



**San Joaquin County
Employees' Retirement
Association**

**Actuarial Valuation
as of
January 1, 2013**

Produced by [Cheiron](#)

**November 4, 2013
(with additional schedules)**

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LETTER OF TRANSMITTAL

November 4, 2013

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, 2013. This report contains information on the System's assets and liabilities. This report also discloses employer contribution levels and required disclosures under the Governmental Accounting Standards Board Statement Nos. 25 and 27. 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 San Joaquin and its auditors in preparing financial reports in accordance with applicable law and accounting requirements. Any other user of this report is not an intended user and is considered a third party.

Cheiron's report was prepared solely for the Retirement Board of San Joaquin 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. It is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. 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



Robert T. McCrory, FSA, FCA, EA, MAAA
Principal Consulting Actuary



Graham A. Schmidt, ASA, MAAA
Consulting Actuary



FOREWORD

Cheiron has performed the actuarial valuation of the San Joaquin County Employees' Retirement Association as of January 1, 2013. 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 - Assets
 - Section III - Liabilities
 - Section IV- Contributions
 - Section V- Required Accounting Disclosures (GASB)
- 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), actuarial assumptions and methods employed in the prior valuation (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).

The results of this report rely on future plan experience conforming to the underlying assumptions. To the extent that actual plan experience deviates from the underlying assumptions, the results would vary accordingly.

In preparing our report, we relied without audit, on information 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 #23.

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ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**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 2014; and
- Information required by the Governmental Accounting Standards Board (GASB).

In the balance of this Executive Summary we present (A) the basis upon which this year's valuation was completed, (B) the key findings of this valuation including a summary of all key 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.

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, and
- A portion of the Fund's expected administrative expenses.

The unfunded actuarial liability payment is determined as the amount needed to fund the outstanding extraordinary actuarial loss from 2008 at January 1, 2013 over 26 years as a level percent of pay and the remaining unfunded actuarial liability as of January 1, 2013 over a period of 20 years as a level percentage of member payroll. The amortization period for the remaining unfunded actuarial liability will decrease each year after 2013 until an open period of 12 years remains.

This valuation was prepared based on the plan provisions shown in Appendix C. There have been changes in plan provisions since the prior valuation.

Experience studies are performed every three years. This valuation was performed on the basis of the economic and demographic assumptions and methods that were determined in the Actuarial Experience Study as of December 31, 2012. A summary of the assumptions and methods used in the current valuation is shown in Appendix B. A summary of the assumptions and methods used in the prior valuation is shown in Appendix D.

Due to the merger of EFI and Cheiron, the January 1, 2013 actuarial valuation was prepared using Cheiron's valuation system. We replicated the results of the January 1, 2012 actuarial valuation prior to performing the January 1, 2013 actuarial valuation.

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B. Key Findings of this Valuation

The key results of the January 1, 2013 actuarial valuation are as follows:

- The actuarially determined employer contribution rate increased from 35.12% of payroll last year to 42.13% of payroll for 2013.
- The System's funded ratio, the ratio of actuarial assets over actuarial liability, decreased from 69.9% last year to 67.1% as of January 1, 2013 before any method or assumption changes. This decrease was partly due to the rate of return on the actuarial value of assets being lower than the assumed return of 7.75% due to the recognition of investment losses in 2008.
- The System's funded ratio further decreased from 67.1% to 63.4% following method and assumption changes. The change in the assumed rate of return on Fund assets from 7.75% to 7.5%, and the change in assumed mortality rates accounted for most of this 3.7% decrease.
- The unfunded actuarial liability (UAL) is the excess of the System's actuarial liability over the actuarial value of assets. The System experienced an increase in the UAL from \$ 918,268,707 to \$ 1,227,593,985 as of January 1, 2013. This increase in UAL was again primarily due to recognizing 2008 asset losses in the actuarial value of assets and a change in the rate of return and mortality assumptions following the 2010-2012 actuarial experience study.
- During the year ended December 31, 2012, the return on Plan assets was 11.72% on a market value basis net of all expenses, as compared to the 7.75% assumption. This resulted in a market value gain on investments of \$77,011,805. The Actuarial Value of Assets recognizes 20% of the difference between the expected actuarial value of assets and the market value of assets (MVA). The market value gains from this year were offset by the recognition of the final one-fifth of the 2008 investment loss (approximately \$170 million.) This method of smoothing the asset gains and losses returned -0.20% on the smoothed value of assets, an actuarial asset loss of \$174,499,910.

The System experienced a gain on the actuarial liability of \$29,597,024. Combining the liability gain and the asset loss, the System experienced a total loss of \$155,844,995.

- Overall participant membership decreased compared to last year. There were 479 new hires and rehires during 2012 and the total active population increased. Total payroll increased 0.98% from \$ 362,350,501 to \$365,892,023.
- The Actuarial Experience Study as of December 31, 2012 recommended significant contribution increases due to improving mortality rates and reducing the expected return on System assets. The County requested, and the Retirement Board agreed, that

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employer contribution rates will increase by at least 2.97% per year (plus interest on any contribution shortfall from the full employer rates) in 2015 and 2016 to phase in the impact of the changes in assumptions recommended in the Experience Study and adopted by the Board. The schedule of required employer contributions is shown in Table I-2 on the next page. This phase in of rate increases is consistent with model practice specified by the California Actuarial Advisory Panel (CAAP).

Below we present Table I-1 which 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.

TABLE I-1 Summary of Principal Plan Results			
	January 1, 2012	January 1, 2013	% Change
<u>Participant Counts</u>			
Active Participants	5,254	5,295	0.78%
Participants Receiving a Benefit	4,685	4,897	4.53%
Terminated Vested Participants	919	895	-2.61%
Terminated Non-Vested Participants	499	505	1.20%
Total	11,357	11,592	2.07%
Annual Pay of Active Members	\$ 362,350,501	\$ 365,892,023	0.98%
<u>Assets and Liabilities</u>			
Actuarial Liability (AL)	\$ 3,048,321,356	\$ 3,353,294,212	10.00%
Actuarial Value of Assets (AVA)	2,130,052,649	2,125,700,227	-0.20%
Unfunded Actuarial Liability (UAL)	\$ 918,268,707	\$ 1,227,593,985	33.69%
Funded Ratio (AVA)	69.9%	63.4%	-9.28%
Funded Ratio (MVA)	63.0%	64.1%	1.67%
<u>Contributions as a Percentage of Payroll</u>			
Normal Cost Rate	17.88%	18.07%	0.19%
Unfunded Actuarial Liability Rate	17.25%	23.12%	5.87%
Administrative Expense	0.00%	0.94%	0.94%
Total Contribution Rate	35.12%	42.13%	7.01%

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TABLE I-2
Development of Phased Employer Contributions

Calendar Year	Full Contribution	Phased Contribution	Interest	Total Phased
2014	42.15%	36.19%	0.45%	36.64%
Projected 2015	42.30%	39.16%	0.68%	39.84%
Projected 2016	42.08%	42.13%	0.68%	42.81%
Projected 2017	42.15%	42.91%	0.00%	42.82%

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EXECUTIVE SUMMARY**

C. Changes in Plan Cost

Table I-3 below summarizes the impact of actuarial experience and changes in benefits on Plan cost.

TABLE I-3 Summary of Changes in Plan Cost from Prior Review		
	Employer Cost	Employer Contribution Rate (% Payroll)
<u>January 1, 2012</u>	\$ 125,187,685	35.12%
Change in Cost Due to:		
Demographic Experience	(1,608,353)	(0.36%)
Salary Experience	(4,153,738)	(0.70%)
New Entrants to the Plan	4,701,677	0.12%
Decrease in Payroll for Amortization of Unfunded Actuarial Liabilities	-	0.33%
Asset Experience	14,426,576	4.02%
Impact of Rolling 20-Year Amortization	(1,530,871)	(0.43%)
Actuarial Systems Change	1,919,072	0.22%
Reserve Changes	397,818	0.11%
Increase Cost-Sharing	(8,035,202)	(2.24%)
<u>Total Cost as of January 1, 2013 before Changes</u>	\$ 131,304,663	36.19%
Demographic Assumption Changes	14,570,261	4.03%
Economic Assumption Changes	8,492,090	2.35%
Employee Contribution Rate Changes due to Assumption Changes	(1,581,441)	(0.44%)
<u>Total Cost as of January 1, 2013 after Changes</u>	\$ 152,785,573	42.13%

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

- Demographic experience was favorable.

The demographic experience of the Plan – rates of retirement, death, disability, and termination – was better than predicted by the actuarial assumptions in aggregate, causing a small decrease in cost.

- Pay increases were below expectations.

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Increases in pay among active members during 2012 were below those anticipated by the actuarial assumptions. As a result, actuarial liabilities increased less than expected, resulting in an actuarial gain, decreasing the employer contribution rate by 0.70% of payroll.

- New members entered the Plan.

During 2012, there were 479 newly hired or rehired members entering the Plan to replace departing members. Recent new hires have a similar Plan normal cost as a percentage of payroll when compared to current members, but they increase the payroll on which contributions are based. Due to the new hires, the employer contribution rate increased by 0.12% of payroll. The addition of these new members increased member payroll by \$24 million, and increased the Plan cost by about \$ 4.7 million.

- Payroll used to amortize unfunded liabilities was lower than expected.

Total member payroll was less than the expected amount by about \$7 million. As a result, unfunded actuarial accrued liabilities were amortized over a smaller payroll base, and the employer contribution rate increased by 0.33% of pay.

Overall, the combined demographic and salary experience was closely in line with expectations, for a net decrease in cost of about 0.6% of pay.

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

The assets of the Plan returned 11.72% (net of expenses) on a market basis, higher than the assumed rate of 7.75%. Under the actuarial asset smoothing policy, 20% of this gain is recognized in the current year, resulting in a recognized gain of approximately \$77 million for 2012. However, as noted above, this was offset by nearly \$170 million for the final year of the five-year recognition period for half of the 2008 investment losses.

