron**

**August 2021**

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August 5, 2021

Retirement Board of San Joaquin  
County Employees' Retirement Association  
6 South El Dorado Street, Suite 400  
Stockton, CA 95202

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the San Joaquin County Employees' Retirement Association (SJCERA, the System, the Fund, the Plan) as of January 1, 2021. This report contains information on the System's assets and liabilities and discloses employer and employee contribution levels. It also contains schedules for inclusion in the Actuarial Section of the Annual Financial Report. 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 SJCERA. This report is for the use of the Retirement Board of SJCERA 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 SJCERA 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



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



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

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION I – EXECUTIVE SUMMARY**

Cheiron has performed the actuarial valuation of the San Joaquin County Employees' Retirement Association as of January 1, 2021. 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 – Identification and Assessment of Risks
  - Section III – Assets
  - Section IV – Liabilities
  - Section V – Contributions
  - Section VI – Additional Financial Report Schedules
- In the **Appendices**, we conclude our report with detailed information describing plan membership (Appendix A), actuarial assumptions and methods employed in the valuation (Appendix B), a summary of pertinent plan provisions (Appendix C), a 401(h) repayment schedule (Appendix D), a glossary of key actuarial terms (Appendix E), a summary of General and Safety Employer contribution rates (Appendix F), and tables containing member contribution rates (Appendix G).

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

Cheiron utilizes ProVal actuarial valuation software leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have a basic understanding of ProVal 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 valuation.

Deterministic and stochastic projections in this valuation report were developed using R-scan, a proprietary tool used to illustrate the impact of changes in assumptions, methods, plan provisions, or actual experience (particularly investment experience) on the future financial status of the Plan. R-scan uses standard roll-forward techniques that implicitly assume a stable active population. Because R-scan does not automatically capture how changes in one variable affect all other variables, some scenarios may not be consistent.

This report does not contain any adjustment for the potential impact of COVID-19, other than the impact on plan membership and assets through the valuation date. We anticipate the virus will affect both demographic and economic experience. In preparing our report, we relied on information (some oral and some written) supplied by the SJCERA 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.

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**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 financial condition of the System,
- Past and expected trends in the financial progress of the System,
- Employer and employee contribution rates for Plan Year 2022, 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 December 31, 2020 provided to SJCERA in May 2021, and revised in June 2021.

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 key financial results, (C) an examination of the historical trends, and (D) the projected financial outlook for the System.

**A. Valuation Basis**

This valuation determines the employer contributions for the Plan Year 2022. The System's funding policy is to contribute an amount equal to the sum of:

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

At the July 24, 2015 board meeting, the SJCERA Board of Retirement made a change to the funding policy, choosing to amortize any unexpected new changes in the UAL over a period of 15 years as a level percentage of payroll, with new amortization layers each year. The amortization period for each layer of the remaining UAL will decrease each year. Prior to this change, all UAL, other than the extraordinary loss from 2008, was being amortized over a closed period of 19 years as a level percentage of member payroll. The extraordinary loss from 2008 is amortized over a closed period of 30 years starting in 2009, as a level percentage of payroll. At the February 14, 2020 board meeting, the SJCERA Board of Retirement chose to phase-in the impact of the January 1, 2020 economic assumption changes to the UAL over a period of three years, followed by 12 years of payments as a level percentage of payroll. The single equivalent amortization period for the aggregate stream of UAL payments is 14 years. Tables V-4 and V-5 show a detailed summary of each amortization layer for General and Safety, respectively.

This valuation was prepared based on the plan provisions shown in Appendix C. There have been no changes in plan provisions since the prior valuation reflected in the valuation. Subsequent to the valuation date, the Board approved the creation of Tier 2B for new members hired after January 1, 2022, but the creation of this Tier does not have any impact on the current valuation results. There have been no assumption changes since the prior valuation.

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**SECTION I – EXECUTIVE SUMMARY**

**B. Key Findings of this Valuation**

The key results of the January 1, 2021 actuarial valuation are as follows:

- The actuarially determined employer contribution rate increased from 49.82% to 50.51%.
- The System's funded ratio, the ratio of assets over Actuarial Liability, increased from 64.3% last year to 67.0% as of January 1, 2021 on an Actuarial Value of Assets (AVA) basis. It increased from 64.7% to 68.1% on a Market Value of Assets (MVA) basis.
- The Unfunded Actuarial Liability (UAL) is the excess of the System's Actuarial Liability over the Actuarial Value of Assets. The System experienced a decrease in the UAL from \$ 1,787,533,324 to \$ 1,720,244,780 as of January 1, 2021.
- During the year ending December 31, 2020, the return on Plan assets was 8.50% on a market value basis, as compared to the 7.00% assumption. This resulted in a market value gain on investments of \$49,012,701. The Actuarial Value of Assets recognizes 20% of the difference between the expected Actuarial Value of Assets and the Market Value of Assets. This method of smoothing the asset gains and losses returned 7.28% on the smoothed value of assets, an actuarial asset gain of \$8,799,951 for the year.
- The Actuarial Value of Assets is currently 98% of the market value. Since actuarial assets are below market assets, there are unrecognized investment gains (approximately \$59 million) that will be reflected in the smoothed value in future years.
- Contributions to the System (excluding the additional voluntary contributions described below) were less than the actuarial cost for the year, due to the 12 month-delay in the implementation of the contribution rates and lower than expected payroll. This shortfall increased the UAL by \$21,119,423.
- The System experienced a gain on the Actuarial Liability of \$11,060,850 primarily due to lower than expected salary growth and more deaths than expected. The contribution shortfall exceeded the combined liability and asset gains, resulting in a total loss of \$1,258,622.
- During 2020, the County, the Mosquito and Vector Control District (MVCD), and the Superior Court of California County of San Joaquin made additional voluntary contributions (above the actuarially determined amount) of \$22,089,251. The total market value of the additional contributions, including prior year amounts and accumulated with interest at the Plan's actual rate of return, was \$97,140,039 as of December 31, 2020. These assets are included in the calculation of the UAL and funded ratio. However, under the funding policy with respect to these reserves requested by the contributors and approved by the Board, these assets are not currently included in the calculation of the employer contribution rates.

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**SECTION I – EXECUTIVE SUMMARY**

Table I-1 below summarizes all the key results of the valuation with respect to membership, assets and liabilities, and contributions. The results are presented and compared for both the current and prior plan year.

<b>TABLE I-1</b> <b>Summary of Principal Plan Results</b>			
	January 1, 2020	January 1, 2021	% Change
<b><u>Participant Counts</u></b>			
Active Participants	6,369	6,350	-0.30%
Participants Receiving a Benefit	6,208	6,361	2.46%
Terminated Vested Participants	1,012	1,223	20.85%
Terminated Non-Vested Participants	934	942	0.86%
<b>Total</b>	<b>14,523</b>	<b>14,876</b>	<b>2.43%</b>
Annual Pay of Active Members	\$ 478,458,307	\$ 489,490,258	2.31%
Calendar Year Projected Pay	\$ 485,582,148	\$ 496,778,356	2.31%
<b><u>Assets and Liabilities</u></b>			
Actuarial Liability (AL)	\$ 5,013,632,466	\$ 5,207,669,301	3.87%
Actuarial Value of Assets (AVA) <sup>1</sup>	3,226,099,142	3,487,424,521	8.10%
Unfunded Actuarial Liability (UAL)	\$ 1,787,533,324	\$ 1,720,244,780	-3.76%
Funded Ratio (AVA)	64.3%	67.0%	2.7%
Funded Ratio (MVA) <sup>2</sup>	64.7%	68.1%	3.4%
Inactive Funded Ratio	66.3%	67.4%	1.1%
<b><u>Contributions as a Percentage of Payroll</u></b>			
Normal Cost Rate	15.04%	14.58%	-0.46%
Unfunded Actuarial Liability Rate <sup>3</sup>	33.92%	35.07%	1.15%
Administrative Expense	0.86%	0.86%	0.00%
Total Contribution Rate	49.82%	50.51%	0.69%

<sup>1</sup> Includes additional County, MVCD, and Superior Court Contribution Reserves.

<sup>2</sup> The Market Value of Assets includes additional County, MVCD, and Superior Court Contribution Reserves.

<sup>3</sup> Based on Actuarial Value of Assets that does not include additional County, MVCD, and Superior Court Contribution Reserves.

The Inactive Funded Ratio shown in Table I-1 represents the percentage of the Actuarial Liability attributable to members who are not active employees. A funded ratio of 67.4% or more, for example, is required just to fund the liabilities of the System's inactive members: those currently retired, disabled, terminated with vested benefits, and their beneficiaries.

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**SECTION I – EXECUTIVE SUMMARY**

**Changes in Cost**

Table I-2 below summarizes the impact of actuarial experience on Plan cost, for the Plan as a whole and for the General and Safety classes.

TABLE I-2 Summary of Changes in Plan Cost from Prior Review						
	General Employer Cost	General Employer Contribution Rate (% Payroll)	Safety Employer Cost	Safety Employer Contribution Rate (% Payroll)	Total Employer Cost	Employer Contribution Rate (% Payroll)
<b>January 1, 2020</b>	<b>\$ 173,463,288</b>	<b>43.24%</b>	<b>\$ 63,105,081</b>	<b>85.67%</b>	<b>\$ 236,568,369</b>	<b>49.82%</b>
Change in Cost Due to:						
Expected Change	8,197,485	0.77%	3,117,307	1.70%	11,314,792	0.91%
Asset Experience	(528,643)	( 0.12%)	(253,055)	( 0.33%)	(781,698)	( 0.16%)
Contribution (Gain)/Loss	1,370,015	0.32%	555,814	0.72%	1,925,829	0.39%
Demographic Experience	80,461	( 0.04%)	(749,298)	( 1.14%)	(668,837)	( 0.23%)
Salary Experience	(1,016,571)	( 0.17%)	(174,140)	0.01%	(1,190,711)	( 0.14%)
Payroll Amortization	0	0.19%	0	0.60%	0	0.24%
PEPRA Transition	(1,127,455)	( 0.29%)	(345,644)	( 0.48%)	(1,473,099)	( 0.32%)
<b>Total Cost as of January 1, 2021</b>	<b>\$ 180,438,580</b>	<b>43.90%</b>	<b>\$ 65,256,065</b>	<b>86.75%</b>	<b>\$ 245,694,645</b>	<b>50.51%</b>

An analysis of the cost changes from the prior valuation reveals the following:

- Contributions were expected to increase, both in dollars and as a percentage of payroll.

Contributions are expected to increase as payroll grows, both from increases in the Normal Cost and since the UAL is amortized as a level percentage of payroll. The contribution rate (and resulting dollar amount) was also expected to grow this year as a result of the three-year phase-in of the UAL payment for the change in assumptions (specifically, the reduction in the discount rate from 7.25% to 7.00%) enacted by the Board in 2020.

- Demographic experience was somewhat favorable.

The demographic experience of the Plan – rates of retirement, death, disability, and termination – was close to that predicted by the actuarial assumptions in aggregate, reducing the overall employer rate by 0.23% of pay.

There were more deaths than expected among those in pay status among retirees and their surviving spouses, which decreased their liabilities. The net impact of these and other unexpected demographic changes was reductions of 0.04% and 1.14% of payroll for General and Safety, respectively. Overall employer cost decreased by 0.23% of payroll.



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- Overall pay increases for returning General members were below expectations.

Salaries for continuing General members increased less than expected, decreasing the employer contribution rate for General members by 0.17% of payroll, and 0.14% of overall payroll.

However, salaries for continuing Safety members were close to the assumption, with small losses that increased the rate by 0.01% of payroll.

- The unfunded liability is being amortized over a smaller-than-expected payroll base for the General members and Safety members.

The payroll used to amortize the unfunded liability for General members was lower than expected due to lower than expected payroll growth (2.36%, versus the 3.00% assumption), which increased the General employer contribution rate by an additional 0.19% of pay, since the UAL payments are spread out over a lower payroll base than expected. The lower than expected Safety projected payroll (reflecting a 2.03% increase) resulted in an increase in the contribution rate by about 0.60% of pay.

The aggregate impact from the change in total projected payroll was an increase in the contribution rate of 0.24% of pay. Note that the change in the payroll base used to amortize the unfunded liability does not change the dollar amount of the contribution – only the contribution rate calculated as a percentage of payroll.

- New members entered the Plan as PEPRA members.

During 2020, 633 newly hired or rehired members entered the Plan to replace departing members. New Tier 2 hires have a smaller Plan normal cost as a percentage of payroll when compared to the legacy (Tier 1) members.

Due to the shift in both populations towards more Tier 2 members, the employer contribution rate decreased by 0.29% of payroll for General members, 0.48% of payroll for Safety members, and the overall contribution rate dropped by 0.32% of payroll.

In addition, different bargaining groups continue to negotiate modifications to the cost sharing arrangements for their Legacy members. The valuation results reflect the arrangements in place as of the valuation date that apply to the 2022 Plan Year. Changes to the cost sharing arrangements occurring after the valuation date will affect the aggregate employer costs in future valuations.

- Asset experience produced an investment gain on a market basis and on a smoothed basis.

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The assets of the Plan returned 8.50% on a market basis, higher than the assumed rate of 7.00%, resulting in a gain of approximately \$49 million for 2020. Under the actuarial asset smoothing policy, 20% of this gain is recognized in the current year, in addition to 20% of the gains and losses from each of the prior three years. The overall return on the smoothed assets was 7.28%; higher than the assumed return of 7.00%, so the overall contribution rate decreased by 0.16% of payroll.

The contribution rate decreased more for Safety members (by 0.33% of payroll) than for General members (0.12% of payroll) as a result of the asset gain; this is due to the fact that the Safety members have a higher ratio of assets to payroll than the General members, and is discussed further in this report.

- Contributions less than the actuarial cost increased the employer contribution rate by 0.39% of pay, largely due to the 12-month delay in implementation of the contribution rates and a shortfall in actual versus projected payroll.

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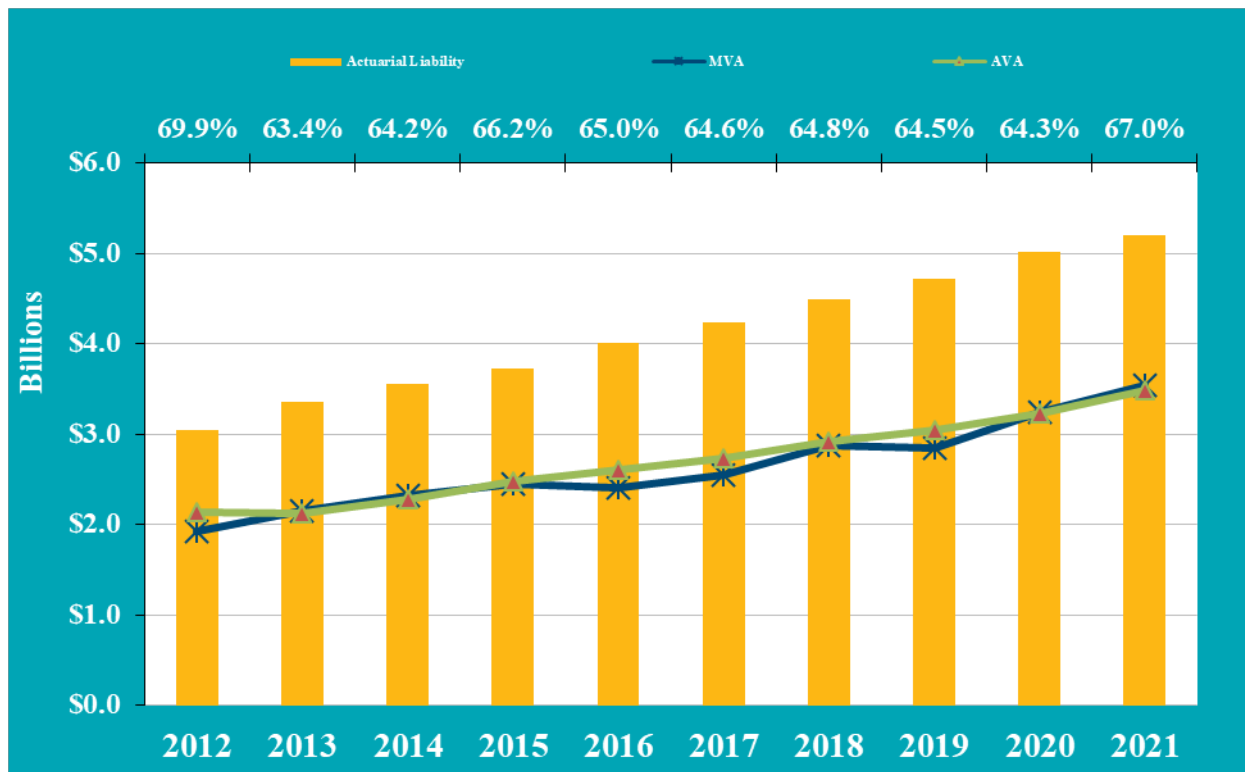
**SECTION I – EXECUTIVE SUMMARY**

**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 more 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 on this page compares the Market Value of Assets (MVA) and Actuarial Value of Assets (AVA) to the Actuarial Liabilities. The percentage shown at the top of each bar is the ratio of the Actuarial Value of Assets to the Actuarial Liability (the funded ratio).



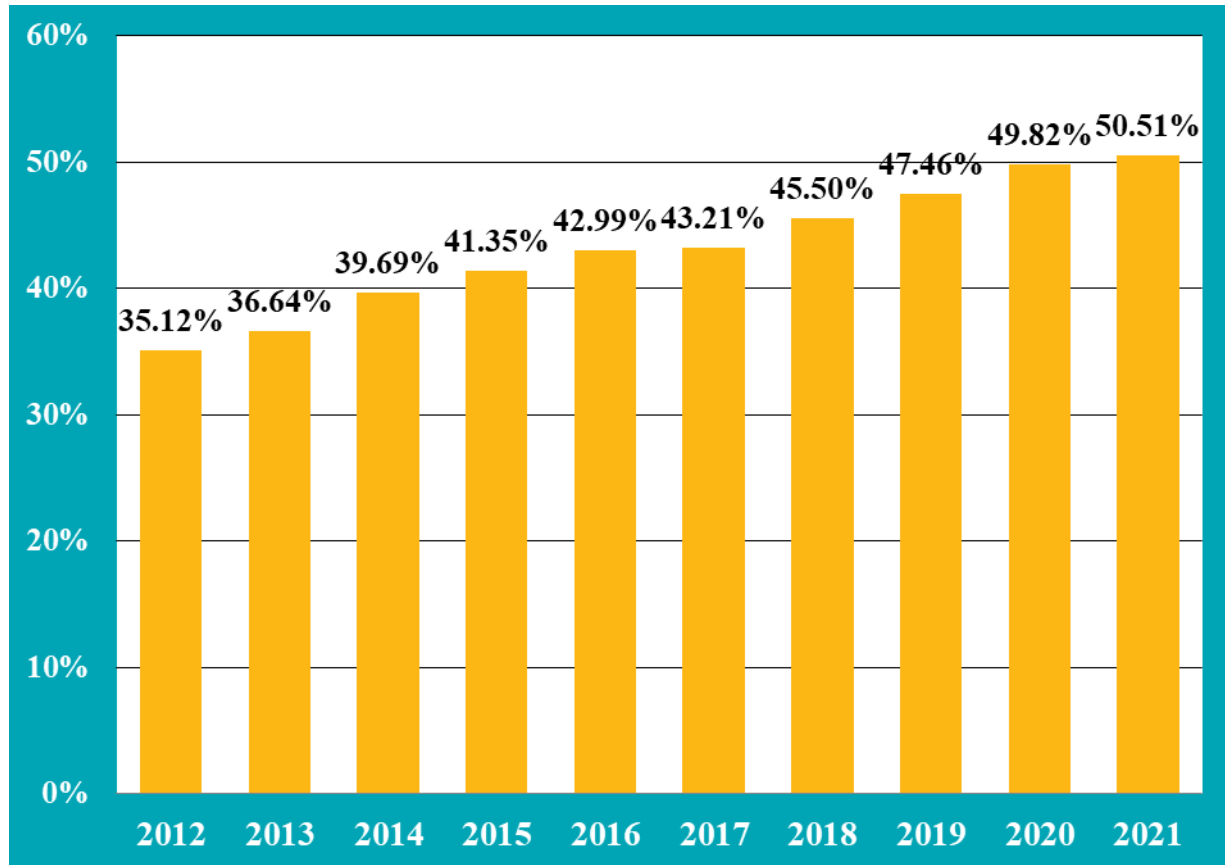
The funded ratio has declined from 69.9% in 2012 to 67.0% in 2021. The extraordinary asset loss of 2008 adversely affected the funded ratio through 2013, as losses were recognized with asset smoothing. In addition, for the 2013, 2016, 2018, and 2020 valuations, assumption changes were made that reflected lower expected future returns on assets and improved mortality, increasing the Actuarial Liability, and therefore decreasing the funded ratio. The return on the Actuarial Value of Assets from 2015 to 2020 has been between 3.9%-5.6%, lower than the assumed rate of return, which has also contributed to the Plan's lack of funding progress. The 7.28% return this year was higher than the assumed rate of return for the first time since 2014.

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**Employer Contribution Rates**

The chart on this page shows the employer contribution rate for each of the last 10 valuation cycles. The same factors that contributed to the decline and subsequent lack of progress in funded status – i.e., lower returns and assumptions that are more conservative – have resulted in increases in contribution rates. Rates have also increased due to growth in payroll lagging behind the actuarial assumptions, which spreads the UAL dollar payment over a smaller payroll base.

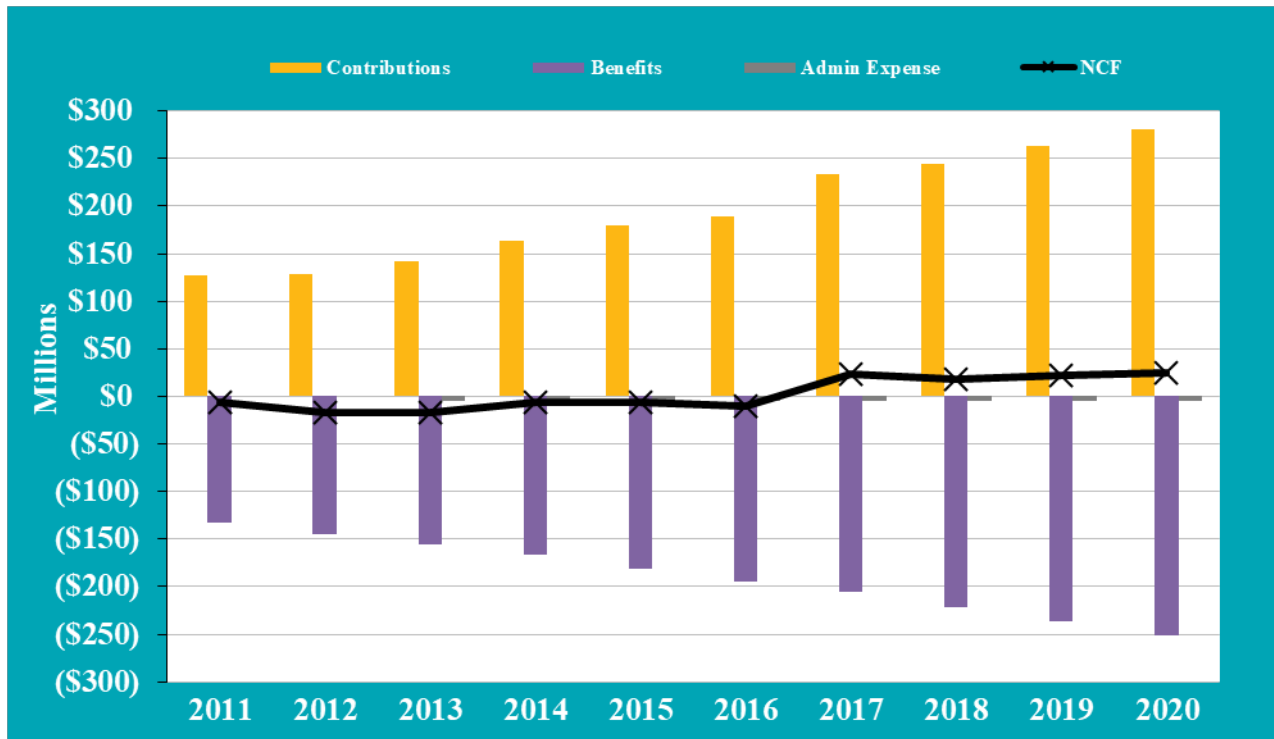


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**Cash Flows**

The chart below shows the Plan's net cash flow (NCF) (contributions less benefit payments and administrative expenses). This is an important measure, as it reflects the ability to have funds available to meet benefit payments without having to make difficult investment decisions, especially during volatile markets.



The NCF – shown as the black line in the chart – was slightly negative for the first six years shown in this period but has been positive the past four years due to the increase in the contribution rates and the additional contributions being made by the County and other employers.

The implications of a plan with negative net cash flow are that the impact of market fluctuations can be more severe: as assets are being depleted to pay benefits in down markets, there is less principal available to be reinvested during favorable return periods. If there were a shift to future negative net cash flow, it could magnify the losses during a market decline, hindering the Plan in its ability to absorb market fluctuations.