- Amortization under the Plan's Funding Policy caused a decrease in costs.

In 2009, the funding policies were revised as follows:

1. Half of the actuarial loss experienced in 2008 was deemed to be an Extraordinary Actuarial Loss. Thus 50% of the loss is being separately amortized, as a level percentage of pay, over a closed 30 year period. Currently, 26 years remain in this closed period.
2. The remaining Unfunded Actuarial Liability (UAL) is amortized, as a level percentage of pay, over a 20 year period, which will remain an open period amortization until January 1, 2014, when it will be decreased by one year in each valuation report until a 12 year amortization period is reached.

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The funding policy above was reflected in the 2009 valuation for the first time, and continues to be followed for this valuation. The impact of using a rolling 20 year amortization, as opposed to a closed period which would entail 19 years remaining as of January 1, 2013, was a decrease in Plan costs of about 0.43% of pay.

- There was a change in actuarial systems.

The January 1, 2013 actuarial valuation was prepared using Cheiron's valuation system. Results were replicated for the January 1, 2012 valuation prior to performing the January 1, 2013 valuation. This system change increased Plan costs by about 0.22% of pay.

- The way certain reserves were valued was changed.

Beginning with the January 1, 2013 valuation, the Board decided to include the liabilities and Special Reserves for certain benefits in this valuation. These benefits are the \$5,000 lump sum death benefit, the Purchasing Power Protection Benefit, and the Pre-April 1, 1982 Settlement. Inclusion of these benefits and their associated reserves increased cost by less than \$400,000, or 0.11% of pay.

- Employee cost-sharing was recognized.

The January 1, 2012 valuation report did not reflect additional cost-sharing member contributions agreed to by some bargaining units. The January 1, 2013 valuation has taken cost-sharing for all bargaining units agreed to in 2012 into account. The increase in employee contributions decreased employer cost by 2.24% of pay.

Changes were made to assumptions as a result of an actuarial experience study covering the period from January 1, 2010 to December 31, 2012.

- Demographic assumptions were changed.

In general, Plan members are living longer than they used to. Consequently, mortality rates were changed to Retired Pensioners (RP) 2000 Combined Healthy Generational Mortality Tables, projected using Scale BB, set forward eight years for disabled members. Minor changes were made to termination, disability and retirement rates. Changes to the expected deferral age for vested terminations and transfers were also made. The demographic assumption changes increased Plan cost by 4.03%, principally due to the longer projected lifespans of Plan members.

- Economic assumptions were changed.

Projections of inflation, both from forecasters and as expressed in the prices of inflation-sensitive investments, remain low, generally below 3%. As a result, the inflation assumption was reduced from 3.25% to 3.00%. Accordingly, the assumed cost of living

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adjustment (COLA) for members drawing benefits was lowered from 2.70% to 2.60%, and the base wage growth rate dropped from 3.50% to 3.25%. The prior valuation's real return assumption of 4.50% was retained, lowering the assumed nominal return rate from 7.75% to 7.50%.

Administrative expenses are no longer used to reduce the discount rates, but are instead included in the Plan cost as a separate line item. Administrative expenses are expected to be about \$4.0 million for 2013. The Employer's portion of the administrative expenses is expected to be about \$3.5 million.

The changes in economic assumptions, including administrative expenses, increased Plan cost by 2.35% of pay.

- Employee contribution rates were changed.

The contribution rates for employees of SJCERA changed as a result of the previously mentioned demographic and economic assumption changes. The employee contribution rates increased, decreasing Plan cost by 0.44%.

The total impact on employer Plan cost due to assumption changes is an increase of 5.94%.

Table I-4 below shows the ratio of assets to active member payroll for SJCERA.

Active Member Payroll	365,892,022
Assets (Market Value Net of Non-Valuation Reserves)	2,149,351,603
Ratio of Assets to Payroll	5.87
Ratio with 100% Funding	9.16

One of the most important measures of a plan's risk is the ratio of plan assets to payroll. The table above shows SJCERA's assets as a percentage of active member payroll. This ratio indicates the sensitivity of the plan to the returns earned on plan assets. We note in the table that plan assets currently are nearly 6 times covered payroll for the Plan; as funding improves and the Plan reaches 100% funding, the ratio of asset to payroll will increase to over 9 times payroll, perhaps higher depending on the Plan's future demographic makeup.

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 assets are so small.

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On the other hand, consider the situation for SJCERA. Suppose SJCERA's assets lose 10% of their value in a year. Since they were assumed to earn 7.50%, there is an actuarial loss of 17.50% of plan assets. Based on the current ratio of asset to payroll (587%), that means the loss in assets is about 103% of active payroll (587% of the 17.50% loss). There is only one source of funding to make up for this loss: the employers. Consequently, barring future offsetting investment gains, the employer has to make up the asset loss in future contributions. In this example of a one year loss of 10%, this shortfall will eventually require an additional amortization payment in the vicinity of 7.5% of payroll if amortized over 20 years.

D. Historical Trends

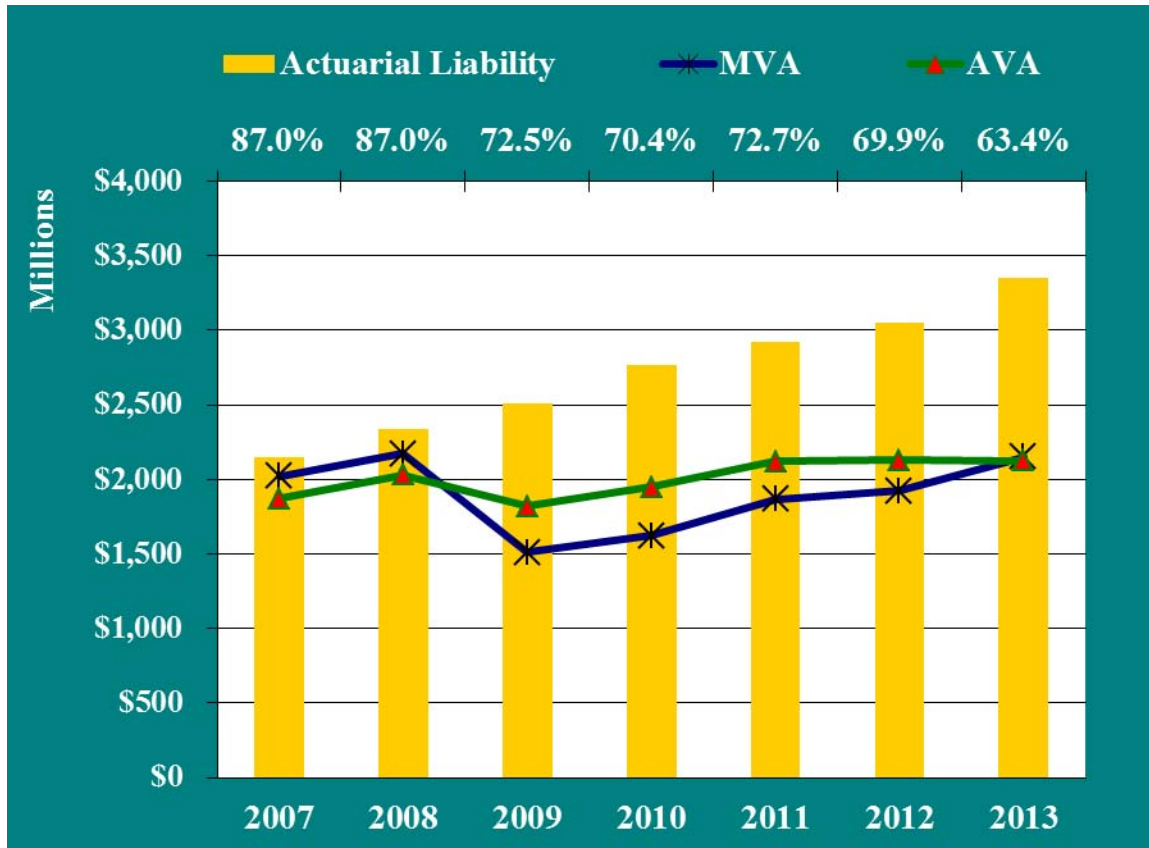
Despite the fact that for most retirement plans the greatest attention is given to the current valuation results and in particular the size of the current unfunded actuarial liability and the employer contribution, it is important to remember that each valuation is merely a snapshot in the long-term 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 the next 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 70.37% in 2010 to 63.4% as of January 1, 2013.

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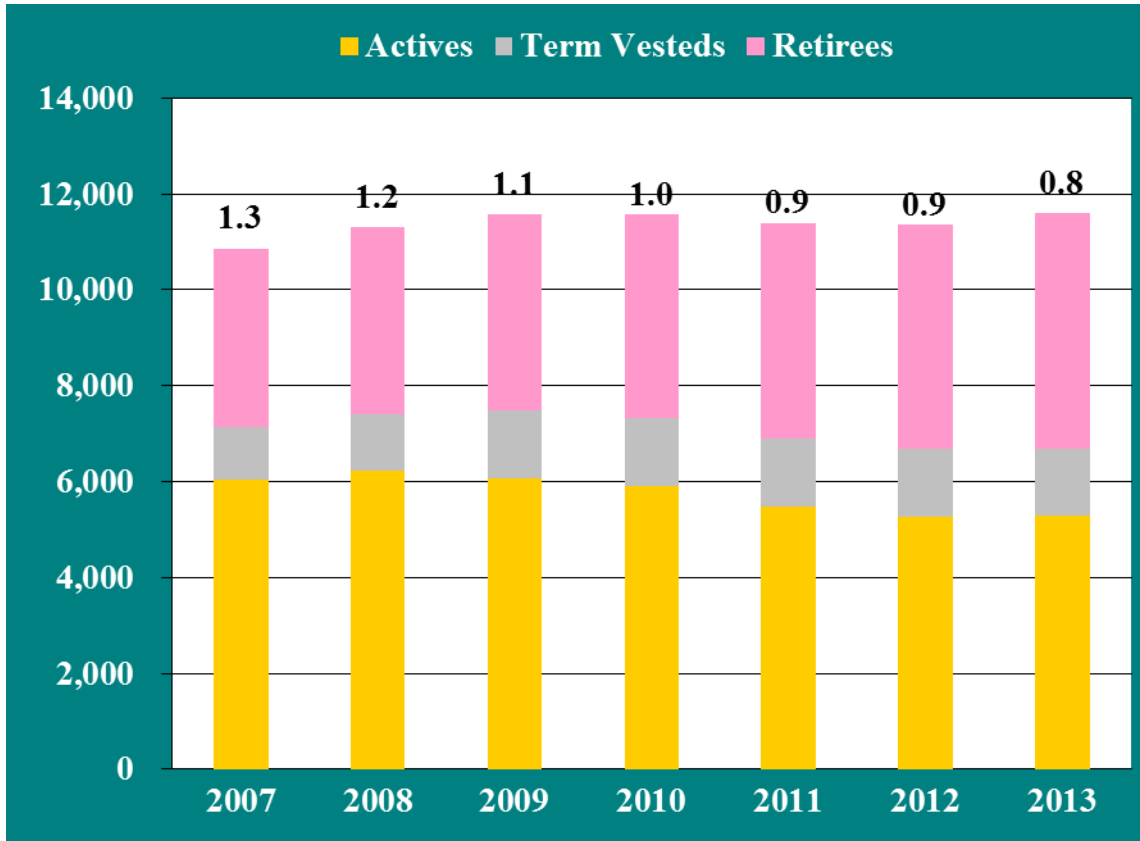
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The extraordinary asset loss of 2008 has adversely affected the funded ratio for the last five years. The 2013 funded ratio was further decreased by changes in demographic and economic assumptions following an Actuarial Experience Study.

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Participant Trends

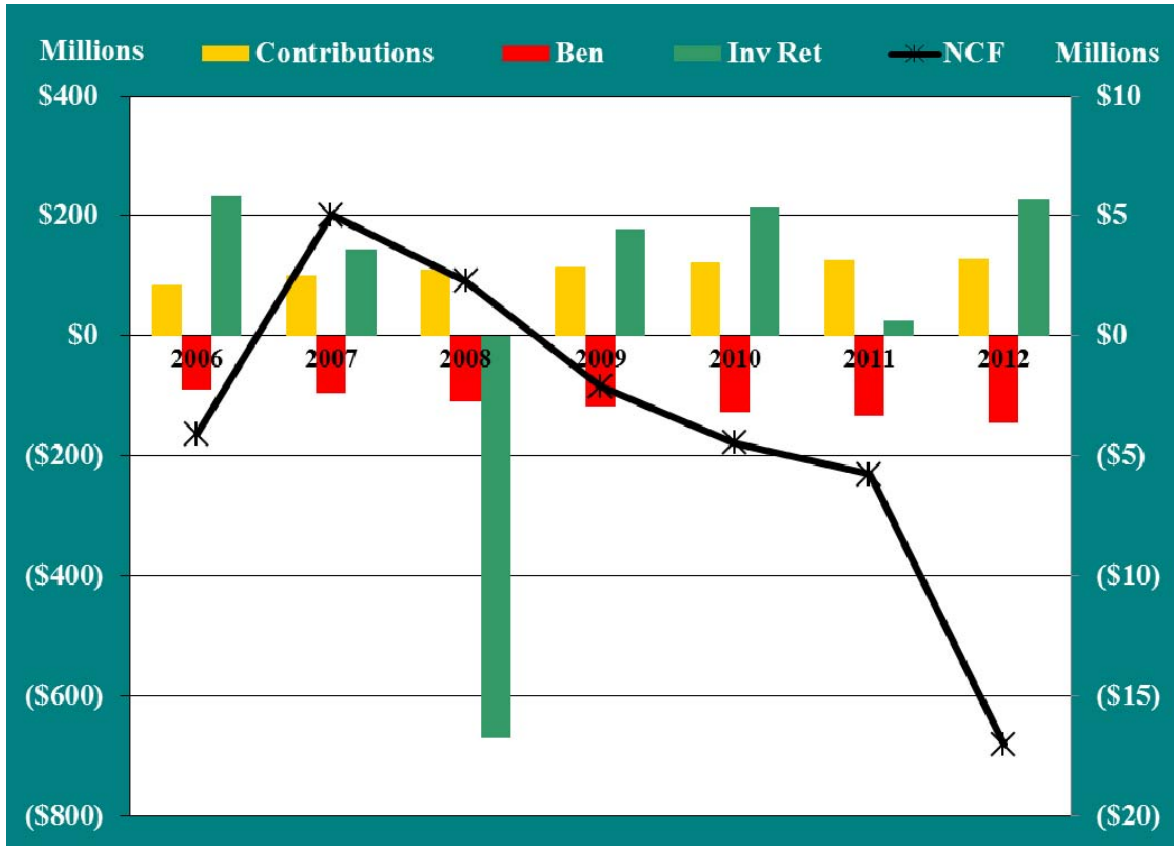


The chart above provides a measure for the maturity in the System by comparing the ratio of active members to inactive members (retirees and deferred vested participants). These ratios are given at the top of each bar. The active-to-inactive ratio has decreased significantly from 2007 to 2013, indicating the ongoing maturation of the Plan.

Cash Flows

The chart on the next page shows the System's cash flow (contribution less benefit payments). This is a critical 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.

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The contributions, benefit payments and investment returns are represented by the scale on the left. The System's net cash flow (NCF) - shown in as the black line in the chart above, and represented by the scale on the right - has been close to zero for the entire period shown. A negative cash flow magnifies the losses during a market decline hindering the System in its ability to absorb market fluctuations. The implications of a plan in negative 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.

E. Future Expected Financial Trends

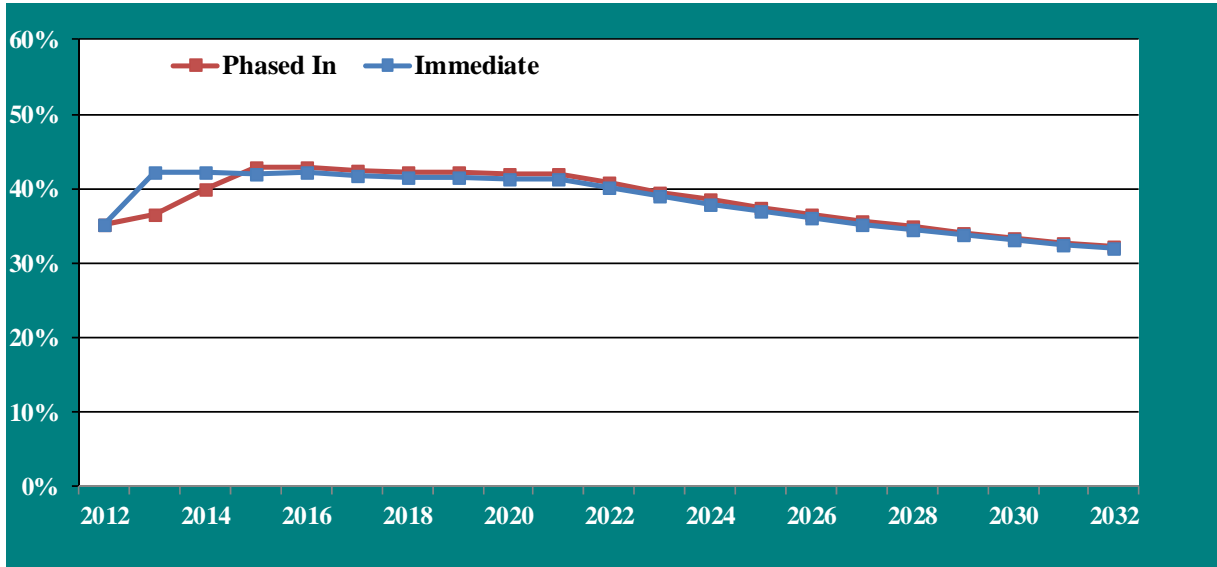
The analysis of projected financial trends is perhaps the most important component of this valuation. In this Section, we present our assessment of the implications of the January 1, 2013 valuation results in terms of benefit security (assets over liabilities). All the projections in this section are based on the current interest rate assumption of 7.50%. We have assumed future salary increases of 3.25% per year.

The following graph shows the expected employer contribution rate based on actually achieving the 7.50% assumption each year for the next 20 years, which is clearly an impossibility.

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Projection of Employer Contributions, 7.50% return each year



The contribution rate graph shows that County contributions are expected to grow to around 42% of member payroll over the next three years. They will remain at that level for 10 years, then start to decline as the unfunded actuarial liability is amortized. The dollar contribution will be approximately \$140 million in 2014, growing to around \$190 million in five years.

Note that the graph above does not forecast any actuarial gains or losses. Even relatively modest losses relative to the 7.5% assumed return could push the employer contribution rate over 50% in the next few years.