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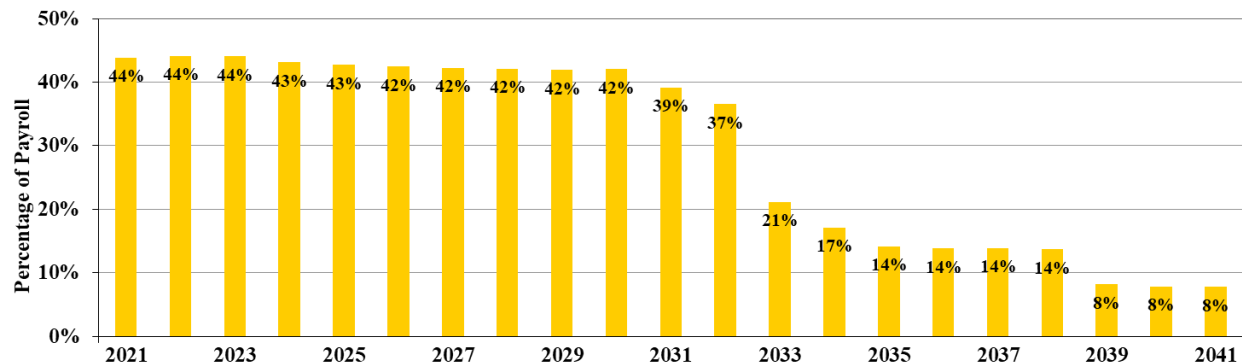
**SECTION I – EXECUTIVE SUMMARY**

**D. Future Expected Financial Trends**

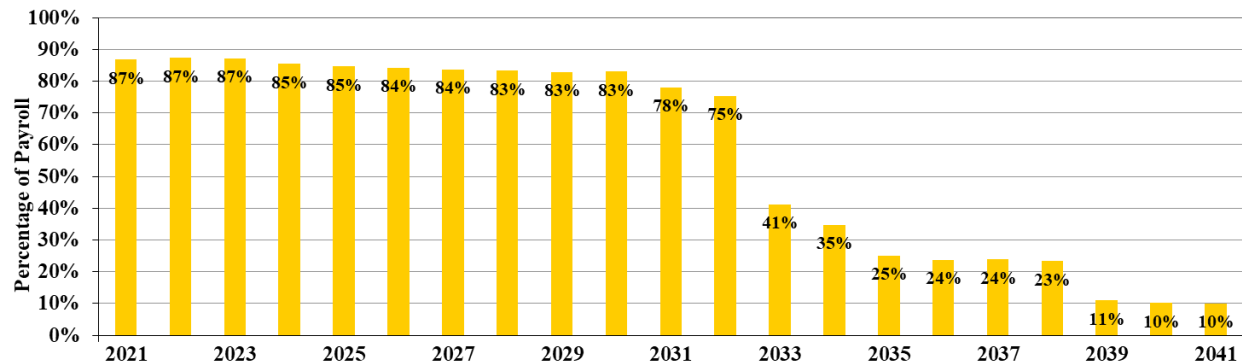
The analysis of projected financial trends is perhaps the most important component of this valuation. In this section, we present our assessment of the implications of the January 1, 2021 valuation results in terms of cost and benefit security (assets over liabilities). All the projections in this section are based on the interest rate assumption of 7.00%. We have assumed a level active workforce population and future payroll growth of 3.00% per year.

The following graphs show the expected employer contribution rates for General and Safety members, and for the Plan in aggregate, based on actually achieving the 7.00% assumption each year for the next 20 years, and if the employers contribute at the actuarially determined rates.

**Projection of General Employer Contributions, 7.00% return each year**



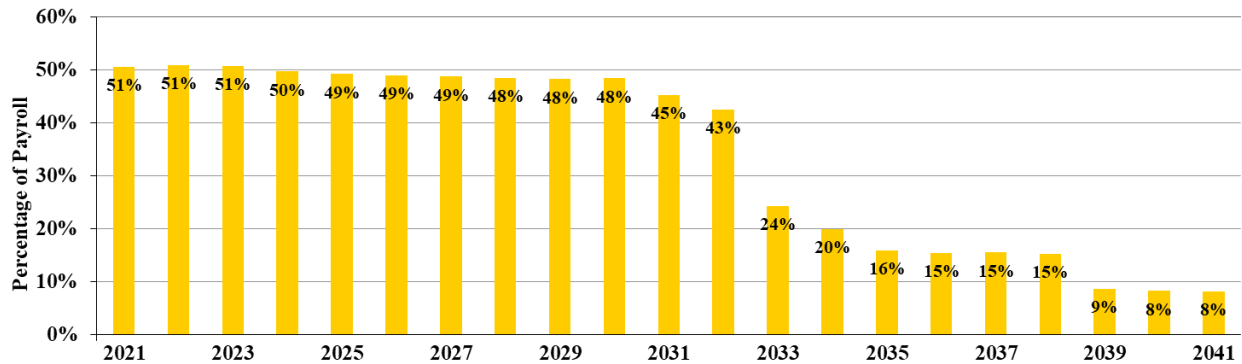
**Projection of Safety Employer Contributions, 7.00% return each year**



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**Projection of Total Employer Contributions, 7.00% return each year**



The projections show that General, Safety and Total County contributions are expected to slightly increase next year, as the impact of the reduction of the discount rate is completely phased in with the 2022 valuation. The dollar contribution will be approximately \$182 million for General and \$65 million for Safety in 2021, growing to around \$208 million for General and \$77 million for Safety in five years, then remaining relatively flat as a percentage of payroll until 2033, when the 2014 UAL is paid off. The slight decline in contribution rates from 2023-2032 is attributable to the recognition of net deferred asset gains, Tier 2 new hires that are expected to replace existing Tier 1 membership, as well as the expiration of other UAL amortization layers.

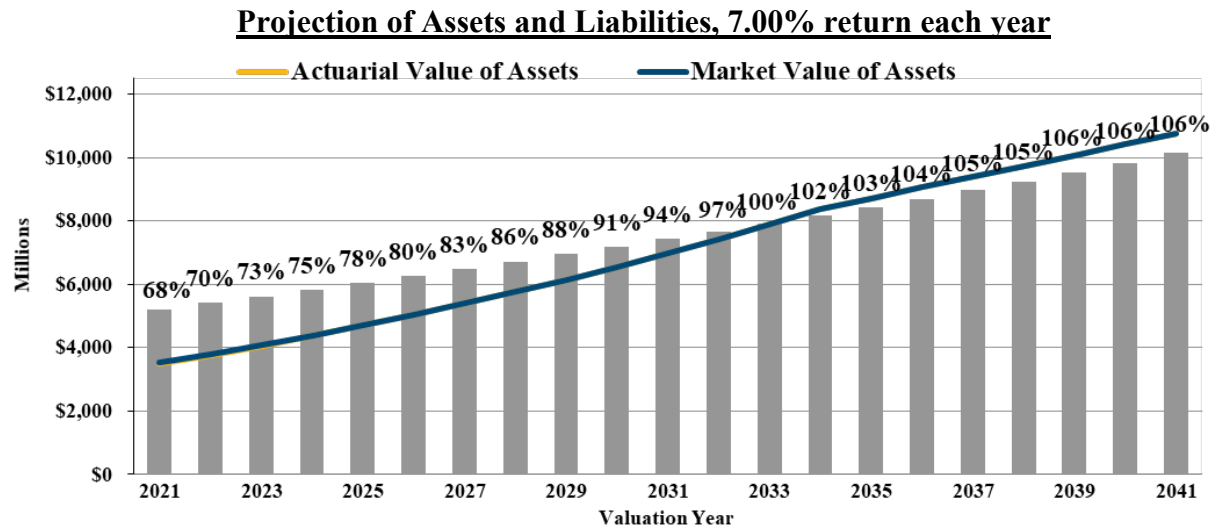
Note that the all the contribution projections do not forecast any actuarial gains or losses (except for net deferred gains on the Market Value of Assets). Even modest losses relative to the 7.00% assumed return could push the employer contribution rates even higher in the next few years. The graphs also do not include the impact of the additional contributions currently being made by the County, the Mosquito and Vector Control District, and the Superior Court; those additional contributions would eventually be expected to be available to reduce the employer contributions in future years.

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**Asset and Liability Projections:**

The graph below shows the projection of SJCERA's assets and liabilities assuming that assets will earn the 7.00% assumption each year during the projection period and the employers contribute at the actuarially determined rates.



The graph shows that the projected funded status on a market value basis increases over the next 20 years to 106%, assuming the actuarial rate of return assumption is achieved. However, as noted above, it is the actual return on System assets that will determine the future funding status and contribution rates to the Fund.

The assets in the graph above include the additional contributions that the County (2017-2020), the Mosquito and Vector Control District (2018-2020), and Superior Court (2019-2020) made to the fund. No further additional contributions are assumed. However, the additional contribution reserves continue to grow at the 7.00% assumed rate of return and are not used in the calculation of the actuarially determined contribution rates, which results in the projected funded status exceeding 100%. If these reserves are eventually used to offset the required contributions for these employers, the Plan would not expect to become overfunded.

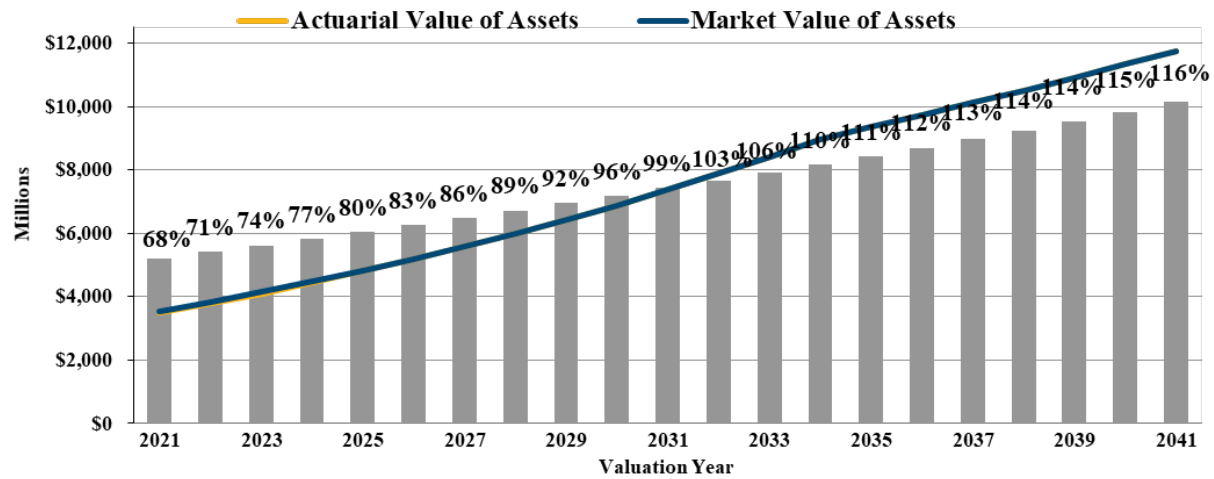
The graph on the next page shows the same information as the previous graph and assumes that additional contributions of 5% of SJCERA payroll are made until the System's funded ratio reaches 100%. Although the Mosquito and Vector Control District and the Superior Courts have been making additional contributions at different rates, and other employers are not currently making additional contributions, we note that the County has been making additional contributions of approximately 5% per year and makes up the vast majority of overall payroll and these additional contributions are for illustrative purposes only. No change in the contribution rate is assumed due to the additional contributions; these assets continue to be excluded from the actuarial cost calculation, as noted earlier.



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**Projection of Assets and Liabilities, 7.00% return each year, Ongoing County Additional 5% Contributions**



As can be seen in the projection above, with the additional expected 5% of pay contributions from the Plan would be expected to return to full funding in 2032, one year earlier than expected in the projections without the additional future contributions.

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**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 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**

A fundamental risk to a pension plan is that the contributions needed to pay the benefits become unaffordable. While we believe it is unlikely that the Plan by itself would become unaffordable, the contributions needed to support the Plan may 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 and payroll 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 than 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 sponsors or other contribution base.

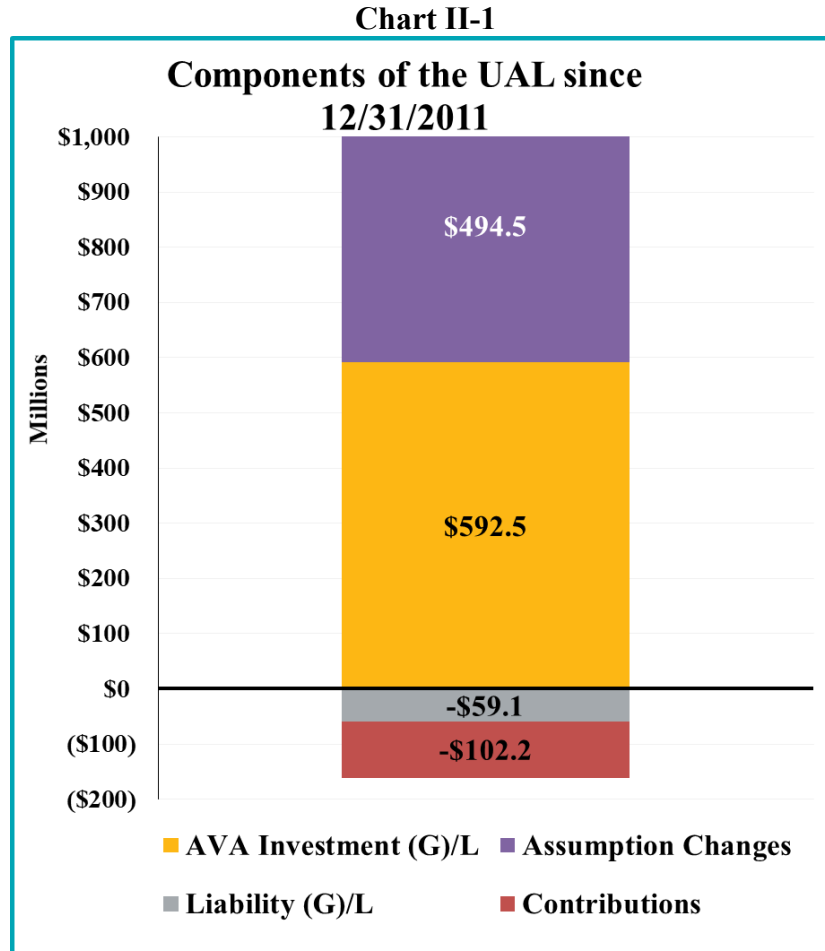
*Assumption change risk* is the potential for the environment to change such that future valuation assumptions are different than the current assumptions. For example, declines in interest rates over the last three decades resulted in higher investment returns for fixed income investments, but lower 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 or if the contribution requirement becomes such a financial strain on the sponsor as a result of material changes in the contribution base (e.g., covered employees, covered payroll) that affect the amount of contributions the Plan can collect.

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The chart below shows the components contributing to the Unfunded Actuarial Liability (UAL) from January 1, 2011 through December 31, 2020. Over the last 10 years, the UAL has increased by approximately \$925.7 million. The investment losses (gold bar) of \$592.4 million on the Actuarial Value of Assets (AVA) and assumptions changes (purple bar) resulting in a total UAL increase of \$494.5 million are the primary sources in the UAL growth. The net liability gains (gray bar) of \$59.1 million and contributions in excess of the “tread water” level (red bar) of \$105.0 million have decreased the UAL since December 31, 2011.

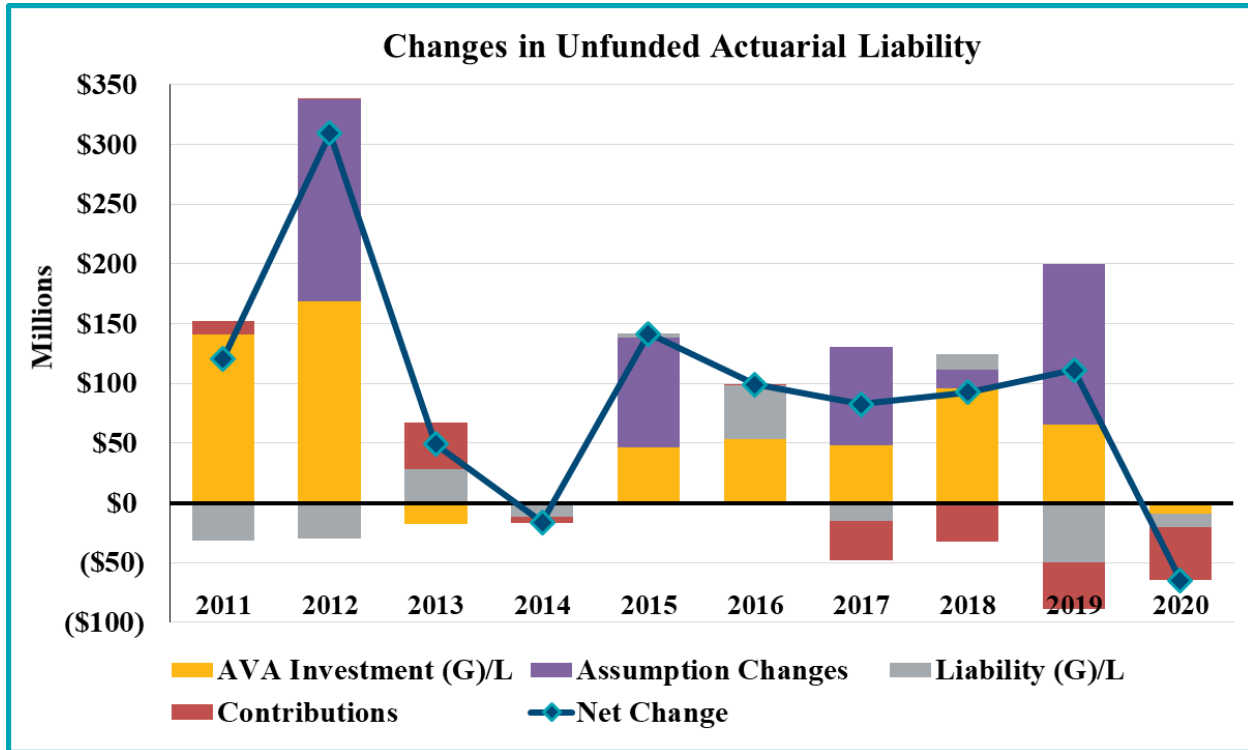


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Chart II-2 below details the annual sources of the UAL change (colored bars) for the plan years ending December 31. The net UAL change for each year is represented by the blue diamonds.

**Chart II-2**



On a market value basis, the average annual geometric return over the 10-year period is 6.2%. This has resulted in investment losses on the AVA every year, increasing the UAL, except for the 2013 and 2020 plan years.

Over the same time 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 Meketa's current capital market assumptions (including their inflation assumption of 2.10%) and the Plan's asset allocation, the expected average annual return is 6.25%, compared to the Plan's updated assumption of 7.00% in 2021. Future expectations 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 projected in the future which had a significant impact on the measurement of the UAL. The assumption changes effective with the January 1, 2019 valuation were only demographic changes with no change to the expected rate of return of 7.25%. The January 1, 2020 valuation decreased the expected rate of return to 7.00%.

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Each year the UAL is expected to increase for benefits earned in the current year (the normal cost), administrative expenses, 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 impact whether or not the contributions exceed the tread water level. For example, the Board changed the amortization policy in 2009 to amortize 50% of the extraordinary asset loss over a 30-year period and the remaining UAL over a 20-year period. Initially, the relatively long amortization period resulted in contributions being below the tread water level.

However, the single equivalent amortization period for the last several years has been much lower (around 14-16 years), with the UAL payment going towards principal as well as interest on the UAL. In addition, the County and at least two other employers have made discretionary contributions above the actuarial determined contribution rate, in the County's case equal to 5% of their pensionable payroll, or approximately \$20 million per year since the 2017 plan year. These contributions went directly toward paying down the principal on the UAL as seen below in Table II-1, which numerically summarizes the changes in the UAL for each year by source over the last 10 years.

**Table II-1**

<b>Unfunded Actuarial Liability (UAL) Change by Source</b>					
<b>December 31,</b>	<b>Investment Experience</b>	<b>Liability Experience</b>	<b>Assumption Changes</b>	<b>Contributions</b>	<b>Total UAL Change</b>
<b>2011</b>	\$141,181,000	(\$31,403,000)	\$0	\$11,186,000	\$120,964,000
<b>2012</b>	168,334,000	(29,597,000)	169,755,000	833,000	309,325,000
<b>2013</b>	(18,030,000)	28,061,000	0	39,067,000	49,098,000
<b>2014</b>	653,000	(11,929,000)	0	(5,073,000)	(16,349,000)
<b>2015</b>	46,200,000	3,691,000	91,855,000	(172,000)	141,574,000
<b>2016</b>	53,461,000	45,033,000	0	831,000	99,325,000
<b>2017</b>	48,426,000	(14,693,000)	81,855,000	(33,016,000)	82,572,000
<b>2018</b>	95,800,000	12,745,000	16,017,000	(31,986,000)	92,576,000
<b>2019</b>	65,252,000	(49,917,000)	135,011,000	(39,203,000)	111,143,000
<b>2020</b>	(8,800,000)	(11,061,000)	0	(44,641,000)	(64,502,000)
<b>Total</b>	<b>\$592,477,000</b>	<b>(\$59,070,000)</b>	<b>\$494,493,000</b>	<b>(\$102,174,000)</b>	<b>\$925,726,000</b>

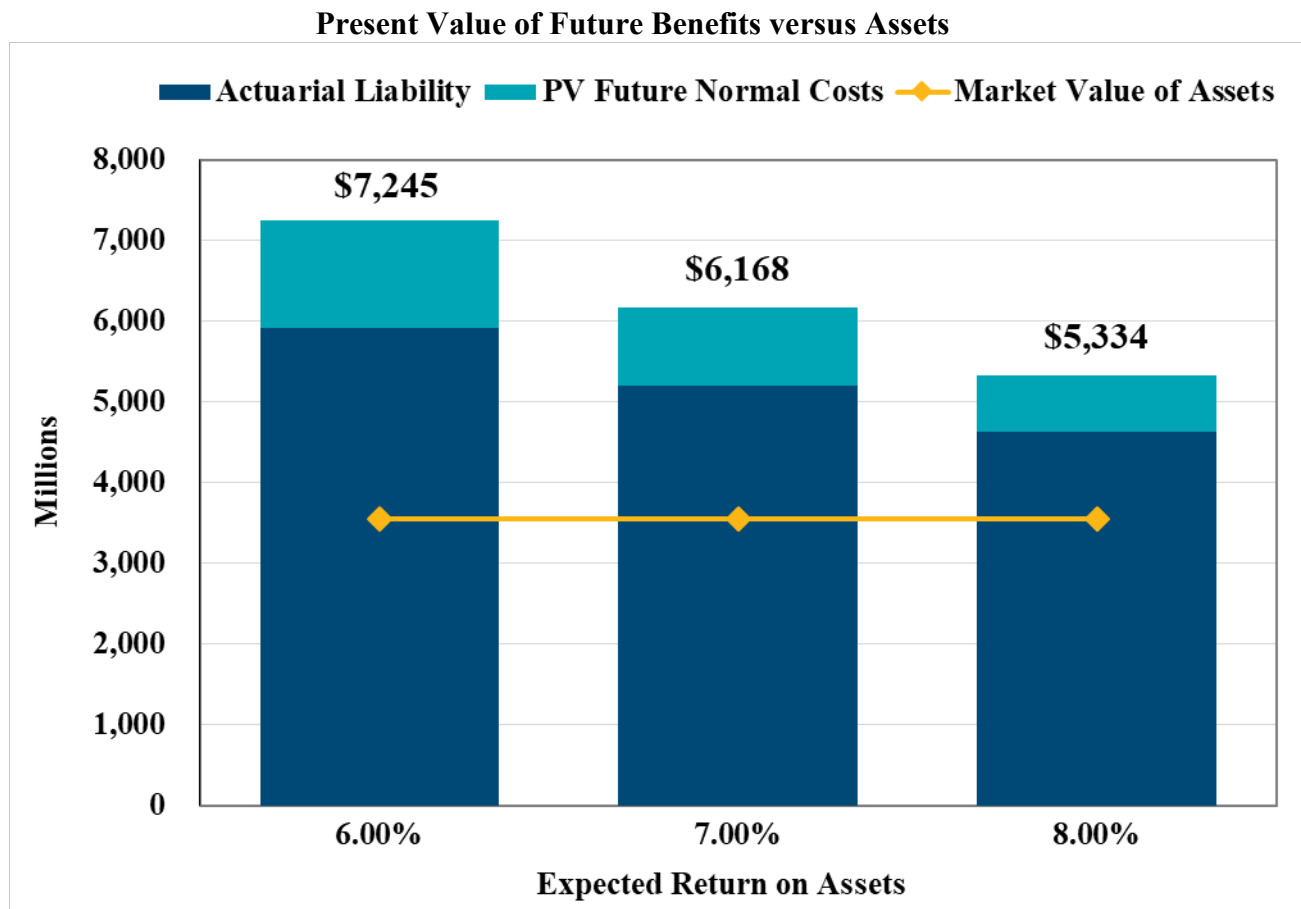
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**Assessing Costs and Risks**

**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 discount rates 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 Market Value of Assets is shown by the gold line.



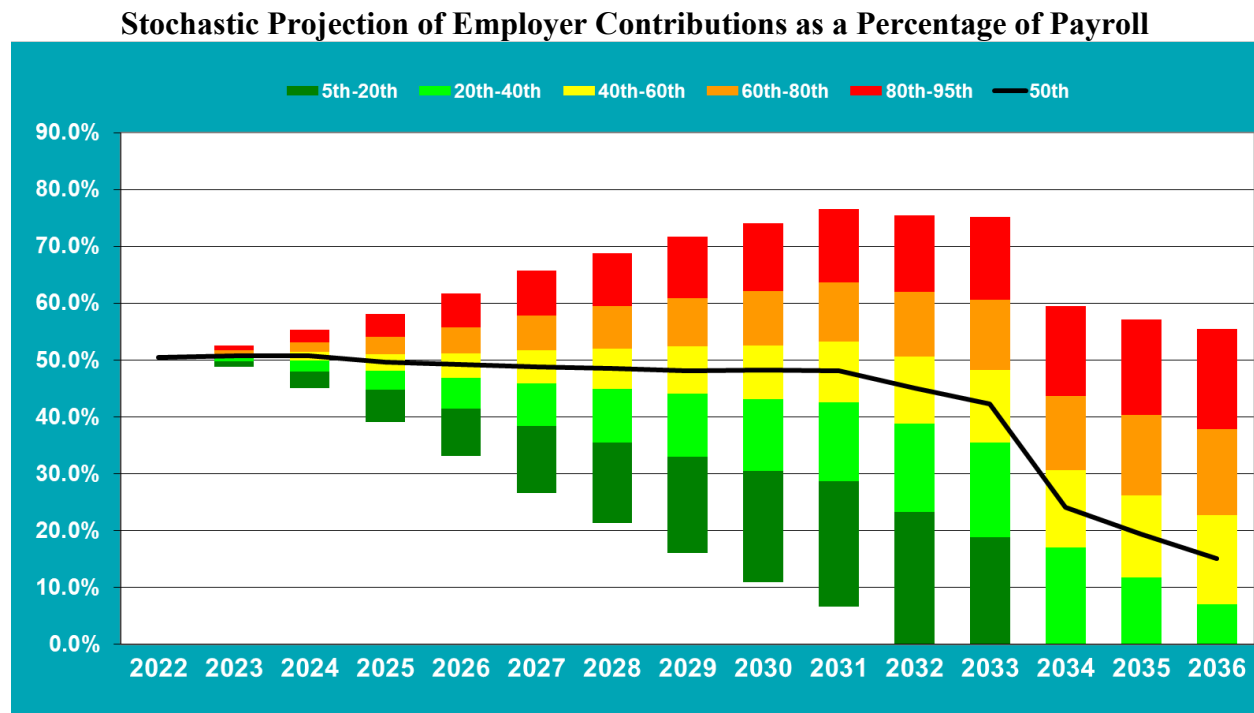
If investments return 7.00% annually, the Plan will need approximately \$6.2 billion in assets today to pay all projected benefits compared to current assets of \$3.5 billion. If investment returns are only 6.00%, the Plan would need approximately \$7.2 billion in assets today, and if investment returns are 8.00%, the Plan would need approximately \$5.3 billion in assets today.

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**Sensitivity to Investment Returns - Stochastic Projections**

Stochastic projections serve to show the range of probable outcomes of various measurements. The graphs below and on the following page show the projected range of the employer contribution rate and of the funded ratio on an Actuarial Value of Assets basis. The range in both scenarios is driven by the volatility of investment returns (assumed to be based on a 10.7% standard deviation of annual returns, as indicated in Meketa's current capital market assumptions).



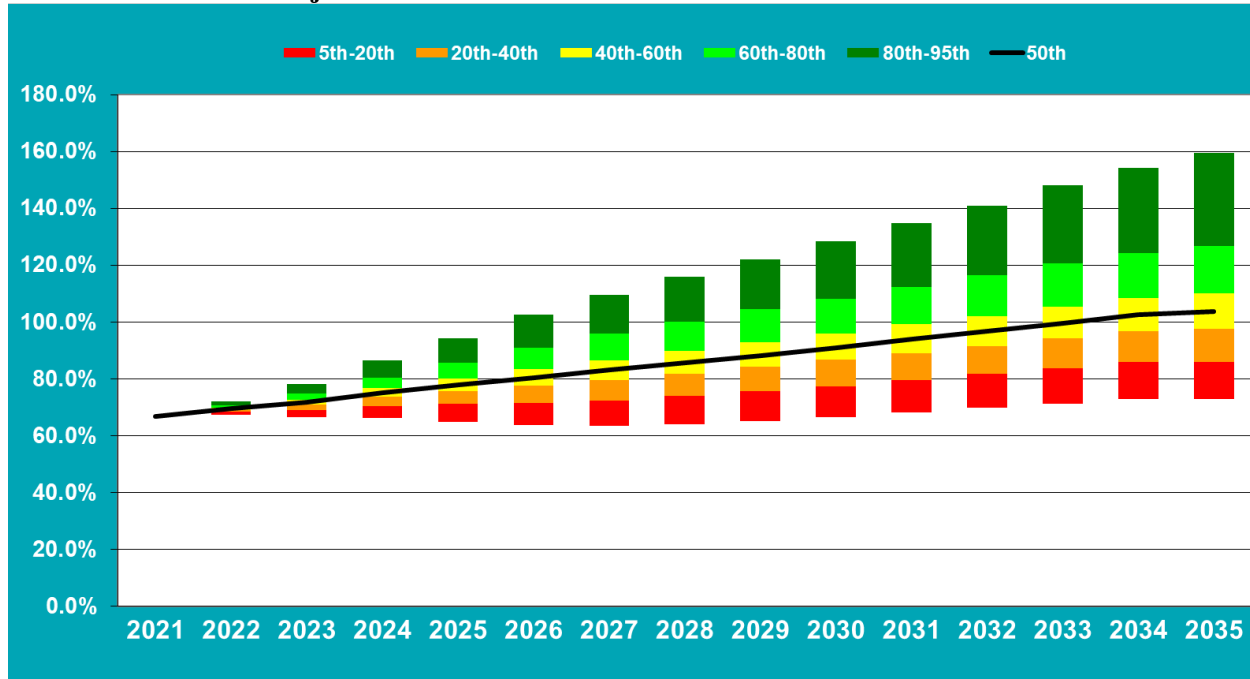
The stochastic projection of employer contributions as a percentage of payroll shows the probable range of future contribution rates. The baseline contribution rate (black line), which is based on the median of the simulations using an average return of 7.00%, aligns closely with the projections discussed in subsection D. of the Executive Summary of this report. In the most pessimistic scenario shown, the 95<sup>th</sup> percentile, the projected employer contribution rate approaches 75% of pay in 2030. Conversely, the most optimistic scenario shown, the 5<sup>th</sup> percentile, the projected employer contribution rate declines to 0% in 2032.

We note that these projections allow the employers' contribution to drop below their share of the normal cost if the Plan becomes overfunded (i.e. a funded ratio above 100%). Under the PEPPA legislation, this is currently only allowed if the Plan becomes extremely over-funded (above 120%) and meets other conditions; these provisions have been ignored for the purposes of these simulations. The projections above do not include the additional contribution reserve or any future contributions above the actuarially determined contributions.

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**Stochastic Projection of Funded Ratio on an Actuarial Value of Assets Basis**



The graph above shows the projection of the funded ratio based on the actuarial value of assets. The projections do not assume future additional contributions from the County or other employers. While the baseline-funded ratio (black line) is projected to be approximately 103% 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 current funding policy of the Plan, even in scenarios with unfavorable investment returns, the Plan is projected to remain over 60% funded on an Actuarial Value of Assets basis in all but the most unfavorable of scenarios, as long as the actuarially determined contributions continue to be made.

### **Contribution Risk**

The Safety contribution rate is very large at nearly 87% of payroll and as a result, 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 stagnate or decline since contributions are based on payroll levels.

There is also a risk of the contribution rate increasing even higher when payroll decreases since the Plan's funding policy amortizes the UAL as a level percentage of payroll. This means that the UAL payments 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 payroll increases, making the Plan less affordable for the Safety and potentially other plan sponsors.



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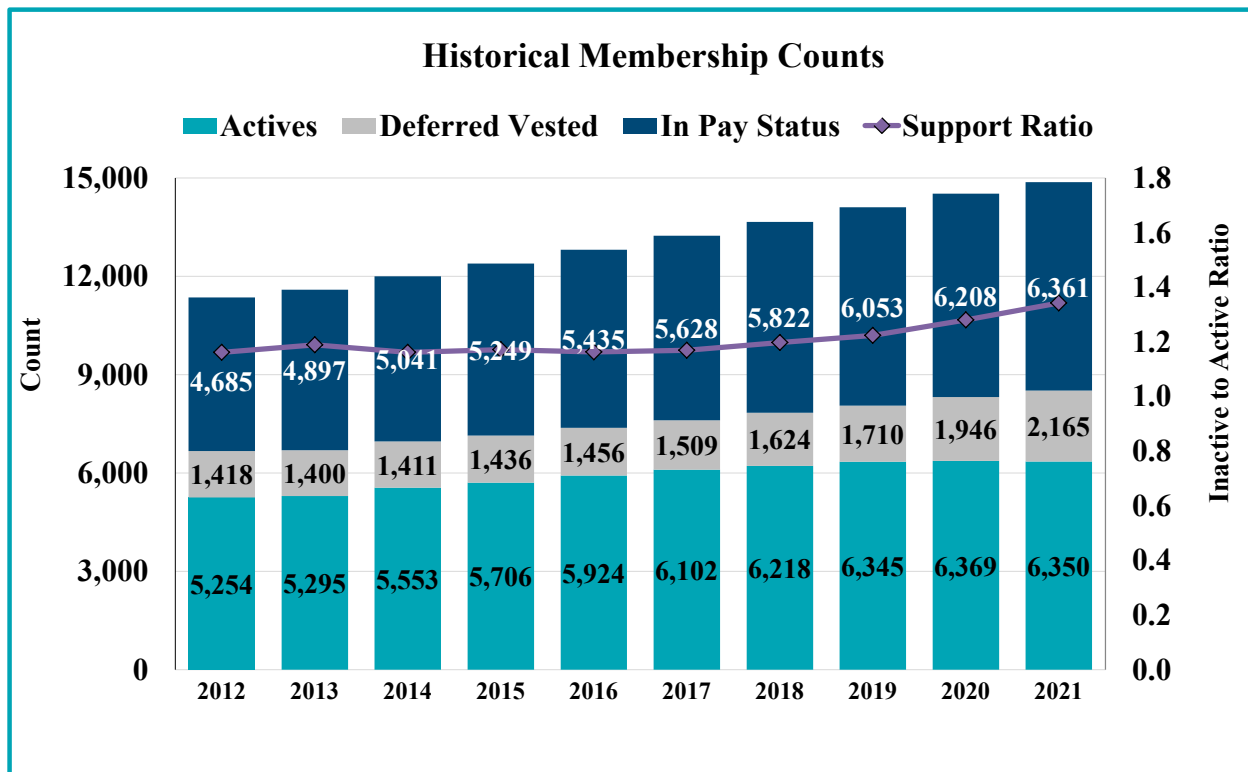
**Plan Maturity Measures**

The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. Before assessing each of these risks, it is important to understand the maturity of the Plan and how the maturity 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 2012 to 2013 as the number of active members declined and the number of retirees increased. The Support Ratio slightly declined from 2014 to 2017 since the active population increased an average of about 3.6% per year. The last four years, the active population increased at a slower pace than the inactive population, resulting in an uptick in the Support Ratio.



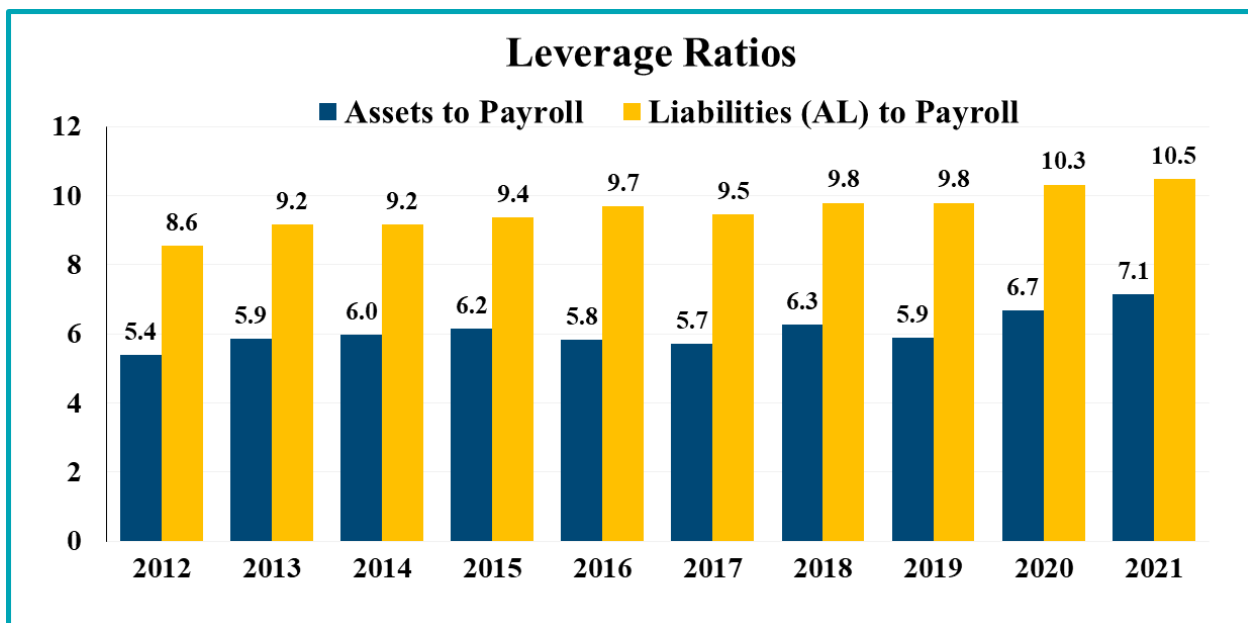
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**Leverage Ratios**

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 to active member payroll and indicates the sensitivity of the Plan to investment returns. The liability leverage ratio is the 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 2012, but the asset to payroll ratio had remained relatively stable around 6.0 - assets are six times member payroll – from 2013 to 2019. In 2020 and 2021, the ratio increased to 6.7 and 7.1 times member payroll, respectively, due to the favorable asset returns. The liability to payroll ratio increased by 0.5 in 2020 since the liabilities increased as a result of lowering the discount rate from 7.25% to 7.00%.

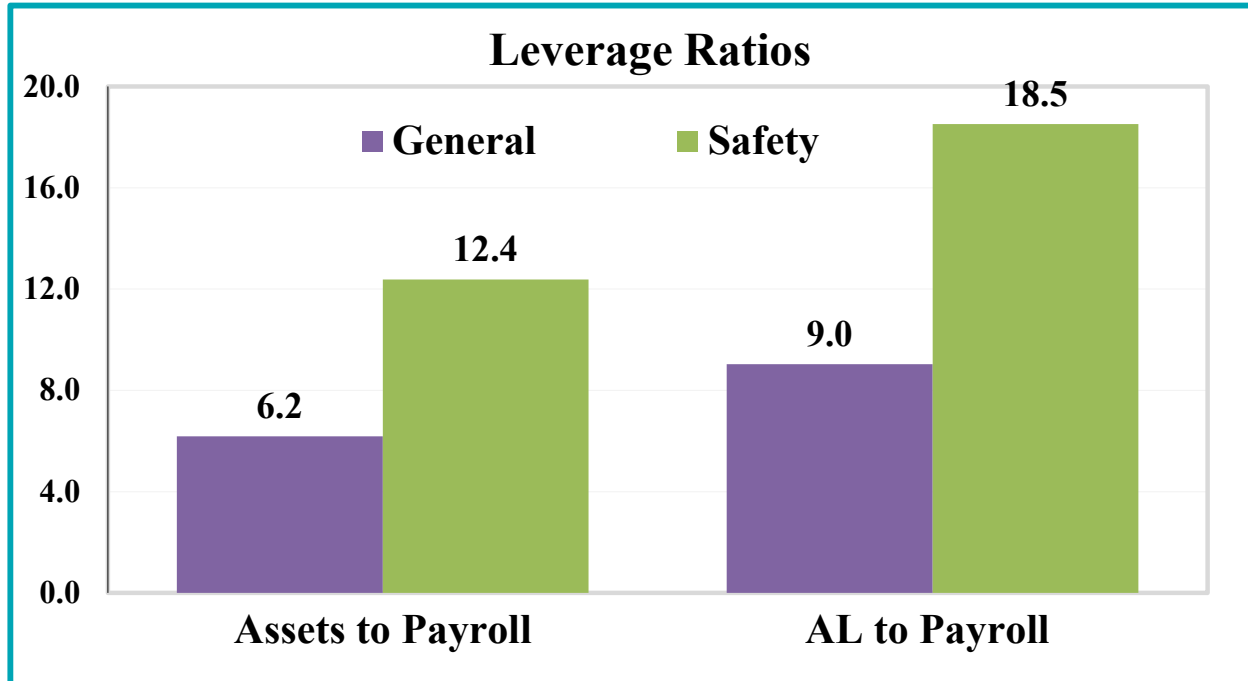


To appreciate the impact of the ratio of assets to payroll on plan cost, consider the situation for a new plan with almost no assets. Even if the assets suffer a bad year of investment returns, the impact on the plan cost is nil, because the asset level is so small.

As the Plan becomes better funded, the asset leverage ratio will increase, and if it were 100% funded, the asset leverage ratio would be over 10 times payroll, or the liability 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 members compared to the General members, because of the higher benefit amounts and the earlier average retirement ages for Safety.

SECTION II – DISCLOSURES RELATED TO RISK



The General asset leverage ratio of 6.2 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 105% of payroll (17.00% times 6.2). Based on the current amortization policy and economic assumptions, the General contribution rate would ultimately increase by about 10% of payroll, after deferred asset losses are fully recognized. The same investment loss for the Safety group with an asset ratio of 12.4 would be equivalent to 211% of payroll, or an approximate contribution rate increase of 21%. Therefore, the contribution rates for the Safety 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.

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**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 impact benefit levels, 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 December 31, 2019 and December 31, 2020,
- Statement of the **changes** in market values during the year,
- Development of the **Actuarial Value of Assets**,
- An assessment of **investment performance**, and
- Determination of **reserve balances** as of January 1, 2021.

**Disclosure**

There are two types of asset values disclosed in the valuation, the Market Value of Assets, and the Actuarial Value of Assets. The market value represents the fair value of assets that provide the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not as suitable for long-range planning as are the Actuarial Value of Assets, which reflect smoothing of annual investment returns.

Table III-1 on the next page discloses and compares the market values as of December 31, 2019 and December 31, 2020.

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**SECTION III – ASSETS**

<b>TABLE III-1</b>			
<b>Statement of Assets at Market Value</b>			
<b>December 31,</b>			
<b>Assets:</b>	<b>2019</b>	<b>2020</b>	
Cash and Cash Equivalents	\$ 72,762,977	\$ 146,456,177	
Cash Collateral-Securities Lending	46,038,227	83,589,197	
Total Cash and Cash Equivalents	118,801,204	230,045,374	
<b>Receivables:</b>			
Investment Income Receivables	5,847,455	3,400,405	
Contributions Receivable	8,187,026	10,074,285	
Securities Sold, Not Received - Domestic	3,111,902	1,065,084	
Other Investment Income Receivable	0	0	
Miscellaneous Receivables	46,448	40,873	
Total Receivables	17,192,831	14,580,647	
<b>Investments, at Market Value:</b>			
Stable Fixed Income	318,806,931	322,514,912	
Credit	408,015,328	479,100,892	
Global Public Equity	1,089,461,379	1,258,623,730	
Private Appreciation	415,332,040	456,340,240	
Risk Parity	408,546,978	409,233,403	
Crisis Risk Offset	518,236,764	463,660,827	
Total Investments	3,158,399,420	3,389,474,004	
<b>Other Assets:</b>			
Prepaid Expenses	82,030	140,655	
Equipment and Fixtures, Net	179,797	136,246	
Other Assets	261,827	276,901	
<b>Total Assets</b>	<b>3,294,655,282</b>	<b>3,634,376,926</b>	
<b>Liabilities:</b>			
Securities Lending-Cash Collateral	46,038,227	83,589,197	
Securities Purchased, Not Paid	3,402,003	2,986,539	
Accrued Expenses and Other Payables	762,190	1,076,401	
Security Lending Interest and Other Expense	91,035	12,540	
<b>Total Liabilities</b>	<b>50,293,455</b>	<b>87,664,677</b>	
<b>Market Value of Assets</b>	<b>\$ 3,244,361,827</b>	<b>\$ 3,546,712,249</b>	

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**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 2019 and 2020.

<b>TABLE III-2 Changes in Market Values</b>		
<b><u>Additions</u></b>	<b><u>2019</u></b>	<b><u>2020</u></b>
Contributions		
Employer's Contribution	225,528,756	240,700,988
Members' Contributions	38,098,688	40,568,995
Total Contributions	<u>263,627,444</u>	<u>281,269,983</u>
Net Investment Income		
Net Appreciation/(Depreciation) in		
Fair Value of Investments	345,001,380	256,770,057
Interest	34,070,170	20,997,097
Dividends	6,958,776	5,563,699
Real Estate Income, net	13,540,096	11,223,598
Investment Expenses	(19,363,548)	(18,016,050)
Miscellaneous Investment Income	54,974	2,390
Net Investment Income,		
Before Securities Lending Income	<u>380,261,848</u>	<u>276,540,791</u>
Securities Lending Income		
Earnings	2,186,019	581,476
Rebates	(1,734,932)	(165,250)
Fees	(112,594)	(103,839)
Net Securities Lending Income	<u>338,493</u>	<u>312,387</u>
Net Investment Income	<u>380,600,341</u>	<u>276,853,178</u>
Miscellaneous Income	<u>74,187</u>	<u>143,352</u>
Total Additions	<u>644,301,972</u>	<u>558,266,513</u>

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**SECTION III – ASSETS**

<b>TABLE III-2</b>		
<b>Changes in Market Values (Continued)</b>		
<b><u>Deductions</u></b>	<b><u>2019</u></b>	<b><u>2020</u></b>
Benefit payments	232,736,441	247,254,985
Death Benefits	668,768	808,150
Refunds of Members' Contributions	<u>2,944,863</u>	<u>3,488,542</u>
Total Benefit Payments	236,350,072	251,551,677
Administrative & Other Expenses		
General Administrative Expenses	3,708,350	3,936,825
Actuary Fees	226,652	123,800
Fund Legal Fees	<u>996,161</u>	<u>475,830</u>
Total Administrative & Other Expenses	4,931,163	4,536,455
Transfer Between Plans	<u>(299,014)</u>	<u>(172,041)</u>
Total Deductions	240,982,221	255,916,091
Net increase (Decrease)	403,319,751	302,350,422
Net Assets Held in Trust for Pension Benefits:		
Beginning of Year	<u>2,841,042,076</u>	<u>3,244,361,827</u>
End of Year	<u><u>3,244,361,827</u></u>	<u><u>3,546,712,249</u></u>
Approximate Return	13.35%	8.50%

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**SECTION III – ASSETS**

**Actuarial Value of Assets (AVA)**

The Actuarial Value of Assets represents a “smoothed” value developed by the actuary to reduce contribution volatility, which could develop due to short-term fluctuations in the Market Value of Assets. For this System, the Actuarial Value of Assets is calculated by recognizing the deviation of actual investment returns compared to the expected return over a five-year period.

The dollar amount of the expected return on the Market Value of Assets is determined using the actual contributions, administrative expense, and benefit payments during the year. Any difference between this amount and the actual investment earnings is considered a gain or loss. However, in no event will the Actuarial Value of Assets be less than 80% or more than 120% of market value on the valuation date. The following table shows the development of the actuarial asset value.

<b>TABLE III-3 Development of Actuarial Value of Assets as of January 1, 2021</b>									
	(a)	(b)	(c)	(d)	(e)	(f)	(g) = (f) – (e)	(h)	(i) = (g) x (h)
Year	Contributions	Benefits	Administrative Expense	Healthcare Fund Transfer	Expected Return	Actual Return	Additional Earnings	Not Recognized	Unrecognized Earnings
2017	233,686,648	205,406,970	4,118,578	364,714	189,960,353	299,960,693	110,000,340	20%	22,000,068
2018	244,135,523	221,443,667	4,865,082	324,269	209,406,849	(56,397,598)	(265,804,447)	40%	(106,321,779)
2019	263,627,444	236,350,072	4,931,163	299,014	206,793,106	380,674,528	173,881,422	60%	104,328,853
2020	281,269,983	251,551,677	4,536,455	172,041	227,983,829	276,996,530	49,012,701	80%	39,210,161
1. Total Unrecognized Dollars									59,217,303
2. Market Value of Assets as of December 31, 2020									3,546,712,249
3. Preliminary Actuarial Value of Assets as of December 31, 2020: [(2) - (1)]									3,487,494,946
4. Corridor Limits									
a. 80% of Net Market Value									2,837,369,799
b. 120% of Net Market Value									4,256,054,699
5. Actuarial Value of Assets after Corridor									3,487,494,946
6. Ratio of Actuarial Value to Market Value [(5) ÷ (2)]									98.33%
7. Market Stabilization Designation [(2) – (5)]									59,217,303
8. Special (Non Valuation) Reserves:									
Class Action Settlement – Post 4/1/1982									70,425
Contingency									0
Undistributed Earnings Reserve									0
Total Special Reserves									70,425
9. Actuarial Value of Assets for the Funding Ratio: [(5) - (8)]									<b>\$3,487,424,521</b>
10. Additional Contribution Reserves									\$97,140,039
11. Actuarial Value of Assets Used for Calculating the Employer Contribution Rates: [(9) - (10)]									<b>\$3,390,284,482</b>



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**SECTION III – ASSETS**

**Investment Performance**

The following table calculates the investment related gain/loss for the plan year on both a market value and an actuarial value basis. The market value gain/loss is a useful measure for comparing the actual asset performance to the previous valuation assumption.

The employer contributions include the additional contributions of \$22,089,251 made by the County, the MVCD, and the Superior Court in the gain/loss development for the market value of assets but are excluded in the analysis for the valuation assets.