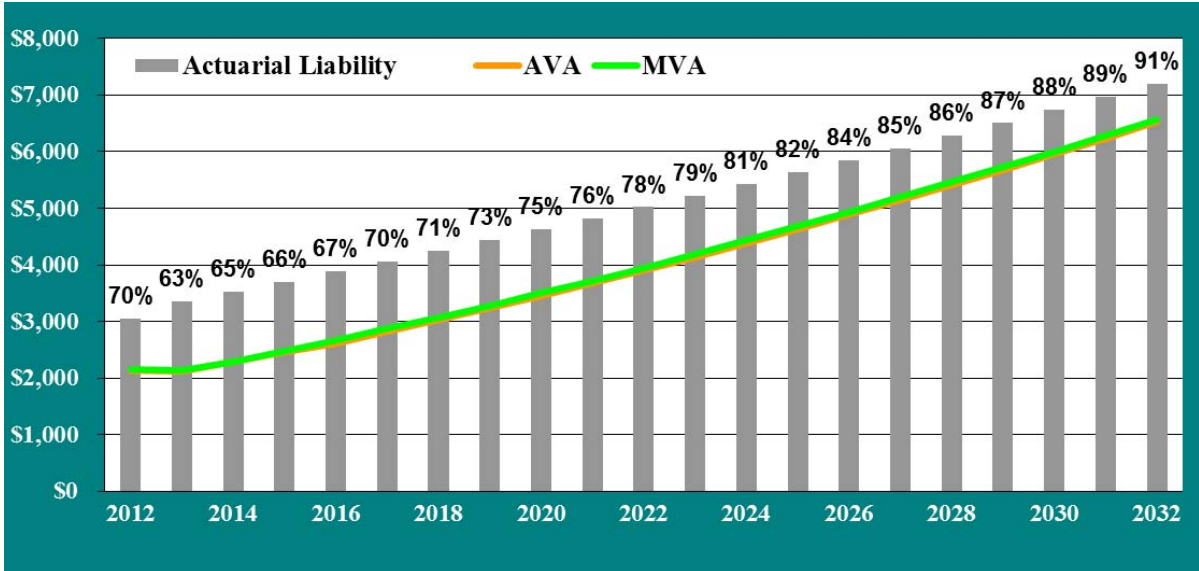
Asset and Liability Projections:

The following graph shows the projection of assets and liabilities assuming that assets will earn the 7.50% assumption each year during the projection period.

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Projection of Assets and Liabilities, 7.50% return each year



The graph shows that the projected funded status increases over the next 20 years to 91%, assuming the actuarial assumption is achieved. However, as above, it is the actual return on System assets that will determine the future funding status and contribution rate to the Fund.

SECTION II
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, 2011 and December 31, 2012;
- 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, 2013.

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 "snap-shot" or "cash-out" values which 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 II-1 on the next page discloses and compares each asset value as of December 31, 2011 and December 31, 2012.

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**SECTION II
ASSETS**

TABLE II-1		
Statement of Assets at Market Value		
December 31,		
Assets	2011	2012
Cash and Cash Equivalents	\$ 90,956,861	\$ 99,074,454
Cash Collateral-Security Lending	<u>104,691,368</u>	<u>108,957,685</u>
Total Cash and Cash Equivalents	195,648,229	208,032,139
Receivables:		
Investment Income Receivables	3,985,464	2,395,677
Contributions Receivable	4,986,684	6,661,993
Securities Sold, Not Received	595,652	2,078,343
Other Investment Income Receivable	324	53
Miscellaneous Receivables	<u>18,917</u>	<u>15,769</u>
Total Receivables	9,587,041	11,151,835
Investments, at Market Value:		
Bonds	355,287,877	528,651,982
Stocks	639,572,888	765,091,617
Real Estate	378,273,891	243,187,074
Alternative Investments	<u>478,077,009</u>	<u>517,784,460</u>
Total Investments	1,851,211,665	2,054,715,133
Other Assets:		
Prepaid Expenses	90,900	100,529
Equipment and Fixtures, Net	<u>572,057</u>	<u>487,449</u>
Total Assets	2,057,109,892	2,274,487,085
Liabilities:		
Securities Lending-Cash Collateral	104,691,368	108,957,685
Securities Purchased, Not Paid	1,454,516	3,783,034
Accrued Expenses and Other Payables	1,018,634	1,328,671
Security Lending Interest and Other Expense	0	2,236
Total Liabilities	<u>107,164,518</u>	<u>114,071,626</u>
Market Value of Assets	\$ 1,949,945,374	\$ 2,160,415,459

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**SECTION II
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 II-2 below shows the components of change in the market value of assets during 2011 and 2012.

TABLE II-2		
Changes in Market Values		
<u>Additions</u>	<u>2011</u>	<u>2012</u>
Contributions		
Employer's Contribution	112,891,701	108,062,510
Members' Contributions	14,040,773	19,900,088
Total Contributions	<u>126,932,474</u>	<u>127,962,598</u>
Net Investment Income		
Net Appreciation/(Depreciation) in		
Fair Value of Investments	4,552,554	213,075,672
Interest	29,172,659	27,314,271
Dividends	4,014,690	3,040,855
Real Estate Income, net	5,265,951	2,209,435
Investment Expenses	(14,090,669)	(15,087,444)
Miscellaneous Investment Income	8,348	14,004
Net Investment Income,		
Before Securities Lending Income	<u>28,923,533</u>	<u>230,566,793</u>
Securities Lending Income		
Earnings	365,553	412,154
Rebates	81,589	103,546
Fees	(108,444)	(128,646)
Net Securities Lending Income	<u>338,698</u>	<u>387,054</u>
Net Investment Income	<u>29,262,231</u>	<u>230,953,847</u>
Miscellaneous Income	68,107	61,657
Total Additions	<u>156,262,812</u>	<u>358,978,102</u>

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**SECTION II
ASSETS**

**TABLE II-2
Changes in Market Values (Continued)**

<u>Deductions</u>		
Benefit payments	131,069,532	143,061,687
Death Benefits	572,007	607,453
Refunds of Members' Contributions	<u>1,067,734</u>	<u>1,308,900</u>
Total Benefit Payments	132,709,273	144,978,040
Administrative & Other Expenses		
General Administrative Expenses	3,292,734	3,403,139
Actuary Fees	134,553	188,235
Fund Legal Fees	<u>321,661</u>	<u>277,947</u>
Total Administrative & Other Expenses	3,748,948	3,869,321
Transfer Between Plans	<u>(154,232)</u>	<u>(339,344)</u>
Total Deductions	136,303,989	148,508,017
Net increase (Decrease)	19,958,823	210,470,085
Net Assets Held in Trust for Pension Benefits:		
Beginning of Year	<u>1,929,986,551</u>	<u>1,949,945,374</u>
End of Year	<u><u>1,949,945,374</u></u>	<u><u>2,160,415,459</u></u>
Approximate Return	1.34%	11.72%

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**SECTION II
ASSETS**

Actuarial Value of Assets (AVA)

The actuarial value of assets represents a “smoothed” value developed by the actuary to reduce the volatile results which could develop due to short-term fluctuations in the market value of assets. For this System, the actuarial value of assets is equal to the expected actuarial value of assets, plus one-fifth of the difference between the actual market value and the expected actuarial value of assets. 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.

TABLE II-3 Development of Actuarial Value of Assets as of January 1, 2013							
	(a)	(b)	(c) Expected	(d) Actual	(e) = (d) – (c) Additional	(f) Not	(g) = (e) x (f) Unrecognized
Year	Contributions	Benefits	Return	Return	Earnings	Recognized	Earnings
2009	115,020,830	117,115,895	152,687,874	178,491,823	25,803,949	20%	5,160,790
2010	121,911,631	126,364,628	134,414,379	214,747,485	80,333,105	40%	32,133,242
2011	126,932,474	132,709,273	150,952,879	25,735,622	(125,217,257)	60%	(75,130,354)
2012	127,962,598	144,978,040	150,473,721	227,485,527	77,011,806	80%	61,609,445
1. Total Unrecognized Dollars							23,773,122
2. Market Value of Assets as of December 31, 2012							2,160,415,458
3. Preliminary Actuarial Value of Assets as of December 31, 2012: [(2) - (1)]							2,136,642,336
4. Corridor Limits							
a. 80% of Net Market Value							1,728,332,366
b. 120% of Net Market Value							2,592,498,550
5. Actuarial Value of Assets after Corridor							2,136,642,336
6. Ratio of Actuarial Value to Market Value [(5) ÷ (2)]							98.90%
7. Market Stabilization Designation [(2) – (5)]							23,773,122
8. Special (Non Valuation) Reserves:							
Class Action Settlement – Post 4/1/1982						11,063,855	
Contingency						0	
Undistributed Earnings Reserve						0	
Total Special Reserves							11,063,855
9. Pension Reserves at Actuarial Value (Valuation Assets): [(5) - (8)*(6)]							\$2,125,700,227

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**SECTION II
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 an appropriate measure for comparing the actual asset performance to the previous valuation's long-term 7.75% assumption.

TABLE II-4 Asset Gain/(Loss)		
	Market Value	Actuarial Value
January 1, 2012 value	\$ 1,949,945,374	\$ 2,161,303,697
County Contributions	108,062,510	108,062,510
Employee Contributions	19,900,088	19,900,088
Benefit Payments	(144,978,040)	(144,978,040)
Expected Investment Earnings (7.75%)	150,473,721	166,853,991
Expected Value December 31, 2012	\$ 2,083,403,653	\$ 2,311,142,246
Investment Gain / (Loss)	77,011,805	(174,499,910)
January 1, 2013 value	2,160,415,458	\$ 2,136,642,336
Return	11.72%	-0.20%

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**SECTION II
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 1994.

TABLE II-5			
Historical Asset Returns			
Year Ended December 31	Return on Market Value	Return on Actuarial Value	Increase in CPI*
1994	0.2%	8.2%	2.7%
1995	25.3%	21.7%	2.5%
1996	13.5%	12.2%	3.3%
1997	17.3%	13.9%	1.7%
1998	9.9%	13.3%	1.6%
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%	11.6%	2.5%
2010	12.4%	6.4%	1.5%
2011	1.3%	(1.8%)	3.0%
2012	11.7%	(0.2%)	1.7%
Compounded 15 Year Average	5.3%	6.2%	2.3%
Compounded 10 Year Average	6.0%	4.0%	2.3%
Compounded 5 Year Average	(0.2%)	0.0%	1.6%

* Based on All Urban Consumers - U.S. City Average, December Indices.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**SECTION II
ASSETS**

Reserve Balances

The following table shows the Post-1982 Settlement Reserve balances as of January 1, 2013.

TABLE II-6				
Post-1982 Settlement Reserve				
Valuation Date January 1	Number of Recipients	Benefits Payable	Reserve	Estimated Years of Payments
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	1,609	3,106,878	11,063,855	4

As of January 1, 2013 the total projected liability associated with paying the Post-82 Settlement allowances for the lifetime of the members and beneficiaries is estimated to be \$ 30,627,112 .