<b>TABLE III-4 Asset Gain/(Loss)</b>		
	<b>Market Value</b>	<b>Valuation Assets</b>
<b>January 1, 2020 value</b>	<b>\$ 3,244,361,827</b>	<b>\$ 3,157,104,147</b>
Employer Contributions	240,700,988	218,611,737
Employee Contributions	40,568,995	40,568,995
Healthcare Transfer	172,041	172,041
Benefit Payments	(251,551,677)	(251,551,677)
Administrative Expenses	(4,536,455)	(4,536,455)
Expected Investment Earnings (7.00%)	227,983,829	221,115,743
Expected Value December 31, 2020	<b>\$ 3,497,699,548</b>	<b>\$ 3,381,484,531</b>
Investment <b>Gain / (Loss)</b>	<b>49,012,701</b>	<b>8,799,951</b>
<b>January 1, 2021 value</b>	<b>\$ 3,546,712,249</b>	<b>\$ 3,390,284,482</b>
Return	8.50%	7.28%

Note that the return on market value shown above is not the dollar-weighted return on assets required for purposes of GASB Statements 67 and 68.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION III – ASSETS**

The following table shows the historical annual asset returns on a market value and actuarial value basis, as well in the increase in the Consumer Price Index (CPI) since 1999.

<b>TABLE III-5 Historical Asset Returns</b>			
<b>Year Ended December 31</b>	<b>Return on Market Value</b>	<b>Return on Actuarial Value</b>	<b>Increase in CPI<sup>1</sup></b>
1999	13.7%	15.1%	2.7%
2000	3.2%	11.5%	3.4%
2001	( 0.1%)	8.8%	1.6%
2002	( 5.5%)	4.7%	2.4%
2003	25.5%	6.8%	1.9%
2004	11.8%	6.6%	3.3%
2005	6.9%	7.2%	3.4%
2006	12.7%	9.6%	2.5%
2007	6.9%	11.2%	4.1%
2008	( 30.1%)	( 14.3%)	( 0.5%)
2009	11.4%	7.4%	2.5%
2010	12.4%	6.4%	1.5%
2011	1.3%	( 1.8%)	3.0%
2012	11.7%	( 0.2%)	1.7%
2013	9.2%	8.5%	1.5%
2014	4.7%	7.5%	0.8%
2015	( 1.9%)	5.6%	0.7%
2016	6.3%	5.3%	2.1%
2017	11.7%	5.6%	2.1%
2018	( 2.0%)	3.9%	1.9%
2019	13.3%	5.1%	2.3%
2020	8.5%	7.3%	1.4%
Compounded			
15- Year Average	4.4%	4.3%	1.8%
Compounded			
10- Year Average	6.2%	4.6%	1.7%
Compounded			
5- Year Average	7.4%	5.4%	2.0%

<sup>1</sup> Based on All Urban Consumers - U.S. City Average, December Indices.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION III – ASSETS**

**Reserve Balances**

The following table shows historical balances of the Post-1982 Settlement Reserve.

<b>TABLE III-6 Post-1982 Settlement Reserve</b>				
<b>Valuation Date January 1</b>	<b>Number Eligible</b>	<b>Benefits Payable</b>	<b>Reserve</b>	<b>Estimated Years of Payments</b>
2008	1,896	3,683,939	25,872,222	13
2009	1,856	3,602,904	22,015,055	10
2010	1,800	3,484,762	20,090,654	9
2011	1,738	3,370,636	18,108,660	6
2012	1,679	3,243,068	14,556,866	5
2013	1,709	3,244,009	11,063,855	4
2014	1,662	3,197,416	8,765,004	3
2015	1,617	3,046,233	6,338,007	2
2016	1,560	2,939,133	3,644,507	1
2017	1,501	2,821,575	915,393	<1
2018	1,441	2,705,007	485,100	<1
2019	1,376	2,594,058	62,951	<1
2020	1,313	2,479,710	65,877	<1
2021	1,255	2,372,539	70,425	<1

As of January 1, 2021, the total projected liability associated with paying the Post-82 Settlement allowances for the remaining lifetime of the eligible members and beneficiaries is approximately \$17.3 million. Payments from the Post-82 Settlement reserve have been suspended, with the last benefits payable in August of 2018.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION IV – LIABILITIES**

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

- **Disclosure** of System liabilities at January 1, 2020 and January 1, 2021
- Statement of **changes** in these liabilities during the year

**Disclosure**

Several types of liabilities are calculated and presented in this report. We note that the liabilities described below are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in the case of a plan termination or other similar action.

- **Present Value of Future Benefits:** Used for measuring all future System obligations, represents the amount of money needed today to fully fund all benefits of the System both 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 Actuarial Value of Assets.

Table IV-1 discloses each of these liabilities for the current and prior valuations and shows the allocation of the valuation assets between SJCERA's valuation subgroups, General and Safety. 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**.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION IV – LIABILITIES**

Table IV-1 Allocation of Assets by Subgroup and Liabilities/Net (Surplus)/Unfunded					
	January 1, 2020 Total	January 1, 2021 Total	(a) General	(b) Safety	(c) Unallocated
1. Member Reserves	\$ 403,100,250	\$ 432,960,501	\$ 349,329,475	\$ 83,631,026	\$ 0
2. Employer Advance Reserves w/o Add'l Contribs	1,521,571,733	1,735,539,236	1,245,662,481	489,876,756	0
3. Retired Member Reserves	1,228,326,028	1,214,247,124	883,441,472	326,693,650	4,112,002
4. Total Valuation Reserves (1 + 2 + 3)	\$ 3,152,998,011	\$ 3,382,746,862	\$ 2,478,433,427	\$ 900,201,431	\$ 4,112,002
5. Additional Contribs to Employer Advance Reserves	68,994,995	97,140,039	82,287,935	14,852,104	0
6. AVA Gain/Loss, less Stabilization Reserve	0	7,537,621	0	0	7,537,621
7. Total Reserves (4 + 5 + 6)	\$ 3,221,993,006	\$ 3,487,424,521	\$ 2,560,721,362	\$ 915,053,535	\$ 11,649,623
8. Proportion Reserves of Line 4, by Plan			73.36%	26.64%	
9. Valuation Assets for Funding Ratio ( 7 + [8 * 7c])	\$ 3,226,099,142	\$ 3,487,424,521	\$ 2,569,267,067	\$ 918,157,454	
10. Valuation Assets for Developing Contribution Rate ( 4 + [8 * 7c])	\$ 3,157,104,147	\$ 3,390,284,482	\$ 2,486,979,132	\$ 903,305,350	
<b><u>Present Value of Future Benefits</u></b>					
Actives	\$ 2,635,984,057	\$ 2,660,484,116	\$ 2,014,991,110	\$ 645,493,006	
Terminated Vested	158,891,745	179,201,791	145,497,520	33,704,271	
Retirees	2,659,587,412	2,814,228,539	2,091,456,060	722,772,479	
Disabled	311,207,830	313,863,478	127,032,887	186,830,591	
Beneficiaries	192,187,309	200,215,069	131,370,843	68,844,226	
11. <b>Present Value of Future Benefits (PVB)</b>	<b>\$ 5,957,858,353</b>	<b>\$ 6,167,992,993</b>	<b>\$ 4,510,348,420</b>	<b>\$ 1,657,644,573</b>	
12. Present Value of Future Normal Costs (PVFNC)	944,225,887	960,323,692	713,886,301	246,437,391	
13. <b>Actuarial Liability (11 - 12)</b>	<b>\$ 5,013,632,466</b>	<b>\$ 5,207,669,301</b>	<b>\$ 3,796,462,119</b>	<b>\$ 1,411,207,182</b>	
14. <b>Funded Ratio (9 / 13)</b>	<b>64.3%</b>	<b>67.0%</b>	<b>67.7%</b>	<b>65.1%</b>	
15. <b>Net (Surplus)/Unfunded (13 - 10)</b>	<b>\$ 1,856,528,319</b>	<b>\$ 1,817,384,819</b>	<b>\$ 1,309,482,987</b>	<b>\$ 507,901,832</b>	

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION IV – LIABILITIES**

**Changes in Liabilities**

Each of the liabilities disclosed in the prior table 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
- 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 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

**TABLE IV-2  
Changes in Actuarial Liability**

Actuarial Liability at January 1, 2020	\$ 5,013,632,466
Actuarial Liability at January 1, 2021	\$ 5,207,669,301
Liability Increase (Decrease)	194,036,835
Change due to:	
Accrual of Benefits	\$ 106,869,617
Actual Benefit Payments	(251,551,677)
Interest	349,779,745
Assumption Changes	0
Actuarial Liability (Gain) / Loss	(11,060,850)

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION IV – LIABILITIES**

**TABLE IV-3  
Development of Actuarial (Gain) / Loss**

	General	Safety	Total
1. Unfunded Actuarial Liability at Start of Year (not less than zero)	\$ 1,339,358,650	\$ 517,169,670	\$ 1,856,528,319
2. Middle of year unfunded actuarial liability payment	(119,284,384)	(45,407,979)	(164,692,363)
3. Interest to end of year on 1. and 2.	89,650,763	34,639,477	124,290,240
4. Increase in Actuarial Liability due to assumption change	0	0	0
5. Expected UAL at the end of year (1+2+3+4)	1,309,725,029	506,401,168	1,816,126,197
6. Actual Unfunded Liability at end of year <sup>1</sup>	1,309,482,987	507,901,832	1,817,384,819
7. Net (Gain)/Loss: (6 - 5)	(242,042)	1,500,664	1,258,622
8. Actuarial Liability (Gain) / Loss	\$ (8,724,834)	\$ (2,336,016)	\$ (11,060,850)
9. Actuarial Asset (Gain) / Loss	\$ (5,951,187)	\$ (2,848,764)	\$ (8,799,951)
10. Contribution (Gain) / Loss	\$ 14,433,979	\$ 6,685,444	\$ 21,119,423

<sup>1</sup> Assets exclude the additional County, MVCD, and Superior Court Contribution Reserves.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**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. The actuarial process utilizes funding techniques with a goal of producing 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 the **administrative expense** contribution.

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

The member contribution rates used in this valuation reflect the broad cost sharing arrangements in place as of the valuation date that apply to the 2022 Plan Year (i.e. whether the bargaining unit is making the full COLA cost-sharing member contribution and/or the additional 14%/33% Basic member rate). However, the valuation does not include additional fixed rate contributions payable by some bargaining units (of 3%, 4% or 5% of payroll). Those additional contributions are applied outside of the valuation, and reductions to the employer rates to reflect those additional contributions are provided directly to the individual bargaining groups.

The Unfunded Actuarial Liability is the difference between the EAN Actuarial Liability and the Actuarial Value of Assets. At the July 24, 2015 board meeting, the SJCERA Board of Retirement chose to make a change to their funding policy, opting to amortize any unexpected changes in the UAL over a period of 15 years as a level percentage of payroll, with new amortization layers each year. The result was a set of three amortization bases as of January 1, 2015: the 2008 loss being amortized over 24 years, the remaining UAL as of December 31, 2014 being amortized over 18 years, and new additions to the UAL on and after January 1, 2015 amortized over 15 years. At the February 14, 2020 board meeting, the SJCERA Board of Retirement chose to phase-in the impact of the January 1, 2020 economic assumption changes to the UAL over a period of three years, followed by 12 years of payments as a level percentage of payroll. The single equivalent amortization period for all streams of UAL payments is 14 years as of January 1, 2021. The amortization period for each Unfunded Actuarial Liability layer will decrease each year.

The total administrative expenses are assumed to be \$5,035,179 in 2021, increasing with the CPI assumption each valuation. The administrative expenses are split between employees and employers based on their share of the overall contributions.



**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION V – CONTRIBUTIONS**

The tables on the following pages present the employer contributions for the System for this valuation.

<b>TABLE V-1 Development of Employer Contribution Amount</b>		
	<b>January 1, 2021</b>	
		<b>% of pay</b>
1. Normal Cost at Middle of Year	\$67,184,255	14.58%
2. Amortization of Unfunded Liability		
a. Actuarial Liability	\$ 5,207,669,301	
b. Actuarial Value of Assets <sup>1</sup>	<u>\$3,390,284,482</u>	
c. Unfunded Liability (a) – (b)	\$ 1,817,384,819	
d. Amortization of Unfunded Liability	\$174,244,095	35.07%
3. Administrative Expenses <i>(Employer allocation only)</i>	4,266,295	0.86%
4. Actuarially Determined Contribution (1) + (2d) + (3)	\$ 245,694,645	50.51%

<sup>1</sup> Assets exclude additional County, MVCD, and Superior Court Contribution Reserves.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION V – CONTRIBUTIONS**

<b>TABLE V-2 Employer Contribution Rate</b>		
	<b>January 1, 2020</b>	<b>January 1, 2021</b>
<b>Contributions as a Percentage of Payroll<sup>1</sup></b>		
Gross Entry Age Normal Cost Rate	23.73%	23.53%
Employee Contribution Rate	<u>8.69%</u>	<u>8.95%</u>
Employer Entry Age Normal Cost Rate	15.04%	14.58%
Employer Normal Cost Rate	15.04%	14.58%
Administrative Expense	0.86%	0.86%
Amortization Payment	<u>33.92%</u>	<u>35.07%</u>
Employer Contribution Rate	49.82%	50.51%
Actuarially Determined Contribution (Employer)	\$ 236,568,369	\$ 245,694,645

<sup>1</sup> Normal cost and employee contribution rates do not include administrative expenses.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**SECTION V – CONTRIBUTIONS**

<b>TABLE V-3 Employer Contribution Rate</b>				
	<b>General Tier 1 January 1, 2021</b>	<b>General Tier 2 January 1, 2021</b>	<b>Safety Tier 1 January 1, 2021</b>	<b>Safety Tier 2 January 1, 2021</b>
<b>Contributions as a Percentage of Payroll<sup>1</sup></b>				
Gross Entry Age Normal Cost Rate	23.40%	19.50%	37.28%	30.36%
Employee Contribution Rate	<u>6.97%</u>	<u>9.75%</u>	<u>10.39%</u>	<u>15.18%</u>
Employer Entry Age Normal Cost Rate	16.43%	9.75%	26.89%	15.18%
Employer Normal Cost Rate	16.43%	9.75%	26.89%	15.18%
Administrative Expense	0.86%	0.86%	0.86%	0.86%
Amortization Payment	<u>29.98%</u>	<u>29.98%</u>	<u>63.11%</u>	<u>63.11%</u>
Employer Contribution Rate	47.27%	40.59%	90.86%	79.15%
Actuarially Determined Contribution (Employer)	\$ 96,378,981	\$ 84,059,599	\$ 44,588,127	\$ 20,667,937

<sup>1</sup> Normal cost and employee contribution rates do not include administrative expenses.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION V – CONTRIBUTIONS**

**TABLE V-4  
Development of General Amortization Payment  
For Fiscal Year 2021**

<b>Type of Base</b>	<b>Date Established</b>	<b>Initial Amount</b>	<b>Initial Amortization Years</b>	<b>1/1/2021 Outstanding Balance</b>	<b>Remaining Amortization Years</b>	<b>Amortization Amount</b>
<b>Charges/(Credits)</b>						
1. 2008 Extraordinary Actuarial Loss	1/1/2009	\$ 298,074,372	30	\$ 327,926,630	18	\$ 25,549,974
2. Remaining 1/1/2014 UAL	1/1/2014	584,940,566	19	520,146,690	12	54,814,169
3. 1/1/2015 Gain	1/1/2015	(11,658,862)	15	(9,393,496)	9	(1,251,306)
4. 1/1/2016 Loss	1/1/2016	34,636,894	15	29,470,672	10	3,597,030
5. 1/1/2016 Assumption Changes	1/1/2016	75,853,467	15	64,539,638	10	7,877,358
6. 1/1/2017 Loss	1/1/2017	94,894,097	15	84,504,150	11	9,544,706
7. 1/1/2018 Loss	1/1/2018	23,943,774	15	22,134,689	12	2,332,601
8. 1/1/2018 Assumption Changes	1/1/2018	59,045,648	15	54,584,423	12	5,752,223
9. 1/1/2019 Loss	1/1/2019	95,504,066	15	91,079,059	13	9,016,593
10. 1/1/2019 Assumption Changes	1/1/2019	17,462,987	15	16,653,872	13	1,648,691
11. 1/1/2020 Loss	1/1/2020	8,429,406	15	8,244,918	14	771,246
12. 1/1/2020 Assumption Changes	1/1/2020	96,315,094	15	99,833,783	14	6,419,264 <sup>1</sup>
12. 1/1/2021 Gain	1/1/2021	(242,042)	15	<u>(242,042)</u>	15	<u>(21,501)</u>
				\$ 1,309,482,987	14 <sup>2</sup>	\$ 126,051,048

<sup>1</sup> This payment reflects the second year of a three-year phase-in of the recognition of the increase in UAL due to the new economic assumptions.

<sup>2</sup> The single equivalent amortization period - i.e. the length of time required to amortize the overall UAL as a level percentage of payroll based on the total current amortization payment is approximately 14 years.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION V – CONTRIBUTIONS**

**TABLE V-5  
Development of Safety Amortization Payment  
For Fiscal Year 2021**

<b>Type of Base</b>	<b>Date Established</b>	<b>Initial Amount</b>	<b>Initial Amortization Years</b>	<b>1/1/2021 Outstanding Balance</b>	<b>Remaining Amortization Years</b>	<b>Amortization Amount</b>
<b>Charges/(Credits)</b>						
1. 2008 Extraordinary Actuarial Loss	1/1/2009	\$ 126,189,527	30	\$ 132,058,086	18	\$ 10,289,133
2. Remaining 1/1/2014 UAL	1/1/2014	235,559,190	19	209,466,294	12	22,074,005
3. 1/1/2015 Gain	1/1/2015	(4,780,021)	15	(3,851,243)	9	(513,023)
4. 1/1/2016 Loss	1/1/2016	17,788,933	15	15,135,648	10	1,847,375
5. 1/1/2016 Assumption Changes	1/1/2016	16,001,780	15	13,615,055	10	1,661,780
6. 1/1/2017 Loss	1/1/2017	14,516,825	15	12,927,380	11	1,460,142
7. 1/1/2018 Loss	1/1/2018	13,716,051	15	12,679,728	12	1,336,217
8. 1/1/2018 Assumption Changes	1/1/2018	22,809,013	15	21,085,666	12	2,222,052
9. 1/1/2019 Loss	1/1/2019	26,232,387	15	25,016,958	13	2,476,615
10. 1/1/2019 Assumption Changes	1/1/2019	(1,446,461)	15	(1,379,442)	13	(136,561)
11. 1/1/2020 Loss	1/1/2020	30,198,055	15	29,537,133	14	2,762,961
12. 1/1/2020 Assumption Changes	1/1/2020	38,696,213	15	40,109,905	14	2,579,047 <sup>1</sup>
12. 1/1/2021 Loss	1/1/2021	1,500,664	15	<u>1,500,664</u>	15	<u>133,304</u>
				\$ 507,901,832	14 <sup>2</sup>	\$ 48,193,047

<sup>1</sup> This payment reflects the second year of a three-year phase-in of the recognition of the increase in UAL due to the new economic assumptions.

<sup>2</sup> The single equivalent amortization period - i.e. the length of time required to amortize the overall UAL as a level percentage of payroll based on the total current amortization payment is approximately 14 years.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**SECTION VI – ADDITIONAL ANNUAL FINANCIAL REPORT SCHEDULES**

This section of the report provides a schedule for the Actuarial Section of the annual financial report for SJCERA that is not provided in the GASB 67 and 68 reports.

We have prepared the following schedule:

*Schedule of Funded Liabilities by Type*

The schedule of funded liabilities by type (formerly known as the solvency test) 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.

The Actuarial Liability is determined assuming that the System is ongoing, and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities for 2013 through 2015 were discounted at an assumed interest rate of 7.50%, whereas liabilities for 2016 and 2017 were discounted at the assumed rate of 7.40%, and the liabilities for 2018 and 2019 were discounted at the assumed rate of 7.25%. The liabilities for 2020 and 2021 are discounted at the assumed rate of 7.00%.

<b>Table VI-1 Schedule of Funded Liabilities by Type Aggregate Actuarial Liabilities for</b>							
<b>Valuation Date January 1,</b>	<b>Active Member Contributions</b>	<b>Retirees &amp; Beneficiaries</b>	<b>Active Members<sup>1</sup></b>	<b>Actuarial Value of Assets</b>	<b>Portion of Actuarial Liabilities Covered by Reported Assets</b>		
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>		<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
2021	\$ 426,570,416	\$ 3,328,307,086	\$ 1,452,791,799	\$ 3,487,424,521	100%	92%	0%
2020	396,549,386	3,162,982,551	1,454,100,529	3,226,099,142	100%	89%	0%
2019	368,549,547	2,899,425,320	1,437,296,083	3,044,897,691	100%	92%	0%
2018	344,503,811	2,706,791,152	1,445,680,634	2,913,161,286	100%	95%	0%
2017	318,020,652	2,513,640,349	1,403,432,945	2,733,851,661	100%	96%	0%
2016	297,179,041	2,347,908,211	1,361,302,798	2,604,472,784	100%	98%	0%
2015	276,818,405	2,117,009,658	1,337,806,309	2,471,291,047	100%	100%	6%
2014	258,198,240	1,956,930,619	1,346,730,197	2,285,165,972	100%	100%	5%
2013	209,987,230	1,810,775,897	1,332,531,085	2,125,700,227	100%	100%	8%
2012	202,924,928	1,627,338,404	1,218,058,024	2,130,052,649	100%	100%	25%
2011	193,612,757	1,495,665,075	1,228,410,127	2,120,384,183	100%	100%	35%
2010	187,986,706	1,373,256,766	1,208,368,072	1,949,011,498	100%	100%	32%
2009	176,235,961	1,231,647,623	1,103,041,755	1,821,357,079	100%	100%	37%
2008	166,804,000	1,119,690,000	1,048,027,000	2,029,949,000	100%	100%	71%
2007	159,100,000	1,023,296,000	967,542,000	1,869,717,000	100%	100%	71%
2006	147,953,000	904,208,000	883,657,000	1,727,033,000	100%	100%	76%

<sup>1</sup> Includes terminated vested members.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

The data for this valuation was provided by the San Joaquin County staff as of January 1, 2021.