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**SECTION III
LIABILITIES**

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

- **Disclosure** of System liabilities at January 1, 2012 and January 1, 2013;
- Statement of **changes** in these liabilities during the year.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them.

- **Present Value of Future Benefits:** Used for measuring all future System obligations, represents the amount of money needed today to fully pay off 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 and GASB disclosures, 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 III-1 below discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of Plan assets yields, for each respective type, a **net surplus** or an **unfunded actuarial liability**.

TABLE III-1			
Liabilities/Net (Surplus)/Unfunded			
	January 1, 2012	January 1, 2013	
<u>Present Value of Future Benefits</u>			
Active Participant Benefits	\$ 1,995,128,130	\$ 2,177,849,296	
Retiree and Inactive Benefits	<u>1,696,845,325</u>	<u>1,896,085,569</u>	
Present Value of Future Benefits (PVB)	\$ 3,691,973,455	\$ 4,073,934,865	
<u>Actuarial Liability</u>			
Present Value of Future Benefits (PVB)	\$ 3,691,973,455	\$ 4,073,934,865	
Present Value of Future Normal Costs (PVFNC)	<u>643,652,099</u>	<u>720,640,653</u>	
Actuarial Liability (AL = PVB – PVFNC)	\$ 3,048,321,356	\$ 3,353,294,212	
Actuarial Value of Assets (AVA)	<u>2,130,052,649</u>	<u>2,125,700,227</u>	
Net (Surplus)/Unfunded (AL – AVA)	\$ 918,268,707	\$ 1,227,593,985	

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

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

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

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

TABLE III-2 Changes in Actuarial Liability	
Actuarial Liability at January 1, 2012	\$ 3,048,321,356
Actuarial Liability at January 1, 2013	\$ 3,353,294,212
Liability Increase (Decrease)	304,972,856
Change due to:	
Actuarial Methods (Reserve Changes)	\$ 9,860,169
Assumption Change	159,894,381
Accrual of Benefits	73,374,980
Actual Benefit Payments	(144,978,040)
Interest	236,418,390
Actuarial (Gain)/Loss	(29,597,024)

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**SECTION III
LIABILITIES**

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

1. Unfunded Actuarial Liability at Start of Year (not less than zero)	\$ 918,268,707
2. Employer Normal Cost at Start of Year	73,374,980
3. Interest on 1. and 2. to End of Year	76,852,386
4. Contributions for Prior Year	127,962,598
5. Interest on 4. to End of Year	4,866,030
6. Change in Unfunded Actuarial Liability Due to Changes in Actuarial Methods	3,694,690
7. Change in Unfunded Actuarial Liability Due to Changes in Assumptions	159,894,381
8. Change in Unfunded Actuarial Liability Due to Changes in Plan Design	0
9. Expected Unfunded Actuarial Liability at End of Year [1. + 2. + 3. - 4. - 5. + 6. + 7. + 8.]	\$ 1,099,256,516
10. Actual Unfunded Actuarial Liability at End of Year (not less than zero)	1,227,593,985
11. Actuarial Gain / (Loss) [9. - 10.] *	\$ (128,337,469)

* Demographic gains were offset by nearly \$170 million by the final year of the five-year recognition period for half of the 2008 investment losses.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**SECTION IV
CONTRIBUTIONS**

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

For this System, the actuarial funding method used to determine the normal cost and the unfunded actuarial liability is the **Entry Age Normal (EAN)** cost method. There are two primary components to the total contribution: the **normal cost rate** (employee and employer), and the **unfunded actuarial liability rate** (UAL rate).

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 unfunded actuarial liability is the difference between the EAN actuarial liability and the actuarial value of assets. The UAL rate is based on a 26-year amortization of half of the extraordinary investment loss from 2008 and a 20-year amortization of the remainder of the unfunded actuarial liability as of January 1, 2013, again assuming mid-year payment to reflect the fact that employer contributions are made throughout the year.

The tables below present the employer contributions for the System for this valuation.

TABLE IV-1			
Employer Contribution Rate			
	January 1, 2012	January 1, 2013	
Contributions as a Percentage of Payroll			
Gross Entry Age Normal Cost Rate	21.37%	24.26%	
Employee Contribution Rate	<u>3.49%</u>	<u>6.20%</u>	
Employer Entry Age Normal Cost Rate	17.88%	18.07%	
Employer Normal Cost Rate	17.88%	18.07%	
Administrative Expense	0.00%	0.93%	
Amortization Payment	<u>17.25%</u>	<u>23.12%</u>	
Employer Contribution Rate	35.12%	42.12%	
Annual Required Contribution (Employer)	\$ 125,187,685	\$	152,785,574

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**SECTION IV
CONTRIBUTIONS**

TABLE IV-2		
Development of Employer Contribution Amount		
January 1, 2013		
		% of pay
1. Normal Cost at Middle of Year		
a. Entry Age Normal Cost	\$ 62,433,238	17.43%
b. Interest to Middle of Year	<u>2,341,246</u>	
c. Total Normal Cost (a) + (b)	\$ 64,774,484	18.07%
2. Amortization of Unfunded Liability		
a. Actuarial Liability	\$ 3,353,294,212	
b. Actuarial Value of Assets	<u>2,125,700,227</u>	
c. Unfunded Liability (a) – (b)	\$ 1,227,593,985	
d. Amortization of Unfunded Liability	84,576,479	23.12%
3. Administrative Expense	\$ 3,476,936	0.93%
4. Annual Required Contribution	\$ 152,827,899	42.12%
(1c) + (2d) + (3)		

TABLE IV-3						
Development of Amortization Payment						
For Fiscal Year 2013						
Type of Base	Date Established	Initial Amount	Initial Amortization Years	1/1/2013 Outstanding Balance	Remaining Amortization Years	Amortization Amount
Charges						
1. 2008 Extraordinary Actuarial Loss	1/1/2009	\$ 424,264,899	30	\$ 451,865,099	26	\$ 28,059,471
2. Remaining UAL	1/1/2013	775,728,886	20	775,728,886	20	56,517,008
				\$ 1,227,593,985		\$ 84,576,479

SECTION V
ACCOUNTING STATEMENT INFORMATION

Statement No. 25 of the Governmental Accounting Standards Board (GASB 25) establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

The GASB adopted Statement Nos. 67 and 68 which replaces GASB Statement Nos. 25 and 27. GASB 67 is effective for periods beginning after June 15, 2013 (first effective January 1, 2014 for the Plan) and GASB 68 is effective for fiscal years beginning after June 15, 2014 (first effective for the fiscal year July 1, 2014 to June 30, 2015 for the Employer). The following is a brief summary of some of these changes:

- The liabilities would need to be based on the entry age normal cost method (which is the method the System is currently using), and the discount rate assumption might need to be reduced if projected contributions plus assets are not able to cover projected pension benefits.
- The market value of assets would be compared to the liabilities, instead of the smoothed actuarial value of assets, to determine the unfunded liability.
- Unfunded liabilities would be reported directly on the employer's balance sheet.
- The Annual Required Contribution (ARC) would be replaced with Pension Expense which equals: Normal Cost + Interest Cost - Expected Asset Earnings + Amortization of changes in total pension liability + smoothing of asset returns.
- Amortization periods of changes in total pension liability would vary depending upon the basis for the gain or loss. These periods would be immediate for plan changes and expected working lifetime of both active and inactive members for other total pension liability changes.

In accordance with GASB 25, we have prepared the following disclosures:

Schedule of Funding Progress

The schedule of funding progress compares the assets used for funding purposes to the comparable liabilities to determine how well the System is funded and how this status has changed over the past several years.

The GASB 25 Actuarial Accrued Liability is the same as the Actuarial Liability calculated for funding purposes. The GASB 25 liability is compared to the actuarial value of assets to determine the funding ratio.

Schedule of Employer Contributions

The schedule of employer contributions shows whether the employer has made contributions that are consistent with an actuarial method of funding the benefits to be provided consistent with the parameters established by GASB 25.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Solvency Test

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 Accrued Liability under GASB 25 is determined assuming that the System is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.5%.

We have also provided a *Note to Required Supplementary Information* for the financial statements.

Valuation Date January 1,	Actuarial Value of Assets	Actuarial Liability (AL)	Funded Ratio	Unfunded AL (UAL)	Covered Payroll	UAL as a Percentage of Payroll
2013	\$ 2,125,700	\$ 3,353,294	63.4%	\$ 1,227,594	\$365,892	335.5%
2012	2,130,053	3,048,321	69.9%	918,269	356,419	257.6%
2011	2,120,384	2,917,688	72.7%	797,304	367,344	217.0%
2010	1,949,011	2,769,612	70.4%	820,600	385,442	212.9%
2009	1,821,357	2,510,925	72.5%	689,568	377,559	182.6%
2008	2,029,949	2,334,521	87.0%	304,572	367,361	82.9%
2007	1,869,717	2,149,938	87.0%	280,221	340,828	82.2%
2006	1,727,033	1,935,818	89.2%	208,785	309,692	67.4%
2005	1,614,979	1,769,507	91.3%	154,528	296,473	52.1%
2004	1,531,288	1,621,060	94.5%	89,772	286,429	31.3%
2003	1,448,905	1,418,209	102.2%	(30,696)	259,812	-11.8%
2002	1,357,409	1,266,747	107.2%	(90,662)	243,327	-37.3%
2001	1,182,914	1,091,830	108.3%	(91,084)	215,363	-42.3%