<b>Summary of Participant Data as of January 1, 2021</b>			
	<b>General</b>	<b>Safety</b>	<b>Total</b>
<b>Tier 1 Active Participants</b>			
Number	2,447	496	2,943
Average Age	51.50	45.02	50.41
Average Benefit Service	17.32	16.44	17.17
Average Vesting Service	17.48	16.64	17.34
Average Pay	\$84,496	\$99,419	\$87,011
<b>Tier 2 Active Participants</b>			
Number	3,071	336	3,407
Average Age	40.86	33.18	40.10
Average Benefit Service	3.34	3.64	3.37
Average Vesting Service	3.38	3.69	3.41
Average Pay	\$67,562	\$77,184	\$68,511
<b>All Active Participants</b>			
Number	5,518	832	6,350
Average Age	45.58	40.24	44.88
Average Benefit Service	9.54	11.27	9.77
Average Vesting Service	9.64	11.41	9.87
Average Pay	\$75,071	\$90,440	\$77,085

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

Summary of Participant Data as of January 1, 2021			
	General	Safety	Total
<b>Service Retired</b>			
Number	4,171	674	4,845
Average Age	71.08	66.29	70.41
Average Annual Base Benefit	\$13,924	\$30,084	\$16,172
Average Annual Total Benefit	\$38,073	\$72,322	\$42,837
<b>Beneficiaries</b>			
Number	664	212	876
Average Age	73.04	70.35	72.39
Average Annual Base Benefit	\$6,005	\$11,297	\$7,286
Average Annual Total Benefit	\$21,133	\$37,659	\$25,132
<b>Duty Disabled</b>			
Number	263	213	476
Average Age	65.38	62.36	64.03
Average Annual Base Benefit	\$12,094	\$28,077	\$19,246
Average Annual Total Benefit	\$27,245	\$56,738	\$40,443
<b>Non-Duty Disabled</b>			
Number	152	12	164
Average Age	65.69	68.25	65.88
Average Annual Base Benefit	\$8,901	\$13,434	\$9,233
Average Annual Total Benefit	\$18,342	\$33,408	\$19,445
<b>Total Receiving Benefits</b>			
Number	5,250	1,111	6,361
Average Age	70.88	66.33	70.09
Average Annual Base Benefit	\$12,686	\$25,935	\$15,000
Average Annual Total Benefit	\$34,816	\$62,299	\$39,617



**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

Summary of Participant Data as of January 1, 2021			
	General	Safety	Total
<b>Deferred Vested</b>			
Number	450	43	493
Average Age	48.84	43.72	48.40
Average Service	9.02	9.56	9.07
<b>Transfers and DROs</b>			
Number	608	122	730
Average Age	46.18	44.30	45.87
Average Service	4.62	4.82	4.65
<b>Funds on Account</b>			
Number	895	47	942
Average Age	45.63	39.77	45.34
Average Service	1.24	1.81	1.27
<b>Total Inactive</b>			
Number	1,953	212	2,165
Average Age	46.54	43.18	46.21
Average Service	4.08	5.11	4.19

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Changes in Plan Membership: General**

	Actives	Transfers/ DROS	Non-Vested Terminations	Vested Terminations	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
<b>January 1, 2020</b>	<b>5,527</b>	<b>406</b>	<b>887</b>	<b>458</b>	<b>155</b>	<b>261</b>	<b>4,056</b>	<b>653</b>	<b>12,403</b>
New Entrants	578	0	0	0	0	0	0	0	578
Rehires	15	(2)	(6)	(6)	0	0	0	0	1
Duty Disabilities	(2)	0	0	(1)	0	3	0	0	0
Non-Duty Disabilities	0	0	0	(1)	1	0	0	0	0
Retirements	(182)	(14)	(3)	(24)	0	0	223	0	0
Vested Terminations	(33)	0	0	35	0	0	0	0	2
Retirements from Safety with General Service	0	0	0	0	0	1	9	1	11
Died, With Beneficiaries' Benefit Payable	(3)	0	0	0	0	0	(39)	42	0
Died, Without Beneficiary, and Other Terminations	(69)	(1)	63	0	(3)	(5)	(76)	0	(91)
Transfers	(195)	225	(6)	0	0	0	0	0	24
Redeposits – AB 2766	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(117)	(6)	(40)	(9)	0	0	0	0	(172)
Beneficiary Deaths	0	0	0	0	0	0	0	(36)	(36)
Domestic Relations Orders	0	1	0	0	0	0	0	3	4
Data Corrections	(1)	(1)	0	(2)	(1)	3	(2)	1	(3)
<b>January 1, 2021</b>	<b>5,518</b>	<b>608</b>	<b>895</b>	<b>450</b>	<b>152</b>	<b>263</b>	<b>4,171</b>	<b>664</b>	<b>12,721</b>

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Changes in Plan Membership: Safety**

	Actives	Transfers/ DROS	Non-Vested Terminations	Vested Terminations	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
<b>January 1, 2020</b>	<b>843</b>	<b>108</b>	<b>47</b>	<b>40</b>	<b>15</b>	<b>214</b>	<b>647</b>	<b>207</b>	<b>2,121</b>
New Entrants	40	0	0	0	0	0	0	0	40
Rehires	0	0	0	0	0	0	0	0	0
Duty Disabilities	(2)	0	0	0	0	2	0	0	0
Non-Duty Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(31)	(3)	0	(3)	0	0	36	1	0
Vested Terminations	(5)	0	0	5	0	0	0	0	0
Retirements from Safety with General Service	0	0	0	0	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	(1)	0	0	0	0	(1)	(5)	8	1
Died, Without Beneficiary, and Other Terminations	(5)	0	4	0	(2)	(3)	(3)	(1)	(10)
Transfers	2	17	0	0	0	0	0	0	19
Redeposits – AB 2766	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(8)	(1)	(3)	0	0	0	0	0	(12)
Beneficiary Deaths	0	0	0	0	0	0	0	(4)	(4)
Domestic Relations Orders	0	1	0	0	0	0	0	1	2
Data Corrections	(1)	0	(1)	1	(1)	1	(1)	0	(2)
<b>January 1, 2021</b>	<b>832</b>	<b>122</b>	<b>47</b>	<b>43</b>	<b>12</b>	<b>213</b>	<b>674</b>	<b>212</b>	<b>2,155</b>

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Changes in Plan Membership: All Groups**

	Actives	Transfers/ DROS	Non-Vested Terminations	Vested Terminations	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
<b>January 1, 2020</b>	<b>6,370</b>	<b>514</b>	<b>934</b>	<b>498</b>	<b>170</b>	<b>475</b>	<b>4,703</b>	<b>860</b>	<b>14,524</b>
New Entrants	618	0	0	0	0	0	0	0	618
Rehires	15	(2)	(6)	(6)	0	0	0	0	1
Duty Disabilities	(4)	0	0	(1)	0	5	0	0	0
Non-Duty Disabilities	0	0	0	(1)	1	0	0	0	0
Retirements	(213)	(17)	(3)	(27)	0	0	259	1	0
Vested Terminations	(38)	0	0	40	0	0	0	0	2
Retirements from Safety with General Service	0	0	0	0	0	1	9	1	11
Died, With Beneficiaries' Benefit Payable	(4)	0	0	0	0	(1)	(44)	50	1
Died, Without Beneficiary, and Other Terminations	(74)	(1)	67	0	(5)	(8)	(79)	(1)	(101)
Transfers	(193)	242	(6)	0	0	0	0	0	43
Redeposits – AB 2766	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(125)	(7)	(43)	(9)	0	0	0	0	(184)
Beneficiary Deaths	0	0	0	0	0	0	0	(40)	(40)
Domestic Relations Orders	0	2	0	0	0	0	0	4	6
Data Corrections	(2)	(1)	(1)	(1)	(2)	4	(3)	1	(5)
<b>January 1, 2021</b>	<b>6,350</b>	<b>730</b>	<b>942</b>	<b>493</b>	<b>164</b>	<b>476</b>	<b>4,845</b>	<b>876</b>	<b>14,876</b>

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

Valuation at Year End	Plan Type	Member Count	Annual Payroll	Average Annual Salary	Average Salary Increase
<b>2006</b>	General	5,234	\$288,178,806	\$55,059	18.22%
	Safety	820	\$56,293,820	\$68,651	15.52%
	<b>Total</b>	<b>6,054</b>	<b>\$344,472,626</b>	<b>\$56,900</b>	<b>17.68%</b>
<b>2007</b>	General	5,353	\$308,773,122	\$57,682	4.76%
	Safety	871	\$62,988,014	\$72,317	5.34%
	<b>Total</b>	<b>6,224</b>	<b>\$371,761,136</b>	<b>\$59,730</b>	<b>4.97%</b>
<b>2008</b>	General	5,180	\$315,202,954	\$60,850	5.49%
	Safety	900	\$67,127,759	\$74,586	3.14%
	<b>Total</b>	<b>6,080</b>	<b>\$382,330,713</b>	<b>\$62,883</b>	<b>5.28%</b>
<b>2009</b>	General	4,990	\$320,526,792	\$64,234	5.56%
	Safety	925	\$70,801,157	\$76,542	2.62%
	<b>Total</b>	<b>5,915</b>	<b>\$391,327,949</b>	<b>\$66,159</b>	<b>5.21%</b>
<b>2010</b>	General	4,643	\$308,183,424	\$66,376	3.33%
	Safety	830	\$64,817,396	\$78,093	2.03%
	<b>Total</b>	<b>5,473</b>	<b>\$373,000,820</b>	<b>\$68,153</b>	<b>3.01%</b>
<b>2011</b>	General	4,441	\$298,308,687	\$67,172	1.20%
	Safety	813	\$64,041,814	\$78,772	0.87%
	<b>Total</b>	<b>5,254</b>	<b>\$362,350,501</b>	<b>\$68,967</b>	<b>1.19%</b>
<b>2012</b>	General	4,492	\$301,505,122	\$67,120	-0.08%
	Safety	803	\$64,386,900	\$80,183	1.79%
	<b>Total</b>	<b>5,295</b>	<b>\$365,892,023</b>	<b>\$69,101</b>	<b>0.19%</b>
<b>2013</b>	General	4,748	\$316,885,044	\$66,741	-0.57%
	Safety	805	\$65,640,055	\$81,540	1.69%
	<b>Total</b>	<b>5,553</b>	<b>\$382,525,098</b>	<b>\$68,886</b>	<b>-0.31%</b>
<b>2014</b>	General	4,879	\$322,836,680	\$66,169	-0.86%
	Safety	827	\$68,491,483	\$82,819	1.57%
	<b>Total</b>	<b>5,706</b>	<b>\$391,328,162</b>	<b>\$68,582</b>	<b>-0.44%</b>
<b>2015</b>	General	5,131	\$340,731,847	\$66,407	0.36%
	Safety	793	\$66,456,278	\$83,804	1.19%
	<b>Total</b>	<b>5,924</b>	<b>\$407,188,125</b>	<b>\$68,735</b>	<b>0.22%</b>
<b>2016</b>	General	5,291	\$373,202,798	\$70,535	6.22%
	Safety	811	\$67,593,920	\$83,346	-0.55%
	<b>Total</b>	<b>6,102</b>	<b>\$440,796,718</b>	<b>\$72,238</b>	<b>5.10%</b>
<b>2017</b>	General	5,370	\$381,151,442	\$70,978	0.63%
	Safety	848	\$70,776,611	\$83,463	0.14%
	<b>Total</b>	<b>6,218</b>	<b>\$451,928,053</b>	<b>\$72,681</b>	<b>0.61%</b>
<b>2018</b>	General	5,485	\$401,820,940	\$73,258	3.86%
	Safety	860	\$72,680,957	\$84,513	1.40%
	<b>Total</b>	<b>6,345</b>	<b>\$474,501,897</b>	<b>\$74,784</b>	<b>3.52%</b>
<b>2019</b>	General	5,526	\$404,710,743	\$73,238	-0.03%
	Safety	843	\$73,747,564	\$87,482	3.51%
	<b>Total</b>	<b>6,369</b>	<b>\$478,458,307</b>	<b>\$75,123</b>	<b>0.45%</b>
<b>2020</b>	General	5,518	\$414,244,475	\$75,071	2.50%
	Safety	832	\$75,245,783	\$90,440	3.38%
	<b>Total</b>	<b>6,350</b>	<b>\$489,490,258</b>	<b>\$77,085</b>	<b>2.61%</b>

Payroll figures represent active member's annualized pay rates on  
December 31.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Schedule of Retirees and Beneficiaries Valuation Data**

Valuation at Year End	Plan Type	Member Retirements	Beneficiary Continuance	Members and Beneficiaries Removed	Total Retirees on Payroll	Annual Retirement Payroll	Average Annual Allowance	Average Allowance Increase
<b>2006</b>	General	190	41	102	3,107	58,634,478	18,872	3.96%
	Safety	31	8	11	632	25,003,422	39,562	2.14%
	<b>Total</b>	<b>221</b>	<b>49</b>	<b>113</b>	<b>3,739</b>	<b>83,637,900</b>	<b>22,369</b>	<b>3.45%</b>
<b>2007</b>	General	199	31	99	3,238	65,213,731	20,140	6.72%
	Safety	38	6	8	668	27,396,329	41,012	3.67%
	<b>Total</b>	<b>237</b>	<b>37</b>	<b>107</b>	<b>3,906</b>	<b>92,610,060</b>	<b>23,710</b>	<b>5.99%</b>
<b>2008</b>	General	203	30	83	3,388	71,488,335	21,100	4.77%
	Safety	50	10	18	710	30,575,540	43,064	5.00%
	<b>Total</b>	<b>253</b>	<b>40</b>	<b>101</b>	<b>4,098</b>	<b>102,063,875</b>	<b>24,906</b>	<b>5.04%</b>
<b>2009</b>	General	207	31	104	3,522	78,988,070	22,427	6.29%
	Safety	24	7	11	730	32,575,964	44,625	3.62%
	<b>Total</b>	<b>231</b>	<b>38</b>	<b>115</b>	<b>4,252</b>	<b>111,564,034</b>	<b>26,238</b>	<b>5.35%</b>
<b>2010</b>	General	242	35	102	3,697	85,931,078	23,243	3.64%
	Safety	65	5	8	792	36,354,738	45,902	2.86%
	<b>Total</b>	<b>307</b>	<b>40</b>	<b>110</b>	<b>4,489</b>	<b>122,285,816</b>	<b>27,241</b>	<b>3.82%</b>
<b>2011</b>	General	240	42	108	3,871	92,938,361	24,009	3.30%
	Safety	32	4	14	814	38,098,866	46,805	1.97%
	<b>Total</b>	<b>272</b>	<b>46</b>	<b>122</b>	<b>4,685</b>	<b>131,037,227</b>	<b>27,970</b>	<b>2.68%</b>
<b>2012</b>	General	278	27	135	4,041	102,025,575	25,248	5.16%
	Safety	52	12	20	856	42,008,598	49,075	4.85%
	<b>Total</b>	<b>330</b>	<b>39</b>	<b>155</b>	<b>4,897</b>	<b>144,034,172</b>	<b>29,413</b>	<b>5.16%</b>
<b>2013</b>	General	213	52	134	4,172	109,869,721	26,335	4.31%
	Safety	22	11	20	869	43,548,028	50,113	2.11%
	<b>Total</b>	<b>235</b>	<b>63</b>	<b>154</b>	<b>5,041</b>	<b>153,411,632</b>	<b>30,433</b>	<b>3.47%</b>
<b>2014</b>	General	247	51	112	4,358	120,722,240	27,701	5.19%
	Safety	29	14	21	891	45,889,472	51,503	2.77%
	<b>Total</b>	<b>276</b>	<b>65</b>	<b>133</b>	<b>5,249</b>	<b>166,611,711</b>	<b>31,742</b>	<b>4.30%</b>
<b>2015</b>	General	227	45	136	4,494	129,928,957	28,912	4.37%
	Safety	54	15	19	941	50,813,875	54,000	4.85%
	<b>Total</b>	<b>281</b>	<b>60</b>	<b>155</b>	<b>5,435</b>	<b>180,742,832</b>	<b>33,255</b>	<b>4.77%</b>
<b>2016</b>	General	251	40	128	4,657	139,511,334	29,957	3.62%
	Safety	40	12	22	971	54,508,607	56,137	3.96%
	<b>Total</b>	<b>291</b>	<b>52</b>	<b>150</b>	<b>5,628</b>	<b>194,019,941</b>	<b>34,474</b>	<b>3.66%</b>
<b>2017</b>	General	249	49	149	4,806	149,183,295	31,041	3.62%
	Safety	46	12	13	1,016	57,837,517	56,927	1.41%
	<b>Total</b>	<b>295</b>	<b>61</b>	<b>162</b>	<b>5,822</b>	<b>207,020,812</b>	<b>35,558</b>	<b>3.15%</b>
<b>2018</b>	General	290	47	133	5,010	161,602,326	32,256	3.91%
	Safety	39	8	20	1,043	61,364,472	58,835	3.35%
	<b>Total</b>	<b>329</b>	<b>55</b>	<b>153</b>	<b>6,053</b>	<b>222,966,797</b>	<b>36,836</b>	<b>3.59%</b>
<b>2019</b>	General	237	57	179	5,125	171,791,597	33,520	3.92%
	Safety	49	13	22	1,083	65,822,764	60,778	3.30%
	<b>Total</b>	<b>286</b>	<b>70</b>	<b>201</b>	<b>6,208</b>	<b>237,614,311</b>	<b>38,276</b>	<b>3.91%</b>
<b>2020</b>	General	237	47	159	5,250	182,786,202	34,816	3.87%
	Safety	37	10	19	1,111	69,214,609	62,299	2.50%
	<b>Total</b>	<b>274</b>	<b>57</b>	<b>178</b>	<b>6,361</b>	<b>252,000,811</b>	<b>39,617</b>	<b>3.50%</b>

Payroll figures represent year end monthly retirement benefits annualized and exclude Post-Employment Healthcare benefits.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>Fiscal Year</b>	<b>Beginning of Year</b>	<b>Added During Year</b>	<b>Allowances Added (in 000s)<sup>1</sup></b>	<b>Removed During Year</b>	<b>Allowances Removed</b>	<b>End of Year</b>	<b>Annual Retirement Payroll (in 000s)</b>	<b>Average Allowance Percentage Increase</b>	<b>Average Annual Allowance</b>
2010	4,252	353	12,918	116	2,196	4,489	122,286	3.82%	27,241
2011	4,489	318	11,544	122	2,793	4,685	131,037	2.67%	27,969
2012	4,685	361	16,400	149	3,403	4,897	144,034	5.16%	29,413
2013	4,897	297	12,908	153	3,530	5,041	153,412	3.47%	30,433
2014	5,041	340	16,230	132	3,030	5,249	166,612	4.30%	31,742
2015	5,249	341	17,776	155	3,651	5,435	180,737	4.77%	33,255
2016	5,435	343	17,151	150	3,868	5,628	194,020	3.66%	34,474
2017	5,628	355	17,288	161	4,287	5,822	207,021	3.15%	35,558
2018	5,822	382	19,839	151	3,893	6,053	222,967	3.59%	36,836
2019	6,053	355	20,574	200	5,927	6,208	237,614	3.91%	38,276
2020	6,208	333	19,967	180	5,580	6,361	252,001	3.50%	39,617

<sup>1</sup> Includes COLA amounts not included in previous year's Annual Allowance totals.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Schedule of Average Monthly Benefit Payments**

Retirement Effective Date	<u>Number of Years of Service Credit</u>						
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Over
<b>1/2/11 to 1/1/12</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$470	\$1,205	\$1,464	\$2,615	\$3,302	\$3,968	\$4,670
Average Final Compensation	\$5,518	\$5,903	\$4,928	\$6,463	\$6,110	\$5,541	\$5,570
Count	12	26	56	27	41	16	39
Safety Members							
Average Benefits	\$922	\$1,112	\$2,551	\$3,970	\$7,499	\$7,790	\$10,586
Average Final Compensation	\$9,746	\$4,483	\$5,290	\$7,767	\$10,430	\$9,162	\$10,797
Count	2	6	3	3	4	5	3
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$622	\$890	\$773	\$1,367	\$1,838	\$2,039	\$3,281
Average Final Compensation	\$9,807	\$4,816	\$3,578	\$4,371	\$4,108	\$3,364	\$5,366
Count	5	9	11	10	5	5	5
Safety Members							
Average Benefits	\$825	\$859	\$1,591	\$3,334	\$0	\$0	\$3,829
Average Final Compensation	\$9,779	\$4,960	\$2,795	\$9,010	\$0	\$0	\$5,257
Count	1	1	2	1	0	0	1
<b>1/2/12 to 1/1/13</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$517	\$1,077	\$1,481	\$2,129	\$2,729	\$4,198	\$6,317
Average Final Compensation	\$7,532	\$5,925	\$5,233	\$4,900	\$5,338	\$6,449	\$7,295
Count	19	31	56	36	42	30	44
Safety Members							
Average Benefits	\$429	\$2,194	\$3,026	\$4,186	\$5,302	\$9,183	\$13,206
Average Final Compensation	\$6,793	\$5,812	\$6,636	\$8,124	\$7,306	\$13,360	\$13,606
Count	4	5	7	3	14	11	5
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$331	\$1,189	\$1,017	\$1,525	\$1,274	\$3,105	\$2,783
Average Final Compensation	\$4,482	\$3,558	\$2,664	\$2,604	\$3,639	\$4,794	\$3,940
Count	4	4	8	3	1	2	4
Safety Members							
Average Benefits	\$0	\$1,039	\$2,423	\$3,450	\$3,573	\$3,206	\$4,887
Average Final Compensation	\$0	\$6,972	\$7,561	\$1,358	\$1,776	\$3,836	\$6,169
Count	0	2	2	2	1	3	2



**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Schedule of Average Monthly Benefit Payments**

<b>Retirement Effective Date</b>	<b>Number of Years of Service Credit</b>						
	<b>0-4</b>	<b>5-9</b>	<b>10-14</b>	<b>15-19</b>	<b>20-24</b>	<b>25-29</b>	<b>30 &amp; Over</b>
<b>1/2/13 to 1/1/14</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$433	\$1,410	\$1,589	\$2,556	\$3,149	\$4,241	\$5,837
Average Final Compensation	\$7,695	\$7,279	\$5,787	\$6,125	\$6,132	\$6,467	\$6,718
Count	10	25	40	35	35	26	29
Safety Members							
Average Benefits	\$1,165	\$1,435	\$2,621	\$3,501	\$4,260	\$11,134	\$9,279
Average Final Compensation	\$9,478	\$7,434	\$6,316	\$7,044	\$5,599	\$13,945	\$9,670
Count	3	2	7	4	1	2	2
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$687	\$1,000	\$883	\$1,182	\$2,063	\$1,572	\$2,985
Average Final Compensation	\$3,804	\$4,531	\$3,953	\$3,163	\$3,722	\$1,821	\$3,681
Count	6	9	15	7	5	2	5
Safety Members							
Average Benefits	\$650	\$3,101	\$1,385	\$2,012	\$1,918	\$3,745	\$4,936
Average Final Compensation	\$4,955	\$10,868	\$2,506	\$3,966	\$2,525	\$6,184	\$5,381
Count	3	1	2	1	2	1	1
<b>1/2/14 to 1/1/15</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$618	\$1,120	\$1,601	\$2,635	\$4,409	\$4,672	\$6,283
Average Final Compensation	\$9,300	\$6,612	\$5,529	\$6,454	\$8,122	\$6,944	\$7,635
Count	9	25	49	46	23	45	41
Safety Members							
Average Benefits	\$380	\$1,190	\$3,433	\$4,546	\$3,993	\$7,412	\$11,302
Average Final Compensation	\$8,910	\$6,591	\$7,642	\$8,863	\$6,031	\$9,013	\$11,761
Count	1	1	3	5	4	6	1
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$475	\$654	\$1,087	\$814	\$2,160	\$1,680	\$2,941
Average Final Compensation	\$5,928	\$4,152	\$2,879	\$2,457	\$4,998	\$3,887	\$8,068
Count	11	6	11	6	5	3	5
Safety Members							
Average Benefits	\$2,030	\$2,464	\$2,890	\$3,326	\$2,002	\$3,569	\$3,499
Average Final Compensation	\$9,251	\$8,581	\$5,515	\$4,817	\$4,850	\$5,955	\$2,018
Count	2	3	4	1	1	1	2

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Schedule of Average Monthly Benefit Payments**

Retirement Effective Date	<u>Number of Years of Service Credit</u>						
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Over
<b>1/2/15 to 1/1/16</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$330	\$988	\$1,661	\$2,449	\$3,277	\$4,342	\$5,770
Average Final Compensation	\$5,778	\$5,953	\$5,826	\$5,723	\$5,918	\$6,501	\$6,781
Count	12	27	36	43	26	29	37
Safety Members							
Average Benefits	\$585	\$1,352	\$2,452	\$3,959	\$5,597	\$8,061	\$10,770
Average Final Compensation	\$7,403	\$5,334	\$6,269	\$6,943	\$8,120	\$9,621	\$11,481
Count	2	2	4	3	10	21	6
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$376	\$987	\$999	\$1,612	\$3,184	\$2,709	\$5,276
Average Final Compensation	\$3,328	\$5,939	\$3,359	\$4,532	\$8,017	\$5,312	\$5,850
Count	4	10	9	4	4	3	5
Safety Members							
Average Benefits	\$530	\$2,019	\$2,184	\$1,970	\$2,902	\$4,784	\$5,026
Average Final Compensation	\$6,052	\$11,395	\$9,909	\$3,887	\$4,783	\$6,788	\$5,405
Count	2	1	2	1	2	4	3
<b>1/2/16 to 1/1/17</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$310	\$1,100	\$1,823	\$2,487	\$3,779	\$3,911	\$5,931
Average Final Compensation	\$6,616	\$5,885	\$6,368	\$5,950	\$6,805	\$5,756	\$7,132
Count	21	24	54	48	24	31	42
Safety Members							
Average Benefits	\$3,817	\$1,759	\$2,546	\$6,290	\$5,510	\$9,513	\$12,671
Average Final Compensation	\$7,634	\$5,985	\$6,353	\$11,452	\$8,566	\$11,959	\$13,175
Count	1	6	6	3	7	12	4
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$313	\$858	\$1,065	\$1,596	\$3,214	\$1,720	\$2,769
Average Final Compensation	\$5,726	\$4,674	\$4,527	\$4,648	\$6,051	\$3,809	\$3,313
Count	5	7	11	6	2	5	1
Safety Members							
Average Benefits	\$495	\$2,235	\$1,253	\$1,661	\$4,086	\$5,943	\$4,712
Average Final Compensation	\$7,339	\$9,642	\$3,842	\$2,755	\$5,646	\$8,003	\$4,803
Count	2	4	1	1	1	1	2

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Schedule of Average Monthly Benefit Payments**

Retirement Effective Date	<u>Number of Years of Service Credit</u>						
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Over
<b>1/2/17 to 1/1/18</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$377	\$1,188	\$2,070	\$2,390	\$3,665	\$4,847	\$6,187
Average Final Compensation	\$9,793	\$6,524	\$6,533	\$5,839	\$6,699	\$7,055	\$7,391
Count	23	35	42	48	20	34	33
Safety Members							
Average Benefits	\$787	\$1,223	\$2,212	\$3,441	\$5,973	\$7,370	\$9,169
Average Final Compensation	\$9,858	\$5,688	\$5,842	\$6,681	\$9,020	\$9,264	\$9,050
Count	5	4	6	9	6	8	1
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$701	\$992	\$1,442	\$1,078	\$1,941	\$1,746	\$4,828
Average Final Compensation	\$5,325	\$4,183	\$4,550	\$3,587	\$5,038	\$2,502	\$5,368
Count	11	10	8	7	3	4	4
Safety Members							
Average Benefits	\$667	\$2,413	\$1,292	\$0	\$0	\$3,363	\$5,834
Average Final Compensation	\$5,605	\$6,310	\$3,454	\$0	\$0	\$4,597	\$3,354
Count	2	3	2	0	0	1	3
<b>1/2/18 to 1/1/19</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$596	\$1,166	\$1,759	\$2,671	\$3,522	\$5,202	\$6,036
Average Final Compensation	\$9,601	\$6,704	\$5,920	\$6,603	\$6,555	\$7,633	\$6,975
Count	21	45	47	55	25	33	39
Safety Members							
Average Benefits	\$2,721	\$2,622	\$2,166	\$3,313	\$3,997	\$7,453	\$10,935
Average Final Compensation	\$5,485	\$8,987	\$6,168	\$6,135	\$6,442	\$9,615	\$11,725
Count	1	3	5	5	8	7	4
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$224	\$659	\$1,201	\$1,204	\$2,150	\$2,590	\$2,759
Average Final Compensation	\$4,220	\$3,482	\$5,324	\$4,292	\$3,513	\$3,538	\$4,382
Count	3	5	10	10	1	5	9
Safety Members							
Average Benefits	\$0	\$1,724	\$3,203	\$0	\$1,201	\$0	\$6,213
Average Final Compensation	\$0	\$6,376	\$4,065	\$0	\$3,140	\$0	\$4,768
Count	0	3	1	0	1	0	3