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-2				
Schedule of Employer Contributions				
(Dollars in Thousands)				
Annual				
Year Ending December 31,	Required Contribution	Actual Contribution	Percentage Contributed	
2012	\$ 108,063	\$ 108,063	100.0%	
2011	112,892	112,892	100.0%	
2010	104,452	104,452	100.0%	
2009	97,806	97,806	100.0%	
2008	94,163	94,163	100.0%	
2007	85,869	85,869	100.0%	
2006	73,612	73,612	100.0%	
2005	62,509	62,509	100.0%	
2004	42,688	42,688	100.0%	
2003	34,784	34,784	100.0%	
2002	25,016	25,016	100.0%	
2001	22,642	22,642	100.0%	
2000	17,798	17,798	100.0%	

Table V-3							
Solvency Test							
Aggregate Actuarial Liabilities for							
Valuation Date January 1,	Active Member Contributions (1)	Retirees & Beneficiaries (2)	Active Members* (3)	Actuarial Value of Assets	Portion of Actuarial Liabilities Covered by		
					(1)	(2)	(3)
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%
2005	140,800,000	805,878,000	822,829,000	1,614,979,000	100%	100%	81%
2004	129,606,000	726,382,000	739,749,000	1,531,288,000	100%	100%	91%
2003	137,209,000	643,984,000	637,016,000	1,448,905,000	100%	100%	100%
2002	132,004,000	541,321,000	593,423,000	1,357,409,000	100%	100%	100%
2001	123,941,000	486,532,000	481,357,000	1,182,914,000	100%	100%	100%

* Includes terminated vested members.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-4
Note To Required Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation date	January 1, 2013
Actuarial cost method	Entry Age Normal
Amortization method	Level percentage of payroll with separate amortization periods for Extraordinary Actuarial Gains or Losses
Remaining amortization period	26 years for 2008 Extraordinary Loss, 20 years for remaining UAL. (22 year Single Equivalent Period)
Asset valuation method	Actuarial value: Excess earnings smoothed over five years, 80%/120% corridor around market value
Actuarial assumptions:	
Investment rate of return	7.50%
Projected salary increases*	3.25%, plus service-based rates
* includes inflation at	3.00%
Cost of living adjustments	2.60% per year assumed

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**APPENDIX A
MEMBERSHIP INFORMATION**

The data for this valuation was provided by the San Joaquin County staff as of January 1, 2013. Cheiron did not audit any of the data; however, it was reviewed to ensure that it complies with generally accepted actuarial standards.

Summary of Participant Data as of January 1, 2013

	General	Safety	Total
Active Participants			
Number	4,492	803	5,295
Average Age	47.65	41.19	46.67
Average Benefit Service	11.99	11.81	11.96
Average Vesting Service	12.14	12.09	12.13
Average Pay	\$67,120	\$80,183	\$69,101
Service Retired			
Number	3,113	514	3,627
Average Age	69.72	64.49	68.98
Average Annual Base Benefit	\$22,192	\$45,837	\$25,543
Average Annual Total Benefit	\$27,530	\$56,751	\$31,671
Beneficiaries			
Number	541	147	688
Average Age	73.33	66.69	71.91
Average Annual Base Benefit	\$9,735	\$17,940	\$11,488
Average Annual Total Benefit	\$16,309	\$29,971	\$19,228
Duty Disabled			
Number	222	182	404
Average Age	62.19	59.70	61.07
Average Annual Base Benefit	\$17,317	\$33,270	\$24,504
Average Annual Total Benefit	\$22,961	\$44,646	\$32,730
Non-Duty Disabled			
Number	165	13	178
Average Age	63.78	64.77	63.85
Average Annual Base Benefit	\$10,961	\$15,069	\$11,261
Average Annual Total Benefit	\$14,612	\$23,776	\$15,282
Total Receiving Benefits			
Number	4,041	856	4,897
Average Age	69.55	63.85	68.55
Average Annual Base Benefit	\$19,798	\$37,907	\$22,963
Average Annual Total Benefit	\$25,249	\$49,077	\$29,414

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**APPENDIX A
MEMBERSHIP INFORMATION**

Summary of Participant Data as of January 1, 2013

	General	Safety	Total
Deferred Vested			
Number	416	42	458
Average Age	48.85	43.57	48.37
Average Service	8.43	6.25	8.23
Transfers and DROs			
Number	348	89	437
Average Age	49.82	43.26	48.49
Average Service	5.79	5.05	5.64
Funds on Account			
Number	478	27	505
Average Age	44.33	35.41	43.86
Average Service	1.73	1.52	1.71
Total Inactive			
Number	1,242	158	1,400
Average Age	47.39	42.00	46.78
Average Service	5.11	4.77	5.07

Data pertaining to active and inactive Members and their beneficiaries as of the valuation date was supplied by the Plan Administrator on electronic media. As is usual in studies of this type, Member data was neither verified nor audited.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

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
January 1, 2012	4,441	362	472	423	163	218	2,946	544	9,569
New Entrants	402	0	0	0	0	0	0	0	402
Rehires	40	(3)	(11)	(8)	0	0	0	0	18
Duty Disabilities	(10)	0	0	0	0	12	0	0	2
Non-Duty Disabilities	(4)	0	0	(1)	5	0	0	0	0
Retirements	(190)	(27)	(2)	(30)	0	0	247	2	0
Retirements from Safety with General Service	0	0	0	0	0	0	8	0	8
Vested Terminations	(41)	0	0	41	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	(3)	(3)	(18)	24	0
Died, Without Beneficiary, and Other Terminations	(44)	0	42	0	(5)	(6)	(64)	0	(77)
Transfers	(19)	13	0	(1)	0	0	0	0	(7)
Redeposits – AB 2766	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(83)	(2)	(24)	(7)	0	0	0	0	(116)
Beneficiary Deaths	0	0	0	0	0	0	0	(29)	(29)
Domestic Relations Orders	0	6	0	0	0	0	0	1	7
Data Corrections	0	(1)	1	(1)	5	1	(6)	(1)	(2)
January 1, 2013	4,492	348	478	416	165	222	3,113	541	9,775

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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Changes in Plan Membership: Safety

	Actives	Transfers/ DROS	Non-Vested Terminations	Vested Terminations	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
January 1, 2012	813	94	27	40	13	177	485	139	1,788
New Entrants	30	0	0	0	0	0	0	0	30
Rehires	7	(1)	(2)	(1)	0	0	0	0	3
Duty Disabilities	(4)	0	0	(1)	0	5	0	0	0
Non-Duty Disabilities	0	0	0	0	0	0	0	0	0
Retirements	(37)	(4)	(1)	(1)	0	0	41	2	0
Retirements from Safety with General Service	0	0	0	0	0	1	3	0	4
Vested Terminations	(3)	0	0	3	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	0	(1)	(8)	9	0
Died, Without Beneficiary, and Other Terminations	(6)	0	5	0	0	(2)	(5)	0	(8)
Transfers	7	1	(1)	0	0	0	0	0	7
Redeposits – AB 2766	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(4)	(2)	(1)	0	0	0	0	0	(7)
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	0	0	0	2	0	2	(2)	0	2
January 1, 2013	803	89	27	42	13	182	514	147	1,817

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**APPENDIX A
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Changes in Plan Membership: All Groups

	Actives	Transfers/ DROS	Non-Vested Terminations	Vested Terminations	Non-Duty Disabled	Duty Disabled	Retired	Beneficiaries	Total
January 1, 2012	5,254	456	499	463	176	395	3431	683	11,357
New Entrants	432	0	0	0	0	0	0	0	432
Rehires	47	(4)	(13)	(9)	0	0	0	0	21
Duty Disabilities	(14)	0	0	(1)	0	17	0	0	2
Non-Duty Disabilities	(4)	0	0	(1)	5	0	0	0	0
Retirements	(227)	(31)	(3)	(31)	0	0	288	4	0
Dual Service Retirements	0	0	0	0	0	1	11	0	12
Vested Terminations	(44)	0	0	44	0	0	0	0	0
Died, With Beneficiaries' Benefit Payable	0	0	0	0	(3)	(4)	(26)	33	0
Died, Without Beneficiary, and Other Terminations	(50)	0	47	0	(5)	(8)	(69)	0	(85)
Transfers	(12)	14	(1)	(1)	0	0	0	0	0
Redeposits – AB 2766	0	0	0	0	0	0	0	0	0
Withdrawals Paid	(87)	(4)	(25)	(7)	0	0	0	0	(123)
Beneficiary Deaths	0	0	0	0	0	0	0	(33)	(33)
Domestic Relations Orders	0	7	0	0	0	0	0	2	9
Data Corrections	0	(1)	1	1	5	3	(8)	(1)	0
January 1, 2013	5,295	437	505	458	178	404	3627	688	11,592

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**APPENDIX A
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Active Member Data by Plan

Valuation at Year End	Plan Type	Member Count	Annual Payroll	Average Annual Salary	Average Salary Increase
2006	General	5,234	\$288,178,806	\$55,059	18.22%
	Safety	820	\$56,293,820	\$68,651	15.52%
	Total	6,054	\$344,472,626	\$56,900	17.68%
2007	General	5,353	\$308,773,122	\$57,682	4.76%
	Safety	871	\$62,988,014	\$72,317	5.34%
	Total	6,224	\$371,761,136	\$59,730	4.97%
2008	General	5,180	\$315,202,954	\$60,850	5.49%
	Safety	900	\$67,127,759	\$74,586	3.14%
	Total	6,080	\$382,330,713	\$62,883	5.28%
2009	General	4,990	\$320,526,792	\$64,234	5.56%
	Safety	925	\$70,801,157	\$76,542	2.62%
	Total	5,915	\$391,327,949	\$66,159	5.21%
2010	General	4,643	\$308,183,424	\$66,376	3.33%
	Safety	830	\$64,817,396	\$78,093	2.03%
	Total	5,473	\$373,000,820	\$68,153	3.01%
2011	General	4,441	\$298,308,687	\$67,172	1.20%
	Safety	813	\$64,041,814	\$78,772	0.87%
	Total	5,254	\$362,350,501	\$68,967	1.19%
2012	General	4,492	\$301,505,122	\$67,120	-0.08%
	Safety	803	\$64,386,900	\$80,183	1.79%
	Total	5,295	\$365,892,023	\$69,101	0.19%