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Schedule of Average Monthly Benefit Payments**

Retirement Effective Date	<u>Number of Years of Service Credit</u>						
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Over
<b>1/2/19 to 1/1/20</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$345	\$1,131	\$1,780	\$3,030	\$3,669	\$4,796	\$7,232
Average Final Compensation	\$8,121	\$7,276	\$6,189	\$6,988	\$7,070	\$7,062	\$8,554
Count	20	35	40	36	29	30	37
Safety Members							
Average Benefits	\$596	\$2,060	\$3,057	\$3,965	\$4,173	\$9,630	\$17,094
Average Final Compensation	\$9,587	\$6,917	\$6,658	\$7,484	\$7,087	\$11,287	\$17,300
Count	6	5	5	6	11	10	5
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$235	\$927	\$994	\$1,599	\$2,453	\$2,930	\$4,532
Average Final Compensation	\$6,898	\$5,691	\$3,777	\$5,652	\$4,288	\$4,213	\$5,778
Count	6	8	12	7	8	6	10
Safety Members							
Average Benefits	\$712	\$1,280	\$1,831	\$0	\$3,258	\$4,435	\$6,246
Average Final Compensation	\$7,533	\$7,809	\$5,374	\$0	\$4,504	\$4,987	\$6,460
Count	2	2	3	0	3	2	1
<b>1/2/20 to 1/1/21</b>							
<b>Retirees</b>							
General Members							
Average Benefits	\$344	\$1,373	\$1,926	\$3,086	\$3,108	\$4,527	\$6,734
Average Final Compensation	\$7,961	\$9,038	\$6,637	\$6,948	\$5,859	\$6,790	\$8,250
Count	21	32	36	35	33	26	50
Safety Members							
Average Benefits	\$430	\$1,750	\$2,749	\$3,265	\$4,763	\$7,209	\$13,386
Average Final Compensation	\$9,072	\$6,259	\$6,672	\$6,689	\$7,515	\$9,083	\$13,811
Count	3	2	4	4	12	11	3
<b>Survivors/DROs</b>							
General Members							
Average Benefits	\$505	\$735	\$990	\$1,096	\$1,547	\$1,904	\$3,690
Average Final Compensation	\$5,989	\$6,865	\$3,653	\$3,254	\$3,428	\$3,781	\$4,974
Count	4	4	8	5	5	6	8
Safety Members							
Average Benefits	\$1,246	\$0	\$1,622	\$4,494	\$0	\$5,142	\$6,753
Average Final Compensation	\$6,483	\$0	\$2,296	\$9,747	\$0	\$5,684	\$7,710
Count	2	0	2	2	0	1	2

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>DISTRIBUTION OF GENERAL ACTIVE MEMBERS BY AGE AND SERVICE AS OF JANUARY 1, 2021</b>											
<b>COUNTS BY AGE/SERVICE</b>											
<b>Age</b>	<b>Service</b>										<b>Total</b>
	<b>Under 1</b>	<b>1 to 4</b>	<b>5 to 9</b>	<b>10 to 14</b>	<b>15 to 19</b>	<b>20 to 24</b>	<b>25 to 29</b>	<b>30 to 34</b>	<b>35 to 39</b>	<b>40 &amp; up</b>	
<b>Under 25</b>	26	25	0	0	0	0	0	0	0	0	<b>51</b>
<b>25 to 29</b>	76	264	16	0	0	0	0	0	0	0	<b>356</b>
<b>30 to 34</b>	67	398	183	4	0	0	0	0	0	0	<b>652</b>
<b>35 to 39</b>	40	323	231	91	32	0	0	0	0	0	<b>717</b>
<b>40 to 44</b>	32	260	245	120	136	31	0	0	0	0	<b>824</b>
<b>45 to 49</b>	27	215	180	132	158	110	13	1	0	0	<b>836</b>
<b>50 to 54</b>	20	146	141	98	142	105	46	26	1	0	<b>725</b>
<b>55 to 59</b>	14	130	117	75	120	95	68	63	13	0	<b>695</b>
<b>60 to 64</b>	7	70	87	52	76	83	48	34	11	2	<b>470</b>
<b>65 to 69</b>	3	17	34	18	16	27	11	10	7	3	<b>146</b>
<b>70 &amp; up</b>	0	4	12	11	5	8	2	1	1	2	<b>46</b>
<b>Total</b>	<b>312</b>	<b>1,852</b>	<b>1,246</b>	<b>601</b>	<b>685</b>	<b>459</b>	<b>188</b>	<b>135</b>	<b>33</b>	<b>7</b>	<b>5,518</b>

Average Age = 45.58

Average Service = 9.54

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>DISTRIBUTION OF SAFETY ACTIVE MEMBERS BY AGE AND SERVICE AS OF JANUARY 1, 2021</b>											
<b>COUNTS BY AGE/SERVICE</b>											
<b>Age</b>	<b>Service</b>										<b>Total</b>
	<b>Under 1</b>	<b>1 to 4</b>	<b>5 to 9</b>	<b>10 to 14</b>	<b>15 to 19</b>	<b>20 to 24</b>	<b>25 to 29</b>	<b>30 to 34</b>	<b>35 to 39</b>	<b>40 &amp; up</b>	
<b>Under 25</b>	0	24	0	0	0	0	0	0	0	0	<b>24</b>
<b>25 to 29</b>	1	78	14	1	0	0	0	0	0	0	<b>94</b>
<b>30 to 34</b>	3	65	54	8	0	0	0	0	0	0	<b>130</b>
<b>35 to 39</b>	1	33	40	73	23	2	0	0	0	0	<b>172</b>
<b>40 to 44</b>	1	15	11	31	51	18	0	0	0	0	<b>127</b>
<b>45 to 49</b>	0	7	9	22	45	50	7	0	0	0	<b>140</b>
<b>50 to 54</b>	1	7	2	9	23	32	8	4	0	0	<b>86</b>
<b>55 to 59</b>	0	3	6	6	5	8	6	5	0	0	<b>39</b>
<b>60 to 64</b>	0	0	4	2	3	3	0	0	0	0	<b>12</b>
<b>65 to 69</b>	0	0	1	1	2	1	0	0	0	0	<b>5</b>
<b>70 &amp; up</b>	0	0	0	1	0	2	0	0	0	0	<b>3</b>
<b>Total</b>	<b>7</b>	<b>232</b>	<b>141</b>	<b>154</b>	<b>152</b>	<b>116</b>	<b>21</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>832</b>

Average Age = 40.24

Average Service = 11.27

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>PAYROLL DISTRIBUTION OF GENERAL ACTIVE PARTICIPANTS BY AGE AND SERVICE AS OF JANUARY 1, 2021</b>											
<b>COUNTS BY AGE/SERVICE</b>											
<b>Age</b>	<b>Service</b>										<b>Total</b>
	<b>Under 1</b>	<b>1 to 4</b>	<b>5 to 9</b>	<b>10 to 14</b>	<b>15 to 19</b>	<b>20 to 24</b>	<b>25 to 29</b>	<b>30 to 34</b>	<b>35 to 39</b>	<b>40 &amp; up</b>	
<b>Under 25</b>	57,601	46,524	0	0	0	0	0	0	0	0	<b>52,171</b>
<b>25 to 29</b>	61,148	62,237	55,381	0	0	0	0	0	0	0	<b>61,697</b>
<b>30 to 34</b>	63,027	66,193	74,209	74,968	0	0	0	0	0	0	<b>68,171</b>
<b>35 to 39</b>	68,686	68,488	73,970	73,214	69,641	0	0	0	0	0	<b>70,916</b>
<b>40 to 44</b>	70,806	70,110	75,328	80,605	82,400	71,392	0	0	0	0	<b>75,294</b>
<b>45 to 49</b>	60,193	69,154	73,453	93,435	86,795	79,568	87,453	71,291	0	0	<b>78,616</b>
<b>50 to 54</b>	74,173	71,673	71,589	90,554	87,950	84,088	79,983	80,545	44,581	0	<b>80,072</b>
<b>55 to 59</b>	72,168	76,771	80,004	81,098	77,984	76,201	86,514	86,983	86,724	0	<b>79,886</b>
<b>60 to 64</b>	68,556	74,528	76,021	76,516	76,926	74,441	83,556	92,181	78,026	56,494	<b>77,512</b>
<b>65 to 69</b>	85,963	87,022	73,804	108,729	84,995	71,235	75,360	90,211	92,198	100,660	<b>83,325</b>
<b>70 &amp; up</b>	0	75,782	105,477	115,951	69,673	73,419	58,079	61,722	163,901	134,794	<b>95,465</b>
<b>Total</b>	<b>64,864</b>	<b>68,359</b>	<b>74,698</b>	<b>85,086</b>	<b>82,555</b>	<b>77,828</b>	<b>83,271</b>	<b>86,988</b>	<b>86,047</b>	<b>97,794</b>	<b>75,071</b>

Average Salary = \$75,071

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX A – MEMBERSHIP INFORMATION**

<b>PAYROLL DISTRIBUTION OF SAFETY ACTIVE PARTICIPANTS BY AGE AND SERVICE AS OF JANUARY 1, 2021</b>											
<b>COUNTS BY AGE/SERVICE</b>											
<b>Age</b>	<b>Service</b>										<b>Total</b>
	<b>Under 1</b>	<b>1 to 4</b>	<b>5 to 9</b>	<b>10 to 14</b>	<b>15 to 19</b>	<b>20 to 24</b>	<b>25 to 29</b>	<b>30 to 34</b>	<b>35 to 39</b>	<b>40 &amp; up</b>	
<b>Under 25</b>	0	64,484	0	0	0	0	0	0	0	0	<b>64,484</b>
<b>25 to 29</b>	50,494	70,994	84,178	118,088	0	0	0	0	0	0	<b>73,240</b>
<b>30 to 34</b>	53,060	73,015	86,603	106,322	0	0	0	0	0	0	<b>80,248</b>
<b>35 to 39</b>	57,886	77,044	86,991	99,443	100,900	78,944	0	0	0	0	<b>91,965</b>
<b>40 to 44</b>	40,893	82,999	88,364	102,885	92,733	120,481	0	0	0	0	<b>97,207</b>
<b>45 to 49</b>	0	109,036	86,559	93,439	104,329	105,127	103,706	0	0	0	<b>101,965</b>
<b>50 to 54</b>	85,663	95,192	83,087	80,710	91,554	101,190	94,342	104,310	0	0	<b>94,888</b>
<b>55 to 59</b>	0	109,672	116,946	95,692	82,139	90,449	106,603	117,908	0	0	<b>101,751</b>
<b>60 to 64</b>	0	0	110,578	72,976	87,022	75,592	0	0	0	0	<b>89,676</b>
<b>65 to 69</b>	0	0	111,362	115,773	76,636	72,139	0	0	0	0	<b>90,509</b>
<b>70 &amp; up</b>	0	0	0	115,773	0	84,918	0	0	0	0	<b>95,203</b>
<b>Total</b>	<b>56,302</b>	<b>74,902</b>	<b>88,704</b>	<b>98,384</b>	<b>96,550</b>	<b>103,563</b>	<b>100,967</b>	<b>111,864</b>	<b>0</b>	<b>0</b>	<b>90,440</b>

Average Salary = \$90,440



**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Service Retired Benefits**

Current Age	General		Safety		Total	
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	0	\$0	0	\$0	0	\$0
25-29	0	\$0	0	\$0	0	\$0
30-34	0	\$0	0	\$0	0	\$0
35-39	0	\$0	0	\$0	0	\$0
40-44	0	\$0	1	\$29,237	1	\$29,237
45-49	0	\$0	12	\$35,791	12	\$35,791
50-54	78	\$17,311	54	\$67,264	132	\$37,746
55-59	247	\$28,130	104	\$72,708	351	\$41,338
60-64	606	\$37,851	136	\$75,451	742	\$44,742
65-69	952	\$43,469	113	\$83,324	1,065	\$47,698
70-74	1,029	\$41,499	129	\$79,336	1,158	\$45,714
75-79	594	\$38,206	75	\$62,558	669	\$40,936
80-84	346	\$33,866	32	\$43,628	378	\$34,692
85-89	188	\$29,008	10	\$33,365	198	\$29,228
90-94	89	\$30,623	7	\$92,074	96	\$35,104
95+	42	\$21,152	1	\$114,816	43	\$23,330
<b>All Ages</b>	<b>4,171</b>	<b>\$38,073</b>	<b>674</b>	<b>\$72,322</b>	<b>4,845</b>	<b>\$42,837</b>

**Non-Duty Disabled Benefits**

Current Age	General		Safety		Total	
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	0	\$0	0	\$0	0	\$0
25-29	0	\$0	0	\$0	0	\$0
30-34	0	\$0	0	\$0	0	\$0
35-39	1	\$18,114	0	\$0	1	\$18,114
40-44	3	\$15,992	0	\$0	3	\$15,992
45-49	8	\$16,796	2	\$15,670	10	\$16,571
50-54	8	\$19,791	0	\$0	8	\$19,791
55-59	20	\$20,365	0	\$0	20	\$20,365
60-64	30	\$19,372	2	\$49,287	32	\$21,242
65-69	25	\$19,088	3	\$24,849	28	\$19,705
70-74	29	\$16,958	1	\$35,139	30	\$17,564
75-79	18	\$16,452	2	\$57,744	20	\$20,581
80-84	5	\$19,096	1	\$22,109	6	\$19,598
85-89	2	\$22,653	1	\$23,693	3	\$22,999
90-94	1	\$9,849	0	\$0	1	\$9,849
95+	2	\$12,514	0	\$0	2	\$12,514
<b>All Ages</b>	<b>152</b>	<b>\$18,342</b>	<b>12</b>	<b>\$33,408</b>	<b>164</b>	<b>\$19,445</b>

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**APPENDIX A – MEMBERSHIP INFORMATION**

**Duty Disabled Benefits**

Current Age	General		Safety		Total	
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	0	\$0	0	\$0	0	\$0
25-29	0	\$0	0	\$0	0	\$0
30-34	0	\$0	0	\$0	0	\$0
35-39	3	\$157	5	\$39,439	8	\$24,708
40-44	5	\$23,824	6	\$39,272	11	\$32,250
45-49	11	\$10,996	17	\$38,051	28	\$27,422
50-54	19	\$19,922	18	\$42,418	37	\$30,866
55-59	24	\$23,953	44	\$54,072	68	\$43,442
60-64	44	\$27,110	33	\$66,560	77	\$44,017
65-69	61	\$29,617	31	\$59,557	92	\$39,705
70-74	58	\$32,456	33	\$66,569	91	\$44,827
75-79	25	\$28,159	16	\$56,480	41	\$39,211
80-84	6	\$28,883	8	\$63,933	14	\$48,912
85-89	6	\$27,225	0	\$0	6	\$27,225
90-94	0	\$0	2	\$104,033	2	\$104,033
95+	1	\$49,042	0	\$0	1	\$49,042
<b>All Ages</b>	<b>263</b>	<b>\$27,245</b>	<b>213</b>	<b>\$56,738</b>	<b>476</b>	<b>\$40,443</b>

**Surviving Beneficiary Benefits (all benefit types)**

Current Age	General		Safety		Total	
	Number	Annual Average Benefit	Number	Annual Average Benefit	Number	Annual Average Benefit
0-24	5	\$21,333	1	\$16,223	6	\$20,481
25-29	4	\$14,563	0	\$0	4	\$14,563
30-34	3	\$17,984	0	\$0	3	\$17,984
35-39	1	\$10,279	0	\$0	1	\$10,279
40-44	1	\$13,246	0	\$0	1	\$13,246
45-49	8	\$13,794	4	\$44,216	12	\$23,935
50-54	18	\$13,529	10	\$34,581	28	\$21,047
55-59	43	\$13,952	25	\$20,658	68	\$16,418
60-64	60	\$17,264	30	\$29,039	90	\$21,189
65-69	88	\$18,762	26	\$41,166	114	\$23,871
70-74	123	\$24,335	35	\$42,473	158	\$28,352
75-79	111	\$23,283	34	\$39,060	145	\$26,983
80-84	77	\$20,046	25	\$53,273	102	\$28,190
85-89	66	\$21,966	13	\$36,741	79	\$24,398
90-94	34	\$21,458	6	\$40,966	40	\$24,385
95+	22	\$38,569	3	\$39,017	25	\$38,622
<b>All Ages</b>	<b>664</b>	<b>\$21,133</b>	<b>212</b>	<b>\$37,659</b>	<b>876</b>	<b>\$25,132</b>

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Assumed Probabilities of Separation from Active Membership**

Age	Non-Duty Death	Ordinary Disability	Service Retirement <sup>1</sup>	Duty Death	Duty Disability
<b>General Members – Male</b>					
20	0.0004	0.000	0.000	0.000	0.001
25	0.0003	0.000	0.000	0.000	0.001
30	0.0004	0.000	0.000	0.000	0.001
35	0.0005	0.000	0.000	0.000	0.001
40	0.0006	0.001	0.000	0.000	0.004
45	0.0008	0.001	0.000	0.000	0.004
50	0.0012	0.001	0.030	0.000	0.003
55	0.0019	0.001	0.065	0.000	0.004
60	0.0029	0.001	0.090	0.000	0.004
65	0.0041	0.001	0.250	0.000	0.005
<b>General Members – Female</b>					
20	0.0001	0.001	0.000	0.000	0.000
25	0.0001	0.001	0.000	0.000	0.000
30	0.0002	0.001	0.000	0.000	0.000
35	0.0003	0.001	0.000	0.000	0.000
40	0.0004	0.002	0.000	0.000	0.001
45	0.0005	0.002	0.000	0.000	0.001
50	0.0008	0.003	0.035	0.000	0.001
55	0.0012	0.004	0.035	0.000	0.001
60	0.0019	0.005	0.125	0.000	0.002
65	0.0027	0.005	0.250	0.000	0.002

<sup>1</sup> Lower rates assumed for members with less than 10 years of service, and higher rates assumed for members with at least 30 years of service.

The probabilities for each cause of separation represent the likelihood that a given member will separate at a particular age for the indicated reason. As an example, if the probability of separation of a male general member at age 20 is 0.036, that indicates that 3.6% of active general members are expected to separate from service during the year. Rates of Duty and Non-Duty Death are for active members who reach the given age during valuation year.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Assumed Probabilities of Separation from Active Membership**

<b>Age</b>	<b>Non-Duty Death</b>	<b>Ordinary Disability</b>	<b>Service Retirement<sup>1</sup></b>	<b>Duty Death</b>	<b>Duty Disability</b>
<b>Safety Members – Male</b>					
20	0.0004	0.000	0.050	0.0004	0.000
25	0.0004	0.000	0.050	0.0004	0.001
30	0.0005	0.000	0.050	0.0005	0.001
35	0.0006	0.000	0.050	0.0006	0.002
40	0.0007	0.000	0.050	0.0007	0.004
45	0.0008	0.000	0.050	0.0008	0.008
50	0.0011	0.001	0.150	0.0011	0.014
55	0.0017	0.001	0.200	0.0017	0.014
<b>Safety Members – Female</b>					
20	0.0002	0.000	0.050	0.0002	0.000
25	0.0002	0.000	0.050	0.0002	0.001
30	0.0004	0.000	0.050	0.0004	0.001
35	0.0005	0.000	0.050	0.0005	0.002
40	0.0006	0.000	0.050	0.0006	0.004
45	0.0007	0.000	0.050	0.0007	0.009
50	0.0009	0.001	0.150	0.0009	0.014
55	0.0014	0.001	0.200	0.0014	0.014

<sup>1</sup> Lower rates assumed for members with less than 20 years of service.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Salary Increase, Termination and Withdrawal Assumptions**

<b>Years of Service</b>	<b>Salary Increase: General</b>	<b>Salary Increase: Safety</b>	<b>Withdrawal: General</b>	<b>Withdrawal: Safety</b>	<b>Termination: General<sup>1</sup></b>	<b>Termination: Safety<sup>2</sup></b>
0	0.1124	0.1330	0.105	0.054	0.070	0.036
1	0.1021	0.1330	0.066	0.042	0.044	0.028
2	0.0712	0.0815	0.060	0.030	0.040	0.020
3	0.0712	0.0815	0.047	0.030	0.031	0.020
4	0.0506	0.0815	0.041	0.027	0.027	0.018
5	0.0506	0.0532	0.019	0.010	0.044	0.023
6	0.0506	0.0429	0.018	0.009	0.042	0.021
7	0.0506	0.0429	0.014	0.005	0.032	0.011
8	0.0429	0.0429	0.014	0.005	0.032	0.011
9	0.0429	0.0429	0.011	0.005	0.026	0.011
10	0.0403	0.0429	0.011	0.002	0.026	0.013
11	0.0403	0.0429	0.008	0.002	0.019	0.013
12	0.0403	0.0429	0.008	0.002	0.019	0.013
13	0.0403	0.0429	0.008	0.002	0.018	0.013
14	0.0403	0.0429	0.008	0.002	0.018	0.013
15	0.0352	0.0429	0.003	0.001	0.023	0.006
16	0.0352	0.0429	0.003	0.001	0.023	0.006
17	0.0352	0.0429	0.003	0.001	0.023	0.006
18	0.0352	0.0429	0.003	0.001	0.023	0.006
19	0.0352	0.0429	0.003	0.001	0.023	0.006
20	0.0352	0.0429	0.001	0.000	0.009	0.000
21	0.0352	0.0429	0.001	0.000	0.009	0.000
22	0.0352	0.0429	0.001	0.000	0.009	0.000
23	0.0352	0.0429	0.001	0.000	0.009	0.000
24	0.0352	0.0429	0.001	0.000	0.009	0.000
25	0.0352	0.0429	0.001	0.000	0.009	0.000
26	0.0352	0.0429	0.001	0.000	0.009	0.000
27	0.0352	0.0429	0.001	0.000	0.009	0.000
28	0.0352	0.0429	0.001	0.000	0.009	0.000
29	0.0352	0.0429	0.001	0.000	0.009	0.000
30+	0.0352	0.0429	0.000	0.000	0.000	0.000

<sup>1</sup> 75% of vested terminated General Members with less than five years of service, 25% of those with five to 14 years of service, and 30% of those with 15 or more years of service are assumed to be reciprocal.

<sup>2</sup> 67% of vested terminated Safety Members with less than five years of service, and 50% of those with five or more years of service are assumed to be reciprocal.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX B – STATEMENT OF CURRENT  
ACTUARIAL ASSUMPTIONS AND METHODS**

The assumptions and methods used in the actuarial valuation as of January 1, 2021 are:

**Actuarial Methods**

**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 from outside of SJCERA, entry age (for the actuarial cost calculation only) is based on 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).

The UAL (or Surplus Funding) is amortized as a percentage of the projected salaries of present and future members of SJCERA. Effective with the January 1, 2015 valuation, the UAL as of January 1, 2014 is amortized over a closed 19-year period (12 years remaining as of January 1, 2021), except for the additional UAL attributable to the extraordinary loss from 2008, which is being amortized over a separate closed period (18 years as of January 1, 2021).

Any subsequent unexpected change in the Unfunded Actuarial Liability after January 1, 2014 is amortized over 15 years. The UAL payment for the 2020 assumption change is being phased in over a three-year period.

**2. Valuation of Assets**

The assets are valued using a five-year smoothed method based on the difference between the expected market value and the actual market value of the assets as of the valuation date. The expected market value is the prior year's market value increased with the net increase in the cash flow of funds, all increased with interest during the past fiscal year at the expected investment return rate assumption.

An asset corridor limit is applied such that the smoothed Market Value of Assets stays within 20% of the Market Value of Assets.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX B – STATEMENT OF CURRENT  
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## Actuarial Assumptions

The recommended assumptions were adopted by the Board at their July 12, 2019 meeting. The demographic assumptions are based on an experience study covering the period from January 1, 2016 through December 31, 2018. The rate of return, CPI, and pay increase assumptions were updated in the 2020 valuation.

### 1. Rate of Return

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

### 2. Administrative Expenses

Administrative expenses are assumed to be \$5,035,179 for the next year, to be split between employees and employers based on their share of the overall contributions. Expenses are expected to grow with the cost-of-living (by 2.75% per 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 to project increases in the PEPR wage cap.

### 4. Post Retirement COLA

Benefits are assumed to increase after retirement at the rate of 2.6% per year.

### 5. Increases in Pay

Assumed pay increases for active Members consist of increases due to base salary adjustments plus service-based increase due to longevity and promotion, as shown below:

	Pay Increases										
	Years of Service										
	0	1	2	3	4	5	6	7	8-9	10-14	15+
<b>Base Increase</b>	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
<b>Longevity &amp; Promotion</b>											
<b>General</b>	8.00%	7.00%	4.00%	4.00%	2.00%	2.00%	2.00%	2.00%	1.25%	1.00%	0.50%
<b>Safety</b>	10.00%	10.00%	5.00%	5.00%	5.00%	2.25%	1.25%	1.25%	1.25%	1.25%	1.25%
<b>Total (Compound)</b>											
<b>General</b>	11.24%	10.21%	7.12%	7.12%	5.06%	5.06%	5.06%	5.06%	4.29%	4.03%	3.52%
<b>Safety</b>	13.30%	13.30%	8.15%	8.15%	8.15%	5.32%	4.29%	4.29%	4.29%	4.29%	4.29%

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**6. Family Composition**

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

Percentage Married	
Gender	Percentage
Males	75%
Females	55%

**7. Rates of Termination**

Sample rates of termination are shown in the following table. Termination rates do not apply once a member is eligible for retirement.