Payroll figures represent active member's annualized pay rates on December 31. Prior to 2006, payroll was not annualized, which explains the large apparent increases in average salary from 2005 to 2006.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

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
2006	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%
	Total	221	49	113	3,739	83,637,900	22,369	3.45%
2007	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%
	Total	237	37	107	3,906	92,610,060	23,710	5.99%
2008	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%
	Total	253	40	101	4,098	102,063,875	24,906	5.04%
2009	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%
	Total	231	38	115	4,252	111,564,034	26,238	5.35%
2010	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%
	Total	307	40	110	4,489	122,285,816	27,241	3.82%
2011	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%
	Total	272	46	122	4,685	131,037,227	27,970	2.68%
2012	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%
	Total	330	39	155	4,897	144,034,172	29,413	5.16%

Payroll figures represent year end monthly retirement benefits annualized and exclude Post-Employment Healthcare benefit and benefits under the Class Action Settlement.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

**APPENDIX A
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Retirants and Beneficiaries Added to and Removed from Retiree Payroll

Fiscal Year	Beginning of Year	Added During Year	Allowances Added (in 000s) ¹	Removed During Year	Allowances Removed	End of Year	Annual Retirement Payroll (in 000s)	Average Allowance Percentage Increase	Average Annual Allowance
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

[1] 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, 2013

**APPENDIX A
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Schedule of Average Monthly Benefit Payments

Retirement Effective Date	Number of Years of Service Credit						
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Over
1/2/11 to 1/1/12							
Retirants							
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
Survivors/QDROs							
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
1/2/12 to 1/1/13							
Retirants							
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
Survivors/QDROs							
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, 2013**

**APPENDIX A
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**Age / Service Distribution Of General Active Participants
As of January 1, 2013**

Age	Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up		
Under 25	15	5	0	0	0	0	0	0	0	0	0	20
25 to 29	28	76	55	1	0	0	0	0	0	0	0	160
30 to 34	56	105	219	48	0	0	0	0	0	0	0	428
35 to 39	30	88	230	155	20	1	0	0	0	0	0	524
40 to 44	41	65	204	231	67	27	0	0	0	0	0	635
45 to 49	19	72	144	175	95	85	29	1	0	0	0	620
50 to 54	15	52	137	197	108	110	78	29	0	0	0	726
55 to 59	19	41	108	184	105	122	85	68	21	0	0	753
60 to 64	5	28	70	110	60	63	60	34	21	5	5	456
65 to 69	0	13	28	39	25	18	10	4	3	4	4	144
70 & up	1	0	4	9	5	3	2	1	1	0	0	26
Total	229	545	1,199	1,149	485	429	264	137	46	9	9	4,492

Average Age = 47.7

Average Service = 12.1

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**APPENDIX A
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**Age / Service Distribution Of Safety Active Participants
As of January 1, 2013**

Age	Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	1	5	0	0	0	0	0	0	0	0	6
25 to 29	10	25	37	0	0	0	0	0	0	0	72
30 to 34	6	20	89	30	0	0	0	0	0	0	145
35 to 39	1	14	54	71	5	0	0	0	0	0	145
40 to 44	0	7	30	69	45	6	0	0	0	0	157
45 to 49	0	1	13	29	24	27	15	1	0	0	110
50 to 54	0	4	7	19	10	29	26	2	0	0	97
55 to 59	1	2	3	9	6	8	12	2	1	0	44
60 to 64	0	0	4	9	3	5	3	0	0	0	24
65 to 69	0	0	1	1	1	0	0	0	0	0	3
70 & up	0	0	0	0	0	0	0	0	0	0	0
Total	19	78	238	237	94	75	56	5	1	0	803

Average Age = 41.2

Average Service = 12.1

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**APPENDIX A
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**Payroll Distribution Of General Active Participants
As of January 1, 2013**

Age	Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	44,208	37,906	0	0	0	0	0	0	0	0	42,633
25 to 29	48,524	52,755	48,555	41,267	0	0	0	0	0	0	50,499
30 to 34	59,575	61,603	59,878	55,480	0	0	0	0	0	0	59,768
35 to 39	50,316	76,645	65,582	60,420	73,170	55,952	0	0	0	0	65,310
40 to 44	60,679	74,940	67,827	65,941	65,813	60,285	0	0	0	0	66,874
45 to 49	43,060	81,703	62,982	66,082	68,499	73,275	73,363	69,670	0	0	68,173
50 to 54	43,670	61,038	67,907	63,455	64,020	76,554	73,918	82,207	0	0	67,655
55 to 59	50,946	87,411	63,624	62,008	71,018	76,483	82,574	77,340	59,687	0	70,587
60 to 64	58,702	82,110	72,386	61,186	70,845	70,704	79,398	95,871	82,994	79,404	72,935
65 to 69	0	134,812	67,574	68,032	64,043	63,890	88,329	147,895	79,785	74,414	76,811
70 & up	30,867	0	85,107	55,906	47,875	52,423	42,715	39,562	52,283	0	55,707
Total	52,930	71,514	64,427	63,240	67,716	73,253	78,199	84,697	71,477	77,186	67,120

Average Salary = \$ 67,120

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

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**Payroll Distribution Of Safety Active Participants
As of January 1, 2013**

Age	Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	55,952	59,043	0	0	0	0	0	0	0	0	58,528
25 to 29	38,074	69,740	72,697	0	0	0	0	0	0	0	66,862
30 to 34	38,293	67,477	71,956	75,078	0	0	0	0	0	0	70,591
35 to 39	55,952	63,301	69,995	80,377	74,024	0	0	0	0	0	74,474
40 to 44	0	64,119	73,997	76,014	83,997	133,557	0	0	0	0	79,585
45 to 49	0	54,810	72,261	81,708	93,177	100,182	113,709	178,753	0	0	92,630
50 to 54	0	80,529	72,355	72,066	83,776	102,889	115,522	112,712	0	0	95,344
55 to 59	80,267	96,528	78,034	77,934	79,499	84,303	84,285	113,924	271,744	0	87,983
60 to 64	0	0	80,197	76,791	74,458	80,501	171,368	0	0	0	89,662
65 to 69	0	0	60,778	84,645	86,105	0	0	0	0	0	77,176
70 & up	0	0	0	0	0	0	0	0	0	0	0
Total	42,246	67,863	72,080	77,721	85,218	100,893	111,334	126,405	271,744	0	80,183

Average Salary = \$ 80,183

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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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	0	\$0	0	\$0
45-49	0	\$0	9	\$43,577	9	\$43,577
50-54	88	\$14,177	47	\$62,950	135	\$31,157
55-59	300	\$22,530	93	\$63,138	393	\$32,140
60-64	588	\$32,434	116	\$60,238	704	\$37,015
65-69	756	\$32,592	122	\$59,784	878	\$36,370
70-74	530	\$27,869	67	\$44,166	597	\$29,698
75-79	334	\$23,309	28	\$35,524	362	\$24,254
80-84	247	\$23,360	24	\$53,741	271	\$26,051
85-89	162	\$21,908	8	\$52,787	170	\$23,361
90-94	94	\$20,299	0	\$0	94	\$20,299
95+	14	\$14,237	0	\$0	14	\$14,237
All Ages	3113	\$27,530	514	\$56,751	3627	\$31,671

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	2	\$26,333	2	\$26,333
35-39	3	\$15,369	3	\$28,745	6	\$22,057
40-44	7	\$10,074	9	\$32,779	16	\$22,846
45-49	6	\$11,632	17	\$35,179	23	\$29,036
50-54	25	\$18,431	28	\$38,923	53	\$29,257
55-59	34	\$21,146	29	\$47,791	63	\$33,411
60-64	73	\$23,514	39	\$51,072	112	\$33,110
65-69	33	\$28,814	25	\$47,277	58	\$36,772
70-74	20	\$26,737	13	\$44,028	33	\$33,548
75-79	13	\$24,854	8	\$40,673	21	\$30,880
80-84	4	\$20,491	6	\$65,758	10	\$47,651
85-89	3	\$34,475	2	\$53,217	5	\$41,972
90-94	1	\$20,579	1	\$45,317	2	\$32,948
95+	0	\$0	0	\$0	0	\$0
All Ages	222	\$22,961	182	\$44,646	404	\$32,730

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**APPENDIX A
MEMBERSHIP INFORMATION**

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
25-20	0	\$0	0	\$0	0	\$0
30-34	0	\$0	0	\$0	0	\$0
35-39	2	\$18,603	0	\$0	2	\$18,603
40-44	2	\$14,396	0	\$0	2	\$14,396
45-49	7	\$17,593	0	\$0	7	\$17,593
50-54	14	\$16,519	1	\$2,769	15	\$15,602
55-59	32	\$16,875	2	\$35,644	34	\$17,979
60-64	31	\$13,020	5	\$17,604	36	\$13,657
65-69	36	\$12,904	2	\$46,125	38	\$14,653
70-74	21	\$15,983	1	\$17,453	22	\$16,050
75-79	9	\$13,446	1	\$18,609	10	\$13,962
80-84	3	\$10,434	1	\$18,703	4	\$12,501
85-89	5	\$12,693	0	\$0	5	\$12,693
90-94	3	\$10,340	0	\$0	3	\$10,340
95+	0	\$0	0	\$0	0	\$0
All Ages	165	\$14,612	13	\$23,776	178	\$15,282