Rates of Termination		
Years of Service	General	Safety
0	17.50%	9.00%
1	11.00%	7.00%
2	10.00%	5.00%
3	7.75%	5.00%
4	6.75%	4.50%
5	6.25%	3.25%
6	6.00%	3.00%
7	4.50%	1.50%
8	4.50%	1.50%
9	3.75%	1.50%
10	3.75%	1.50%
11-12	2.75%	1.50%
13-14	2.50%	1.50%
15-19	2.50%	0.75%
20-29	1.00%	0.00%
30+	0.00%	0.00%

**8. Withdrawal**

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



**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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60% of all General Member terminations with less than five years of service, 30% of those with five to 14 years of service, and 10% of those with more than 15 years of service, are assumed to take a refund of contributions.

60% of all Safety Member terminations with less than five years of service, 30% of those with five to nine years of service, and 15% of those with more than 10 years of service, are assumed to take a refund of contributions.

**9. Vested Termination and Reciprocal Transfers**

Rates of vested termination apply to active Members who terminate their employment and leave their member contributions on deposit with the Plan.

40% of all General Member terminations with less than five years of service, 70% of those with five to 14 years of service, and 90% of those with 15 or more years of service, are assumed to leave their contributions on deposit.

40% of all Safety Member terminations with less than five years of service, 70% of those with five to nine years of service, and 85% of those with 10 or more years of service, are assumed to leave their contributions on deposit.

Vested terminated General Members are assumed to begin receiving benefits at age 58; vested terminated Safety Members are assumed to begin receiving benefits at age 50, unless they have outgoing reciprocity, in which case they are assumed to begin receiving benefits at age 53.

75% of vested terminated General Members with less than five years of service, 25% of those with five to 14 years of service, and 30% of those with 15 or more years of service, are assumed to be reciprocal.

67% of vested terminated Safety Members with less than five years of service, and 50% of those with five or more years of service, are assumed to be reciprocal.

Final average pay for General Members who terminate with reciprocity is assumed to increase by 3.52% per year until their assumed retirement date. Final average pay for Safety Members who terminate with reciprocity is assumed to increase by 4.29% per year until their assumed retirement date.

**10. Rates of Service-Connected Disability**

Sample service-connected disability rates of active participants are provided in the table on the next page.

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Rates of Svc Disability				
	General	General	Safety	Safety
Age	Male	Female	Male	Female
22	0.094%	0.019%	0.048%	0.048%
27	0.107%	0.024%	0.086%	0.089%
32	0.122%	0.033%	0.161%	0.166%
37	0.139%	0.044%	0.296%	0.305%
42	0.414%	0.058%	0.565%	0.592%
47	0.446%	0.080%	1.023%	1.101%
52	0.361%	0.106%	1.425%	1.425%
57	0.410%	0.135%	1.425%	1.425%
62	0.470%	0.164%	1.425%	1.425%

**11. Rates of Nonservice-Connected Disability**

Sample nonservice-connected disability rates of active participants are provided in the table below.

Rates of Non-Svc Disability				
	General	General	Safety	Safety
Age	Male	Female	Male	Female
22	0.023%	0.057%	0.003%	0.003%
27	0.027%	0.072%	0.005%	0.005%
32	0.030%	0.099%	0.008%	0.009%
37	0.035%	0.131%	0.016%	0.016%
42	0.104%	0.174%	0.030%	0.031%
47	0.112%	0.239%	0.054%	0.058%
52	0.090%	0.319%	0.075%	0.075%
57	0.102%	0.406%	0.075%	0.075%
62	0.118%	0.493%	0.075%	0.075%

**12. Rates of Mortality for Healthy Lives**

Mortality rates for General active members are based on the sex distinct Public General 2010 Above-Median Income Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 1.05 for females and no adjustment for males.

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Mortality rates for Safety active members are based on the sex distinct Public Safety 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 0.98 for males and 1.06 for females. 10% of Safety member active deaths are assumed to occur in the line of duty.

Mortality rates for healthy General annuitants and General beneficiaries are based on the sex distinct Public General 2010 Above-Median Income Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 1.04 for females and no adjustment for males.

Mortality rates for Safety annuitants and Safety beneficiaries are based on the sex distinct Public Safety 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 1.02 for males and 1.05 for females.

**13. Rates of Mortality for Disabled Retirees**

Mortality rates for General disabled annuitants are based on the sex distinct Public General Disabled Annuitant 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, with a partial credibility adjustment of 1.04 for males and 1.07 for females.

Mortality rates for Safety disabled annuitants are based on the sex distinct Public Safety Disabled Annuitant 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, with a partial credibility adjustment of 1.04 for males and 0.98 for females.

**14. Mortality Improvement**

The mortality assumptions employ a fully generational mortality improvement projection from the base year of the Society of Actuaries' new Public mortality tables (2010) using Scale MP-2018.

**15. Adjustment for Service Purchases**

SJCERA provides Cheiron with the amount of service that active employees are eligible to purchase. We include this service when calculating the employees' benefit eligibility. Half of eligible service purchases, which have not been purchased by the members, are included in the employees' Credited Service, as employees will pay approximately half of the normal cost for these benefits when purchasing this service.

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**16. Assumptions for Employee Contribution Rates**

Mortality rates are the base mortality tables described above, projected using Scale MP-2018 from 2010 to 2040 for General and Safety Members. The projection periods are based on the duration of active liabilities for the respective groups, and the period during which the associated employee contribution rates will be in use. The employee contribution rates are also blended using a male/female weighting of 29%/71% for General Members and 75%/25% for Safety members.

**17. Rates of Retirement**

Rates of retirement are based on age and service according to the following table.

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Rates of Retirement								
Age	General Male Years of Service			General Female Years of Service			Safety Years of Service	
	5-9	10-29	30+	5-9	10-29	30+	5-19	20+
45	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
46	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
47	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
48	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
49	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
50	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	15.00%
51	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	10.00%
52	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	10.00%
53	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	20.00%
54	3.00%	3.00%	10.00%	5.75%	3.50%	4.50%	5.00%	20.00%
55	3.00%	6.50%	10.00%	2.50%	3.50%	4.50%	5.00%	20.00%
56	3.00%	4.00%	10.00%	1.50%	7.00%	15.00%	10.00%	20.00%
57	3.00%	4.00%	10.00%	1.50%	7.00%	15.00%	10.00%	20.00%
58	3.00%	4.00%	10.00%	1.50%	7.00%	15.00%	10.00%	20.00%
59	7.00%	9.00%	27.50%	2.00%	7.00%	15.00%	10.00%	15.00%
60	7.00%	9.00%	27.50%	6.25%	12.50%	25.00%	10.00%	30.00%
61	7.00%	15.00%	27.50%	6.25%	12.50%	25.00%	10.00%	30.00%
62	7.00%	30.00%	40.00%	18.50%	25.00%	35.00%	20.00%	30.00%
63	7.00%	25.00%	40.00%	5.00%	25.00%	35.00%	20.00%	30.00%
64	15.00%	25.00%	40.00%	9.00%	25.00%	35.00%	20.00%	50.00%
65	25.00%	25.00%	40.00%	12.50%	25.00%	35.00%	100.00%	100.00%
66	10.00%	35.00%	50.00%	25.00%	25.00%	30.00%	100.00%	100.00%
67	15.00%	30.00%	40.00%	25.00%	25.00%	30.00%	100.00%	100.00%
68	15.00%	30.00%	30.00%	25.00%	25.00%	30.00%	100.00%	100.00%
69	30.00%	40.00%	30.00%	25.00%	25.00%	30.00%	100.00%	100.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

**18. Changes in Assumptions**

None.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**A. Definitions**

**Compensation:** Compensation means the cash remuneration for services paid by the employer. It includes base pay and certain differential, incentive, and special pay allowances defined by the Board of Retirement. Overtime is excluded, with the exception of overtime paid under the Fair Labor Standards Act that is regular and recurring.

For members joining the Plan on and after January 1, 2013 (Tier 2 Members), only pensionable compensation up to the PEPRA compensation limit (\$128,059 for 2021) will count for computing Plan benefits and employee contributions and employer contributions for those participating in Social Security. For those not participating in Social Security, the compensation cap is 120% of the PEPRA compensation limit (\$153,671 for 2021.) In addition, it is possible that some sources of compensation, such as any payments deemed to be terminal or special pays, may be excluded from benefit and contribution computations for Tier 2 Members.

**Credited Service:** In general, Credited Service is earned for the period during which Member Contributions are paid.

Temporary service for which the Member was not credited, or service for which the Member withdrew his or her Member Contributions, may be purchased by paying or repaying the Member Contributions with interest. Credit for up to 12 months of a medical leave of absence and all military leaves of absence may also be purchased.

Public Service (see below) is part of Credited Service for the computation of benefits only, not for eligibility for benefits or for vesting.

**Final**

**Compensation:** For Tier 1 Members, Final Compensation means the highest average Compensation earned during any 12 consecutive months of the Member's employment.

For Tier 2 Members, highest average Compensation will be based on the highest 36 consecutive months, rather than 12 months.

**General Member:** Any Member who is not a Safety Member is a General Member.

**Public Service:** The Member may elect to purchase Public Service for time spent while employed in another recognized public agency. The public agency must have a reciprocal agreement with the Plan or be one of several specified municipalities, counties, special districts, or State or Federal agencies.

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Public Service cannot be purchased if it is used for eligibility for another pension.

The cost to purchase Public Service is twice the Member Contributions and interest applicable for the period of time purchased. Public Service is used to compute benefits but does not count toward eligibility for benefits or vesting.

Safety Member: Any sworn Member engaged in law enforcement, probation, or fire suppression is a Safety Member.

**B. Membership**

Eligibility: All full-time, permanent employees of San Joaquin County and other participating special districts become Members on their date of appointment. Membership is mandatory; only elected officials and members who are age 60 or older at the time of employment in a position requiring membership in SJCERA may choose not to participate.

A Tier 2 Member is any Member joining the Plan for the first time on or after January 1, 2013. Employees who transfer from and are eligible for reciprocity with another public employer will not be Tier 2 Members if their service in the reciprocal system was under a previous tier. Employees who were Members of SJCERA prior to January 1, 2013 and experienced a break in service of more than six months and then were reemployed by a *different* SJCERA-participating employer on or after January 1, 2013 will be considered Tier 2 Members for all subsequent service.

Member

Contributions: Each Member contributes a percentage of Compensation to the Plan through payroll deduction. For Tier 1 members, the percentage contributed depends on the Member's age upon joining the Plan. Representative rates are shown in Table 1 on the next page.

Tier 1 members covered by Social Security have their contributions reduced by one-third on the first \$161.54 of biweekly Compensation. General Members who joined the Plan prior to March 7, 1973 and who have earned 30 years of Credited Service do not contribute; Safety Members do not contribute after earning 30 years of Credited Service.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**Table 1: Tier 1 Member Contribution Rates (Basic Rates)**

Entry Age	General Member Rate		Safety Member Rate	
	1 <sup>st</sup> \$350/month	Over \$350	1 <sup>st</sup> \$350/month	Over \$350
20	1.97%	2.95%	2.97%	4.45%
25	2.18%	3.27%	3.20%	4.80%
30	2.41%	3.62%	3.45%	5.18%
35	2.68%	4.02%	3.74%	5.61%
40	2.97%	4.46%	4.09%	6.14%
45	3.26%	4.89%	4.48%	6.72%
50	3.54%	5.31%	4.27%	6.41%

*Rates include the employee share of the administrative expenses.*

Some Tier 1 members also contribute half of the normal cost associated with the post-retirement COLA benefits, also based on entry age. Many bargaining groups have also agreed to have their Tier 1 members pay additional basic rate contributions (14% of the current basic rates for General members, 33% for Safety). The complete rate tables for all groups are in the Appendix G.

Tier 2 Members contribute half of the normal cost of the Plan. Contributions for these Members are based on the Normal Cost associated with their benefits; General and Safety members pay different rates.

Tier 2 Members pay a single contribution rate, not a rate based on entry age. All Tier 2 Members continue contributing after earning 30 years of service. These rates are updated annually, to reflect changes in the Tier 2 demographics, as well as any changes in assumptions (such as the discount rate change).

**Table 2: Tier 2 Member Contribution Rates**

General Member Rate	Safety Member Rate
9.99%	15.42%

*Rates include the employee share of the administrative expenses.*

Interest is credited semiannually to each Member's accumulated contributions, based on the previous year's expected rate of return on assets. The crediting rate for 2021 is 3.4408%, for an effective annual rate of 7.00%.



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**C. Service Retirement**

**Eligibility:** Tier 1 General Members are eligible to retire at age 50 if they have earned five years of Credited Service and have passed the tenth anniversary of their membership in the Plan. Alternatively, General Members are eligible to retire at any age after having earned 30 years of Credited Service, or upon reaching age 70 with no service requirement.

Tier 1 Safety Members are eligible to retire at age 50 if they have earned five years of Credited Service and have passed the tenth anniversary of their membership in the Plan. Alternatively, Safety Members are eligible to retire at any age after having earned 20 years of Credited Service.

Tier 2 General Members are eligible to retire upon attaining age 52 and completing five or more years of service. Tier 2 Safety Members are eligible to retire upon attaining age 50 and completing five or more years of service. Tier 2 Members are eligible to retire, regardless of service, after attaining age 70.

**Benefit Amount:** The Service Retirement Benefit payable to Tier 1 General Members is equal to the percentage in Table 3 on the next page multiplied by the Member's Final Compensation. The Service Retirement Benefit payable to Tier 1 Safety Members is equal to the percentage in the upcoming Table 4 multiplied by the Member's Final Compensation. The percentage of Final Compensation may not exceed 100%. For those Tier 1 members integrated with Social Security, Retirement Benefits based on the first \$350 of monthly Final Average Compensation are reduced by one-third.

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**Table 3: Tier 1 General Members (CERL Section 31676.14)**

Service	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
10					14.75	15.67	16.67	17.41	18.41	19.48	20.61	21.82	22.68	23.54	24.40	25.26	26.11	26.11	26.11	26.11
11					16.23	17.23	18.33	19.15	20.25	21.42	22.67	24.00	24.95	25.89	26.84	27.78	28.72	28.72	28.72	28.72
12					17.70	18.80	20.00	20.89	22.10	23.37	24.73	26.19	27.22	28.25	29.28	30.31	31.34	31.34	31.34	31.34
13					19.18	20.36	21.67	22.64	23.94	25.32	26.79	28.37	29.48	30.60	31.72	32.83	33.95	33.95	33.95	33.95
14					20.65	21.93	23.33	24.38	25.78	27.27	28.85	30.55	31.75	32.95	34.16	35.36	36.56	36.56	36.56	36.56
15					22.13	23.50	25.00	26.12	27.62	29.22	30.91	32.73	34.02	35.31	36.60	37.88	39.17	39.17	39.17	39.17
16					23.60	25.06	26.67	27.86	29.46	31.16	32.97	34.92	36.29	37.66	39.04	40.41	41.78	41.78	41.78	41.78
17					25.08	26.63	28.33	29.60	31.30	33.11	35.03	37.10	38.56	40.01	41.47	42.93	44.39	44.39	44.39	44.39
18					26.55	28.20	30.00	31.34	33.14	35.06	37.09	39.28	40.82	42.37	43.91	45.46	47.00	47.00	47.00	47.00
19					28.03	29.76	31.67	33.08	34.98	37.01	39.16	41.46	43.09	44.72	46.35	47.98	49.61	49.61	49.61	49.61
20					29.50	31.33	33.33	34.82	36.83	38.95	41.22	43.64	45.36	47.08	48.79	50.51	52.23	52.23	52.23	52.23
21					30.98	32.90	35.00	36.57	38.67	40.90	43.28	45.83	47.63	49.43	51.23	53.04	54.84	54.84	54.84	54.84
22					32.45	34.46	36.67	38.31	40.51	42.85	45.34	48.01	49.90	51.78	53.67	55.56	57.45	57.45	57.45	57.45
23					33.93	36.03	38.33	40.05	42.35	44.80	47.40	50.19	52.16	54.14	56.11	58.09	60.06	60.06	60.06	60.06
24					35.40	37.60	40.00	41.79	44.19	46.74	49.46	52.37	54.43	56.49	58.55	60.61	62.67	62.67	62.67	62.67
25					36.88	39.16	41.67	43.53	46.03	48.69	51.52	54.56	56.70	58.85	60.99	63.14	65.28	65.28	65.28	65.28
26					38.35	40.73	43.33	45.27	47.87	50.64	53.58	56.74	58.97	61.20	63.43	65.66	67.89	67.89	67.89	67.89
27					39.83	42.30	45.00	47.01	49.72	52.59	55.64	58.92	61.24	63.55	65.87	68.19	70.51	70.51	70.51	70.51
28					41.30	43.86	46.67	48.75	51.56	54.54	57.70	61.10	63.50	65.91	68.31	70.71	73.12	73.12	73.12	73.12
29					42.78	45.43	48.33	50.49	53.40	56.48	59.76	63.28	65.77	68.26	70.75	73.24	75.73	75.73	75.73	75.73
30	35.28	37.27	39.41	41.73	44.25	47.00	50.00	52.24	55.24	58.43	61.82	65.47	68.04	70.61	73.19	75.77	78.34	78.34	78.34	78.34
31		38.51	40.72	43.12	45.73	48.56	51.67	53.98	57.08	60.38	63.88	67.65	70.31	72.97	75.63	78.29	80.95	80.95	80.95	80.95
32			42.04	44.51	47.20	50.13	53.33	55.72	58.92	62.33	65.95	69.83	72.58	75.32	78.07	80.82	83.56	83.56	83.56	83.56
33				45.90	48.68	51.69	55.00	57.46	60.76	64.27	68.01	72.01	74.84	77.68	80.51	83.34	86.17	86.17	86.17	86.17
34					50.15	53.26	56.67	59.20	62.60	66.22	70.07	74.19	77.11	80.03	82.95	85.87	88.78	88.78	88.78	88.78
35						54.83	58.33	60.94	64.45	68.17	72.13	76.38	79.38	82.38	85.39	88.39	91.40	91.40	91.40	91.40
36							60.00	62.68	66.29	70.12	74.19	78.56	81.65	84.74	87.83	90.92	94.01	94.01	94.01	94.01
37								64.42	68.13	72.06	76.25	80.74	83.92	87.09	90.27	93.44	96.62	96.62	96.62	96.62
38									69.97	74.01	78.31	82.92	86.18	89.44	92.71	95.97	99.23	99.23	99.23	99.23
39										75.96	80.37	85.11	88.45	91.80	95.15	98.49	100	100	100	100
40											82.43	87.29	90.72	94.15	97.59	100				
41												89.47	92.99	96.51	100					
42													95.26	98.86						
43														100						

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**Table 4: Tier 1 Safety Members (CERL Section 31664.1)**

Service	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
10										30.00	30.00	30.00	30.00	30.00	30.00
11										33.00	33.00	33.00	33.00	33.00	33.00
12										36.00	36.00	36.00	36.00	36.00	36.00
13										39.00	39.00	39.00	39.00	39.00	39.00
14										42.00	42.00	42.00	42.00	42.00	42.00
15										45.00	45.00	45.00	45.00	45.00	45.00
16										48.00	48.00	48.00	48.00	48.00	48.00
17										51.00	51.00	51.00	51.00	51.00	51.00
18										54.00	54.00	54.00	54.00	54.00	54.00
19										57.00	57.00	57.00	57.00	57.00	57.00
20	37.55	39.75	42.02	44.38	46.83	49.36	52.07	54.51	57.13	60.00	60.00	60.00	60.00	60.00	60.00
21		41.74	44.13	46.6	49.17	51.82	54.67	57.24	59.99	63.00	63.00	63.00	63.00	63.00	63.00
22			46.23	48.82	51.51	54.29	57.27	59.96	62.85	66.00	66.00	66.00	66.00	66.00	66.00
23				51.04	53.85	56.76	59.88	62.69	65.7	69.00	69.00	69.00	69.00	69.00	69.00
24					56.2	59.23	62.48	65.41	68.56	72.00	72.00	72.00	72.00	72.00	72.00
25						61.7	65.09	68.14	71.42	75.00	75.00	75.00	75.00	75.00	75.00
26							67.69	70.86	74.27	78.00	78.00	78.00	78.00	78.00	78.00
27								73.59	77.13	81.00	81.00	81.00	81.00	81.00	81.00
28									79.98	84.00	84.00	84.00	84.00	84.00	84.00
29										87.00	87.00	87.00	87.00	87.00	87.00
30										90.00	90.00	90.00	90.00	90.00	90.00
31										93.00	93.00	93.00	93.00	93.00	93.00
32										96.00	96.00	96.00	96.00	96.00	96.00
33										99.00	99.00	99.00	99.00	99.00	99.00
34										100.00	100.00	100.00	100.00	100.00	100.00
35											100.00	100.00	100.00	100.00	100.00
36												100.00	100.00	100.00	100.00
37													100.00	100.00	100.00
38														100.00	100.00
39															100.00

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**

**Table 5: Tier I Social Security Adjustment**

<b>Age at Retirement</b>	<b>General Member Reduction</b>	<b>Safety Member Reduction</b>
46	\$1.372	\$2.879
47	\$1.449	\$3.037
48	\$1.533	\$3.180
49	\$1.623	\$3.333
50	\$1.721	\$3.500
51	\$1.828	\$3.500
52	\$1.944	\$3.500
53	\$2.031	\$3.500
54	\$2.148	\$3.500
55	\$2.272	\$3.500
56	\$2.404	\$3.500
57	\$2.546	\$3.500
58	\$2.646	\$3.500
59	\$2.746	\$3.500
60	\$2.846	\$3.500
61	\$2.946	\$3.500
62	\$3.046	\$3.500
63	\$3.046	\$3.500
64	\$3.046	\$3.500
65	\$3.046	\$3.500

For Tier 2 General Members, the benefit multiplier is 1% at age 52, increasing by 0.1% for each year of age to 2.5% at 67. For Tier 2 Safety Members, the benefit multiplier is 2% at age 50, increasing by 0.1% for each year of age to 2.7% at age 57. In between exact ages, the multiplier increases by 0.025% for each quarter year increase in age.

**Form of Benefit:** The Service Retirement Benefit will be paid monthly beginning at retirement and for the life of the Member. If the member selects the unmodified benefit form, in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse, or to the age of majority of dependent minor children if there is no spouse. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

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Actuarially equivalent optional benefit forms are also available.

Annually on April 1, benefits are adjusted to reflect changes in the CPI for the San Francisco Bay Area. Annual adjustments may not exceed 3%, but changes in CPI in excess of 3% are “banked” and used for future adjustments when changes in CPI are less than 3%.

In addition, ad hoc cost-of-living adjustments have been granted in the past and may be granted in the future.

A lump sum benefit of \$5,000 will be payable upon the death of a retired member.

**D. Service-Connected Disability**

**Eligibility:** Members are eligible for Service-Connected Disability Retirement benefits at any age if they are permanently disabled as a result of injuries or illness sustained in the line of duty.

**Benefit Amount:** The Service-Connected Disability Retirement Benefit payable to Members is equal to the greater of 50% of their Final Compensation or – if the Member is eligible at disability for a Service Retirement Benefit – the Service Retirement Benefit accrued on the date of disability.

Members who return to work at a different position with lower pay may receive a Supplemental Disability Allowance that, when added to their new pay, may bring the Member’s total income up to the current pay for his or her position at the time of disability. The Supplemental Disability Allowance may not exceed the Service-Connected Disability Retirement benefit.

**Form of Benefit:** The Service-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement and for the life of the Member; in the event of the Member’s death, 100% of the benefit will continue for the life of the Member’s spouse, or to the age of majority of dependent minor children if there is no spouse. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member’s accumulated contributions will be paid to the Member’s designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, benefits are adjusted to reflect changes in the CPI for the San Francisco Bay Area. Annual adjustments may not exceed 3%, but

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changes in CPI in excess of 3% are “banked” and used for future adjustments when changes in CPI are less than 3%.

In addition, ad hoc cost-of-living adjustments have been granted in the past and may be granted in the future.

A lump sum benefit of \$5,000 will be payable upon the death of a retired member.

**E. Nonservice-Connected Disability**

**Eligibility:** Members are eligible for Nonservice-Connected Disability Retirement benefits if they are permanently disabled at any age after earning five years of Credited Service or after becoming eligible for a deferred vested benefit.

**Benefit Amount:** The Nonservice-Connected Disability Retirement Benefit payable to General Members is equal to the greatest of:

- 1.5% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.5% of Final Compensation at disability multiplied by years of Credited Service projected to age 65, but not to exceed one-third of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

The Nonservice-Connected Disability Retirement Benefit payable to Safety Members is equal to the greatest of:

- 1.8% of Final Compensation at disability multiplied by years of Credited Service at disability;
- 1.8% of Final Compensation at disability multiplied by years of Credited Service projected to age 55, but not to exceed one-third of Final Compensation; or
- If the Member is eligible at disability for a Service Retirement Benefit, the Service Retirement Benefit accrued on the date of disability.

Members who return to work at a different position with lower pay may receive a Supplemental Disability Allowance that, when added to their new pay, may bring the Member's total income up to the current pay for his or her position at the time of disability. The Supplemental Disability

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Allowance may not exceed the Nonservice-Connected Disability Retirement benefit.

**Form of Benefit:** The Nonservice-Connected Disability Retirement Benefit will be paid monthly beginning at the effective date of disability retirement, and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, benefits are adjusted to reflect changes in the CPI for the San Francisco Bay Area. Annual adjustments may not exceed 3%, but changes in CPI in excess of 3% are "banked" and used for future adjustments when changes in CPI are less than 3%.

In addition, ad hoc cost-of-living adjustments have been granted in the past and may be granted in the future.

A lump sum benefit of \$5,000 will be payable upon the death of a retired member.

**F. Service-Connected Death**

**Eligibility:** A Member's survivors are eligible to receive Service-Connected Death benefits if the Member's death resulted from injury or illness sustained in connection with the Member's duties.

**Benefit Amount:** The Service-Connected Death benefit payable to a surviving spouse or minor children will be 50% of the Member's Final Compensation.

In the event the Member's death was caused by external violence or physical force, an additional benefit of 25% of the above basic benefit will be paid for the first minor child, 15% for the second, and 10% for the third.

Furthermore, for Safety Members only, there will be an additional lump sum benefit of 12 months of pay at the time of death.

**Form of Benefit:** The Service-Connected Death Benefit will be paid monthly beginning at the Member's death and for the life of the surviving spouse or to the age of majority of dependent minor children if there is no spouse.

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Annually on April 1, benefits are adjusted to reflect changes in the CPI for the San Francisco Bay Area. Annual adjustments may not exceed 3%, but changes in CPI in excess of 3% are “banked” and used for future adjustments when changes in CPI are less than 3%.

In addition, ad hoc cost-of-living adjustments have been granted in the past and may be granted in the future.

**G. Nonservice-Connected Death**

**Eligibility:** A Member’s survivors are eligible to receive Nonservice-Connected Death benefits if the Member’s death arose from causes unrelated to the Member’s duties.

**Benefit Amount:** In the event the Member had earned fewer than five years of Credited Service and has no or insufficient reciprocity service from another system, the Nonservice-Connected Death benefit will be a refund of the Member’s accumulated contributions with interest plus a payment of one month of Final Compensation for each year of Credited Service, not to exceed six months.

In the event the Member had earned five or more years of Credited Service, the Nonservice-Connected Death benefit payable to a surviving spouse or minor children will be 60% of the amount the Member would have received as a Nonservice-Connected Disability Retirement Benefit on the date of death.

**Form of Benefit:** For Members who had earned fewer than five years of Credited Service at death, the benefit will be paid as a lump sum.

For Members with five or more years of Credited Service, the Nonservice-Connected Death Benefit will be paid monthly beginning at the Member’s death and for the life of the surviving spouse or to the age of majority of dependent minor children if there is no spouse.

Annually on April 1, benefits are adjusted to reflect changes in the CPI for the San Francisco Bay Area. Annual adjustments may not exceed 3%, but changes in CPI in excess of 3% are “banked” and used for future adjustments when changes in CPI are less than 3%.

In addition, ad hoc cost-of-living adjustments have been granted in the past and may be granted in the future.



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**H. Withdrawal Benefit**

- Eligibility: A Member is eligible for a Withdrawal Benefit upon termination of employment.
- Benefit Amount: The Withdrawal Benefit is a refund of the Member's accumulated contributions with interest. Upon receipt of the Withdrawal Benefit, the Member forfeits all Credited Service.
- Form of Benefit: The Withdrawal Benefit is paid in a lump sum upon election by the Member.

**I. Deferred Vested Benefit**

- Eligibility: A Member is eligible for a Deferred Vested Benefit upon termination of employment after earning five years of Credited Service, including reciprocity service from another system. The Member must leave his or her Member Contributions with interest on deposit with the Plan.
- Benefit Amount: The Deferred Vested Benefit is computed in the same manner as the Service Retirement Benefit, but it is based on Credited Service and Final Compensation on the date of termination.

For Tier 1 Members, Tables 2 and 3 are extended for service under 10 years using benefit multipliers of one-sixtieth per year of Credited Service at age 52 (General) or 3% per year of Credited Service at age 50 (Safety), with adjustments for earlier or later retirement under Sections 31676.14 and 31664.1, respectively, of the County Employees Retirement Law of 1937.

- Form of Benefit: The Deferred Vested Benefit will be paid monthly beginning at retirement and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, benefits are adjusted to reflect changes in the CPI for the San Francisco Bay Area. Annual adjustments may not exceed 3%, but changes in CPI in excess of 3% are "banked" and used for future adjustments when changes in CPI are less than 3%.

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In addition, ad hoc cost-of-living adjustments have been granted in the past and may be granted in the future.

A lump sum benefit of \$5,000 will be payable upon the death of a retired member.

**J. Reciprocal Benefit**

**Eligibility:** A Member is eligible for a Reciprocal Benefit upon termination of employment and entry, within a specified period of time, into another retirement system recognized as a reciprocal system by the Plan. In addition, the Member must leave his or her Member Contributions with interest on deposit with the Plan.

**Benefit Amount:** The Reciprocal Benefit is computed in the same manner as the Service Retirement Benefit, but it is based on Credited Service on the date of termination and Final Compensation on the date of retirement; Final Compensation is based on the highest of the Compensation earned under this Plan or the reciprocal plan.

**Form of Benefit:** The Reciprocal Benefit will be paid monthly beginning at retirement and for the life of the Member; in the event of the Member's death, 60% of the benefit will continue for the life of the Member's spouse or to the age of majority of dependent minor children if there is no spouse. In the event there is no surviving spouse or minor children, any unpaid remainder of the Member's accumulated contributions will be paid to the Member's designated beneficiary.

Actuarially equivalent optional benefit forms are also available.

Annually on April 1, benefits are adjusted to reflect changes in the CPI for the San Francisco Bay Area. Annual adjustments may not exceed 3%, but changes in CPI in excess of 3% are "banked" and used for future adjustments when changes in CPI are less than 3%.

A lump sum benefit may be payable upon the death of a retired Member by the last system under which the Member's service was covered.

Subsequent to the valuation date, the Board approved the creation of Tier 2B for new members hired after January 1, 2022, but the implementation of this Tier does not have any impact on the current valuation results. The only difference for this Tier is in the definition of pensionable compensation, which only includes base pay. There have been no other changes in plan provisions since the prior valuation.

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**APPENDIX D – 401(H) REPAYMENT SCHEDULE**

As of January 1, 2014, a separate amortization layer was established for the repayment of funds originally transferred to a retiree health reserve. This schedule was prepared in compliance with an approved Voluntary Correction Program that SJCERA submitted to the IRS. The original balance of the amortization layer (\$48.0 million) is being amortized using the same methodology and assumptions as the UAL – as a level percentage of payroll over a 19-year period – after an initial payment of \$19.8 million.

Date	Outstanding Balance	Years Remaining	End of Year Payment
1/1/2017	\$27,547,546	16	\$2,460,275
1/1/2018	\$27,125,789	15	\$2,512,141
1/1/2019	\$26,580,267	14	\$2,591,274
1/1/2020	\$25,916,063	13	\$2,653,902
1/1/2021	\$25,076,285	12	\$2,733,519
1/1/2022	\$24,098,107	11	\$2,815,524
1/1/2023	\$22,969,449	10	\$2,899,990
1/1/2024	\$21,677,321	9	\$2,986,990
1/1/2025	\$20,207,743	8	\$3,076,600
1/1/2026	\$18,545,686	7	\$3,168,898
1/1/2027	\$16,674,986	6	\$3,263,965
1/1/2028	\$14,578,270	5	\$3,361,883
1/1/2029	\$12,236,866	4	\$3,462,740
1/1/2030	\$9,630,706	3	\$3,566,622
1/1/2031	\$6,738,234	2	\$3,673,621
1/1/2032	\$3,536,289	1	\$3,783,829
1/1/2033	\$0	0	\$0

## APPENDIX E – 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.

### 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.

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**9. Amortization Payment**

The portion of the pension plan contribution that 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 Actuarial Value of Assets to the Actuarial Liabilities. The funded ratio shown in this report is not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, in the case of a plan termination or other similar action. However, it is an appropriate measure for assessing the need for or the amount of future contributions.

**12. Inactive Funded Ratio**

The ratio of the Inactive Actuarial Liabilities to the total Actuarial Liabilities. The inactive funded ratio is a measure that shows the minimum funded status needed to pay benefits for all inactive members.

**13. Normal Cost**

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

**14. 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.

**15. Unfunded Actuarial Liability**

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

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**APPENDIX F – GENERAL AND SAFETY EMPLOYER CONTRIBUTION RATES**

**Tier 1: Contribution Rates for General and Safety (no COLA Cost-Sharing)**

Separate rates for General and Safety members are shown below. These rates are applicable for employment groups that have not implemented equal sharing of the contributions required for post-retirement cost-of-living adjustments (COLA) in accordance with Government Code Section 31873.

As of January 1, 2020				As of January 1, 2021			
	General	Safety	Total		General	Safety	Total
<b>Employer Normal Cost</b>				<b>Employer Normal Cost</b>			
Basic	13.85%	22.31%	15.47%	Basic	13.82%	22.23%	15.46%
COL	6.00%	10.56%	6.87%	COL	6.00%	10.54%	6.89%
Total	19.85%	32.87%	22.34%	Total	19.82%	32.77%	22.35%
<b>UAL Amortization Cost</b>				<b>UAL Amortization Cost</b>			
Basic	20.85%	44.44%	25.30%	Basic	20.94%	45.40%	25.65%
COL	8.80%	16.84%	10.32%	COL	9.66%	18.33%	11.33%
Total	29.65%	61.28%	35.62%	Total	30.60%	63.73%	36.98%
<b>Total Cost</b>				<b>Total Cost</b>			
Basic	34.70%	66.75%	40.77%	Basic	34.76%	67.63%	41.11%
COL	14.80%	27.40%	17.19%	COL	15.66%	28.87%	18.22%
Total	49.50%	94.15%	57.96%	Total	50.42%	96.50%	59.33%

*Rates include the employer share of the administrative expenses.*

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**Tier 1: Contribution Rates for General and Safety (Employer Cost with additional 14% / 33% Normal Rates by members without COLA Cost-sharing)**

Separate rates for General and Safety members contributing an additional 14% / 33% of Normal Rates are shown below.

As of January 1, 2020				As of January 1, 2021			
	General	Safety	Total		General	Safety	Total
<b>Employer Normal Cost</b>				<b>Employer Normal Cost</b>			
Basic	13.29%	20.69%	14.71%	Basic	13.26%	20.61%	14.70%
COL	6.00%	10.56%	6.87%	COL	6.00%	10.54%	6.88%
Total	19.29%	31.25%	21.58%	Total	19.26%	31.15%	21.58%
<b>UAL Amortization Cost</b>				<b>UAL Amortization Cost</b>			
Basic	20.85%	44.44%	25.30%	Basic	20.94%	45.40%	25.65%
COL	8.80%	16.84%	10.32%	COL	9.66%	18.33%	11.33%
Total	29.65%	61.28%	35.62%	Total	30.60%	63.73%	36.98%
<b>Total Cost</b>				<b>Total Cost</b>			
Basic	34.14%	65.13%	40.01%	Basic	34.20%	66.01%	40.35%
COL	14.80%	27.40%	17.19%	COL	15.66%	28.87%	18.21%
Total	48.94%	92.53%	57.20%	Total	49.86%	94.88%	58.56%

*Rates include the employer share of the administrative expenses.*

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**Tier 1: Contribution Rates for General and Safety (with COLA Cost-sharing)**

Separate rates for General and Safety members contributing Normal Rates plus COLA Cost-sharing are shown below.

As of January 1, 2020				As of January 1, 2021			
	General	Safety	Total		General	Safety	Total
<b>Employer Normal Cost</b>				<b>Employer Normal Cost</b>			
Basic	13.85%	22.31%	15.47%	Basic	13.82%	22.23%	15.46%
COL	3.09%	5.48%	3.55%	COL	3.11%	5.46%	3.57%
Total	16.94%	27.79%	19.02%	Total	16.93%	27.69%	19.03%
<b>UAL Amortization Cost</b>				<b>UAL Amortization Cost</b>			
Basic	20.85%	44.44%	25.30%	Basic	20.94%	45.40%	25.65%
COL	8.80%	16.84%	10.32%	COL	9.66%	18.33%	11.33%
Total	29.65%	61.28%	35.62%	Total	30.60%	63.73%	36.98%
<b>Total Cost</b>				<b>Total Cost</b>			
Basic	34.70%	66.75%	40.77%	Basic	34.76%	67.63%	41.11%
COL	11.89%	22.32%	13.87%	COL	12.77%	23.79%	14.90%
Total	46.59%	89.07%	54.64%	Total	47.53%	91.42%	56.01%

*Rates include the employer share of the administrative expenses.*



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**APPENDIX F – GENERAL AND SAFETY EMPLOYER CONTRIBUTION RATES**

**Tier 1: Contribution Rates for General and Safety (Employer Cost with additional 14% / 33% Normal Rates by members and COLA Cost-sharing)**

Separate rates for General and Safety members contributing an additional 14% / 33% of Normal Rates and COLA Cost-sharing are shown below.

As of January 1, 2020				As of January 1, 2021			
	General	Safety	Total		General	Safety	Total
<b>Employer Normal Cost</b>				<b>Employer Normal Cost</b>			
Basic	13.29%	20.69%	14.71%	Basic	13.26%	20.61%	14.70%
COL	3.09%	5.48%	3.55%	COL	3.11%	5.46%	3.56%
Total	16.38%	26.17%	18.26%	Total	16.37%	26.07%	18.26%
<b>UAL Amortization Cost</b>				<b>UAL Amortization Cost</b>			
Basic	20.85%	44.44%	25.30%	Basic	20.94%	45.40%	25.65%
COL	8.80%	16.84%	10.32%	COL	9.66%	18.33%	11.33%
Total	29.65%	61.28%	35.62%	Total	30.60%	63.73%	36.98%
<b>Total Cost</b>				<b>Total Cost</b>			
Basic	34.14%	65.13%	40.01%	Basic	34.20%	66.01%	40.35%
COL	11.89%	22.32%	13.87%	COL	12.77%	23.79%	14.89%
Total	46.03%	87.45%	53.88%	Total	46.97%	89.80%	55.24%

*Rates include the employer share of the administrative expenses.*

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**Tier 2: Contribution Rates for General and Safety (PEPRA Members)**

Separate rates for General and Safety members are shown below. These rates are applicable for employment groups that are subject to Government Code Section 7522.30.

As of January 1, 2020				As of January 1, 2021			
	General	Safety	Total		General	Safety	Total
<b>Employer Normal Cost</b>				<b>Employer Normal Cost</b>			
Basic	7.52%	11.05%	7.92%	Basic	7.53%	10.98%	7.92%
COL	2.45%	4.41%	2.67%	COL	2.46%	4.44%	2.69%
Total	9.97%	15.46%	10.59%	Total	9.99%	15.42%	10.61%
<b>UAL Amortization Cost</b>				<b>UAL Amortization Cost</b>			
Basic	20.85%	44.44%	23.42%	Basic	20.94%	45.40%	23.66%
COL	8.80%	16.84%	9.68%	COL	9.66%	18.33%	10.62%
Total	29.65%	61.28%	33.10%	Total	30.60%	63.73%	34.28%
<b>Total Cost</b>				<b>Total Cost</b>			
Basic	28.37%	55.49%	31.34%	Basic	28.47%	56.38%	31.58%
COL	11.25%	21.25%	12.35%	COL	12.12%	22.77%	13.31%
Total	39.62%	76.74%	43.69%	Total	40.59%	79.15%	44.89%

*Rates include the employer share of the administrative expenses.*

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**Total Normal Cost Rates for General and Safety**

As of January 1, 2020				As of January 1, 2021			
	General	Safety	Total		General	Safety	Total
<b>Total Normal Cost</b>				<b>Total Normal Cost</b>			
Tier 1	23.82%	37.80%	26.50%	Tier 1	23.77%	37.71%	26.49%
Tier 2	19.94%	30.92%	21.18%	Tier 2	19.98%	30.84%	21.22%

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX G – MEMBER CONTRIBUTION RATES**

**General Member Contribution Rates**

**Basic Half Rate (Government Code Section 31621.3)**

Entry Age	Basic Rate		COLA Cost-Sharing Rate <sup>1</sup>	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	1.97%	2.95%	1.37%	2.06%
17	1.97%	2.95%	1.37%	2.06%
18	1.97%	2.95%	1.37%	2.06%
19	1.97%	2.95%	1.37%	2.06%
20	1.97%	2.95%	1.37%	2.06%
21	2.01%	3.01%	1.41%	2.12%
22	2.05%	3.07%	1.45%	2.18%
23	2.09%	3.14%	1.50%	2.25%
24	2.13%	3.20%	1.54%	2.31%
25	2.18%	3.27%	1.58%	2.37%
26	2.23%	3.34%	1.62%	2.43%
27	2.27%	3.41%	1.66%	2.49%
28	2.32%	3.48%	1.69%	2.54%
29	2.37%	3.55%	1.73%	2.60%
30	2.41%	3.62%	1.77%	2.65%
31	2.47%	3.70%	1.80%	2.70%
32	2.51%	3.77%	1.83%	2.75%
33	2.57%	3.85%	1.87%	2.81%
34	2.62%	3.93%	1.91%	2.87%
35	2.68%	4.02%	1.96%	2.94%
36	2.73%	4.10%	2.01%	3.01%
37	2.79%	4.19%	2.06%	3.09%
38	2.85%	4.28%	2.12%	3.18%
39	2.92%	4.38%	2.18%	3.27%
40	2.97%	4.46%	2.25%	3.37%
41	3.03%	4.54%	2.31%	3.46%
42	3.08%	4.62%	2.37%	3.55%
43	3.14%	4.71%	2.43%	3.64%
44	3.21%	4.81%	2.49%	3.73%
45	3.26%	4.89%	2.55%	3.83%
46	3.33%	4.99%	2.63%	3.94%
47	3.37%	5.05%	2.65%	3.97%
48	3.42%	5.13%	2.67%	4.01%
49	3.47%	5.21%	2.69%	4.03%
50	3.54%	5.31%	2.70%	4.05%
51	3.55%	5.33%	2.71%	4.07%
52	3.58%	5.37%	2.72%	4.08%
53	3.53%	5.30%	2.71%	4.06%
54+	3.47%	5.20%	2.66%	3.99%

<sup>1</sup> Some members and employers share equally the contributions required for post-retirement cost-of-living adjustments (COLA) in accordance with Government Code Section 31873. For other members, the employers pay all of the contributions required for post-retirement COLA.

*Rates include the employee share of the administrative expenses.*

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX G – MEMBER CONTRIBUTION RATES**

**General Member Contribution Rates**

**Basic Half Rate (Government Code Section 31621.3) + 14%, not greater than 1/2 Normal Cost**

Entry Age	<u>Basic Rate</u>		<u>COLA Cost-Sharing Rate<sup>1</sup></u>	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	2.24%	3.36%	1.38%	2.07%
17	2.24%	3.36%	1.38%	2.07%
18	2.24%	3.36%	1.38%	2.07%
19	2.24%	3.36%	1.38%	2.07%
20	2.24%	3.36%	1.38%	2.07%
21	2.29%	3.43%	1.41%	2.12%
22	2.33%	3.50%	1.45%	2.18%
23	2.39%	3.58%	1.50%	2.25%
24	2.43%	3.65%	1.55%	2.32%
25	2.49%	3.73%	1.58%	2.37%
26	2.54%	3.81%	1.62%	2.43%
27	2.59%	3.89%	1.66%	2.49%
28	2.65%	3.97%	1.69%	2.54%
29	2.70%	4.05%	1.73%	2.60%
30	2.75%	4.13%	1.77%	2.65%
31	2.81%	4.22%	1.80%	2.70%
32	2.87%	4.30%	1.84%	2.76%
33	2.93%	4.39%	1.87%	2.81%
34	2.99%	4.48%	1.91%	2.87%
35	3.05%	4.58%	1.96%	2.94%
36	3.11%	4.67%	2.01%	3.01%
37	3.19%	4.78%	2.07%	3.10%
38	3.25%	4.88%	2.12%	3.18%
39	3.33%	4.99%	2.19%	3.28%
40	3.39%	5.08%	2.25%	3.37%
41	3.45%	5.18%	2.31%	3.46%
42	3.51%	5.27%	2.37%	3.55%
43	3.58%	5.37%	2.43%	3.64%
44	3.65%	5.48%	2.49%	3.73%
45	3.71%	5.57%	2.56%	3.84%
46	3.79%	5.69%	2.63%	3.94%
47	3.84%	5.76%	2.65%	3.97%
48	3.90%	5.85%	2.67%	4.01%
49	3.96%	5.94%	2.69%	4.03%
50	4.03%	6.05%	2.71%	4.06%
51	4.05%	6.08%	2.71%	4.07%
52	4.08%	6.12%	2.72%	4.08%
53	4.03%	6.04%	2.71%	4.06%
54+	3.95%	5.93%	2.67%	4.00%

<sup>1</sup> Some members and employers share equally the contributions required for post-retirement cost-of-living adjustments (COLA) in accordance with Government Code Section 31873. For other members, the employers pay all of the contributions required for post-retirement COLA.

*Rates include the employee share of the administrative expenses.*

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX G – MEMBER CONTRIBUTION RATES**

**Safety Member Contribution Rates**

**Basic Half Rate (Government Code Section 31639.5)**

Entry Age	<u>Basic Rate</u>		<u>COLA Cost-Sharing Rate<sup>1</sup></u>	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	2.97%	4.45%	3.12%	4.68%
17	2.97%	4.45%	3.12%	4.68%
18	2.97%	4.45%	3.12%	4.68%
19	2.97%	4.45%	3.12%	4.68%
20	2.97%	4.45%	3.12%	4.68%
21	3.01%	4.51%	3.23%	4.84%
22	3.05%	4.58%	3.28%	4.92%
23	3.10%	4.65%	3.33%	4.99%
24	3.15%	4.72%	3.37%	5.06%
25	3.20%	4.80%	3.42%	5.13%
26	3.25%	4.87%	3.46%	5.19%
27	3.30%	4.95%	3.51%	5.26%
28	3.35%	5.02%	3.54%	5.31%
29	3.40%	5.10%	3.58%	5.37%
30	3.45%	5.18%	3.62%	5.43%
31	3.51%	5.26%	3.62%	5.43%
32	3.57%	5.35%	3.67%	5.50%
33	3.62%	5.43%	3.72%	5.58%
34	3.68%	5.52%	3.73%	5.59%
35	3.74%	5.61%	3.74%	5.61%
36	3.81%	5.71%	3.76%	5.64%
37	3.87%	5.81%	3.80%	5.70%
38	3.94%	5.91%	3.85%	5.77%
39	4.01%	6.02%	3.90%	5.85%
40	4.09%	6.14%	3.97%	5.96%
41	4.18%	6.27%	4.03%	6.04%
42	4.28%	6.42%	4.08%	6.12%
43	4.39%	6.59%	4.15%	6.23%
44	4.49%	6.73%	4.23%	6.35%
45	4.48%	6.72%	4.31%	6.46%
46	4.49%	6.73%	4.36%	6.54%
47	4.52%	6.78%	4.39%	6.59%
48	4.39%	6.59%	4.42%	6.63%
49+	4.27%	6.41%	4.45%	6.67%

<sup>1</sup> Some members and employers share equally the contributions required for post-retirement cost-of-living adjustments (COLA) in accordance with Government Code Section 31873. For other members, the employers pay all of the contributions required for post-retirement COLA.

*Rates include the employee share of the administrative expenses.*

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION  
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2021**

**APPENDIX G – MEMBER CONTRIBUTION RATES**

**Safety Member Contribution Rates**

**Basic Half Rate (Government Code Section 31639.5) + 33%, not greater than 1/2  
Normal Cost**

Entry Age	<u>Basic Rate</u>		<u>COLA Cost-Sharing Rate<sup>1</sup></u>	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	3.95%	5.92%	3.12%	4.68%
17	3.95%	5.92%	3.12%	4.68%
18	3.95%	5.92%	3.12%	4.68%
19	3.95%	5.92%	3.12%	4.68%
20	3.95%	5.92%	3.12%	4.68%
21	4.00%	6.00%	3.23%	4.84%
22	4.06%	6.09%	3.28%	4.92%
23	4.12%	6.18%	3.33%	5.00%
24	4.19%	6.28%	3.37%	5.06%
25	4.25%	6.38%	3.42%	5.13%
26	4.32%	6.48%	3.46%	5.19%
27	4.39%	6.58%	3.51%	5.26%
28	4.45%	6.68%	3.55%	5.32%
29	4.52%	6.78%	3.58%	5.37%
30	4.59%	6.89%	3.62%	5.43%
31	4.67%	7.00%	3.63%	5.44%
32	4.75%	7.12%	3.67%	5.50%
33	4.81%	7.22%	3.72%	5.58%
34	4.89%	7.34%	3.73%	5.59%
35	4.97%	7.46%	3.74%	5.61%
36	5.06%	7.59%	3.76%	5.64%
37	5.15%	7.73%	3.80%	5.70%
38	5.24%	7.86%	3.85%	5.78%
39	5.34%	8.01%	3.90%	5.85%
40	5.45%	8.17%	3.98%	5.97%
41	5.56%	8.34%	4.03%	6.05%
42	5.69%	8.54%	4.08%	6.12%
43	5.84%	8.76%	4.15%	6.23%
44	5.97%	8.95%	4.24%	6.36%
45	5.96%	8.94%	4.31%	6.46%
46	5.97%	8.95%	4.36%	6.54%
47	6.01%	9.02%	4.39%	6.59%
48	5.84%	8.76%	4.42%	6.63%
49+	5.69%	8.53%	4.45%	6.67%

<sup>1</sup> Some members and employers share equally the contributions required for post-retirement cost-of-living adjustments (COLA) in accordance with Government Code Section 31873. For other members, the employers pay all of the contributions required for post-retirement COLA.

*Rates include the employee share of the administrative expenses.*



*Classic Values, Innovative Advice*