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	7	\$5,952	0	\$0	7	\$5,952
25-29	2	\$7,917	0	\$0	2	\$7,917
30-34	1	\$10,610	0	\$0	1	\$10,610
35-39	2	\$9,734	0	\$0	2	\$9,734
40-44	5	\$12,419	4	\$31,665	9	\$20,973
45-49	4	\$10,778	10	\$14,277	14	\$13,278
50-54	16	\$17,472	14	\$16,800	30	\$17,158
55-59	49	\$14,029	18	\$29,998	67	\$18,319
60-64	63	\$17,358	19	\$34,447	82	\$21,318
65-69	60	\$18,801	22	\$30,746	82	\$22,006
70-74	61	\$15,580	18	\$35,072	79	\$20,022
75-79	68	\$15,133	15	\$32,039	83	\$18,189
80-84	74	\$17,696	14	\$39,138	88	\$21,107
85-89	63	\$17,379	10	\$28,454	73	\$18,896
90-94	41	\$17,876	1	\$35,807	42	\$18,303
95+	25	\$12,989	2	\$25,033	27	\$13,881
All Ages	541	\$16,309	147	\$29,971	688	\$19,228

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
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**APPENDIX A
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Assumed Probabilities of Separation from Active Membership

Age	Non-Duty Death	Ordinary Disability	Service Retirement ¹	Duty Death	Duty Disability
General Members – Male					
20	0.0003	0.000	0.000	0.000	0.001
25	0.0003	0.001	0.000	0.000	0.001
30	0.0004	0.001	0.000	0.000	0.001
35	0.0007	0.001	0.000	0.000	0.001
40	0.0010	0.001	0.000	0.000	0.004
45	0.0014	0.002	0.000	0.000	0.004
50	0.0019	0.002	0.050	0.000	0.002
55	0.0033	0.003	0.050	0.000	0.002
60	0.0052	0.003	0.150	0.000	0.002
65	0.0082	0.004	0.300	0.000	0.002
General Members – Female					
20	0.0002	0.000	0.000	0.000	0.000
25	0.0002	0.001	0.000	0.000	0.000
30	0.0002	0.001	0.000	0.000	0.000
35	0.0004	0.001	0.000	0.000	0.001
40	0.0006	0.001	0.000	0.000	0.001
45	0.0010	0.002	0.000	0.000	0.001
50	0.0015	0.002	0.020	0.000	0.001
55	0.0023	0.003	0.040	0.000	0.002
60	0.0035	0.004	0.100	0.000	0.002
65	0.0063	0.005	0.250	0.000	0.003

¹ 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.

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APPENDIX A
MEMBERSHIP INFORMATION

Assumed Probabilities of Separation from Active Membership

Age	Non-Duty Death	Ordinary Disability	Service Retirement ¹	Duty Death	Duty Disability
Safety Members – Male					
20	0.0002	0.000	0.000	0.0002	0.000
25	0.0002	0.000	0.000	0.0002	0.001
30	0.0002	0.000	0.000	0.0002	0.001
35	0.0004	0.000	0.000	0.0002	0.002
40	0.0006	0.000	0.000	0.0003	0.004
45	0.0009	0.001	0.050	0.0004	0.008
50	0.0014	0.001	0.150	0.0005	0.014
55	0.0026	0.002	0.300	0.0007	0.023
Safety Members – Female					
20	0.0001	0.000	0.000	0.0001	0.000
25	0.0001	0.000	0.000	0.0001	0.001
30	0.0001	0.000	0.000	0.0001	0.001
35	0.0002	0.000	0.000	0.0002	0.002
40	0.0003	0.000	0.000	0.0003	0.004
45	0.0006	0.001	0.050	0.0004	0.008
50	0.0010	0.003	0.150	0.0005	0.014
55	0.0017	0.005	0.300	0.0006	0.023

¹ Lower rates assumed for members with less than 20 years of service.

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APPENDIX A
MEMBERSHIP INFORMATION

Salary Increase, Termination and Withdrawal Assumptions

Years of Service	Salary Increase: General	Salary Increase: Safety	Withdrawal: General	Withdrawal: Safety	Termination: General	Termination: Safety
0	0.0724	0.0824	0.064	0.018	0.064	0.070
1	0.0724	0.0824	0.050	0.016	0.050	0.062
2	0.0724	0.0824	0.050	0.012	0.050	0.046
3	0.0724	0.0824	0.039	0.006	0.039	0.022
4	0.0724	0.0824	0.024	0.006	0.024	0.022
5	0.0424	0.0524	0.016	0.002	0.029	0.018
6	0.0424	0.0524	0.016	0.002	0.029	0.018
7	0.0424	0.0524	0.016	0.002	0.029	0.018
8	0.0424	0.0524	0.013	0.002	0.024	0.018
9	0.0424	0.0524	0.011	0.002	0.020	0.018
10	0.0424	0.0524	0.007	0.001	0.013	0.009
11	0.0424	0.0524	0.007	0.001	0.013	0.009
12	0.0424	0.0524	0.007	0.001	0.013	0.009
13	0.0424	0.0524	0.007	0.001	0.013	0.009
14	0.0424	0.0524	0.007	0.001	0.013	0.009
15	0.0424	0.0524	0.000	0.000	0.020	0.010
16	0.0424	0.0524	0.000	0.000	0.020	0.010
17	0.0424	0.0524	0.000	0.000	0.020	0.010
18	0.0424	0.0524	0.000	0.000	0.020	0.010
19	0.0424	0.0524	0.000	0.000	0.020	0.010
20	0.0424	0.0524	0.000	0.000	0.010	0.000
21	0.0424	0.0524	0.000	0.000	0.010	0.000
22	0.0424	0.0524	0.000	0.000	0.010	0.000
23	0.0424	0.0524	0.000	0.000	0.010	0.000
24	0.0424	0.0524	0.000	0.000	0.010	0.000
25	0.0424	0.0524	0.000	0.000	0.010	0.000
26	0.0424	0.0524	0.000	0.000	0.010	0.000
27	0.0424	0.0524	0.000	0.000	0.010	0.000
28	0.0424	0.0524	0.000	0.000	0.010	0.000
29	0.0424	0.0524	0.000	0.000	0.010	0.000
30+	0.0325	0.0524	0.000	0.000	0.000	0.000

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

APPENDIX B
STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the actuarial valuation as of January 1, 2013 are:

Actuarial Assumptions

1. Rate of Return

Assets are assumed to earn 7.50% net of investment expenses.

2. Cost of Living

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 3.00% per year.

3. Post Retirement COLA

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

4. 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		
	<5	5-29	30+
Base Increase	3.25%	3.25%	3.25%
Longevity & Promotion			
General	3.86%	0.96%	0.00%
Safety	4.83%	1.93%	1.93%
Total (Compound)			
General	7.24%	4.24%	3.25%
Safety	8.24%	5.24%	5.24%

**APPENDIX B
STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS**

5. Family Composition

Percentage married for all active members who retire, become disabled or die during active service is shown in the following table. Women are assumed to be three years younger than men.

Percentage Married	
Gender	Percentage
Males	70%
Females	50%

6. Rates of Termination

Sample rates of termination are show in the following table.

Rates of Termination*		
Years of Service	General	Safety
0	12.75%	8.75%
1	10.00%	7.75%
2	10.00%	5.75%
3	7.75%	2.75%
4	4.75%	2.75%
5	4.50%	2.00%
6	4.50%	2.00%
7	4.50%	2.00%
8	3.75%	2.00%
9	3.00%	2.00%
10-19	2.00%	1.00%
20-29	1.00%	0.00%
30+	0.00%	0.00%

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

APPENDIX B
STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

7. Withdrawal

Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits. 50% of all General Member terminations with less than five years of service are assumed to take a refund of contributions, as well as 35% of those with five to fourteen years of service.

20% of all Safety Member terminations with less than five years of service are assumed to take a refund of contributions and 10% of those between five and fourteen years are assumed to take a refund.

8. 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.

50% of all General Member terminations with less than five years of service are assumed to leave their contributions on deposit, as well as 65% of those with five to fourteen years of service, and 100% of those with fifteen or more years of service.

80% of all Safety Member terminations with less than five years of service are assumed to leave their contributions on deposit, as well as 90% of those between five and fourteen years of service and 100% of those with fifteen or more years of service.

Vested terminated General Members are assumed to begin receiving benefits at age 58; terminated Safety Members are assumed to begin receiving benefits at age 53. 25% of vested terminated General Members and 50% of vested terminated Safety Members are assumed to be reciprocal.

APPENDIX B
STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

9. Rates of Service-Connected Disability

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

Rates of Svc Disability			
Age	General		Safety
	Male	Female	
22	0.066%	0.022%	0.050%
27	0.066%	0.030%	0.088%
32	0.066%	0.051%	0.165%
37	0.066%	0.073%	0.302%
42	0.380%	0.094%	0.566%
47	0.380%	0.123%	0.995%
52	0.226%	0.159%	1.713%
57	0.226%	0.204%	2.633%
62	0.226%	0.249%	0.000%

10. Rates of Nonservice-Connected Disability

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

Rates of Non-Svc Disability				
Age	General		Safety	
	Male	Female	Male	Female
22	0.051%	0.053%	0.000%	0.000%
27	0.068%	0.067%	0.003%	0.006%
32	0.086%	0.081%	0.005%	0.010%
37	0.108%	0.102%	0.009%	0.019%
42	0.138%	0.138%	0.028%	0.057%
47	0.178%	0.197%	0.082%	0.164%
52	0.225%	0.267%	0.167%	0.334%
57	0.286%	0.337%	0.265%	0.529%
62	0.362%	0.408%	0.000%	0.000%

11. Rates of Mortality for Healthy Lives

Mortality rates for active members, retirees, beneficiaries, terminated vested and reciprocal members are based on the sex distinct Retired Pensioner (RP) 2000 Combined

APPENDIX B
STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

Healthy Tables, published by the Society of Actuaries, with Generational Projection using Projection Scale BB.

12. Rates of Mortality for Disabled Retirees

Mortality rates for active members, retirees, beneficiaries, terminated vested and reciprocal members are based on the sex distinct Retired Pensioner (RP) 2000 Combined Healthy Tables, published by the Society of Actuaries, with Generational Projection using Projection Scale BB, set-forward eight years for males and females.

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STATEMENT OF CURRENT ACTUARIAL ASSUMPTIONS AND METHODS

13. Rates of Retirement

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

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+	10-29	20+
45	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%
46	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%
47	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%
48	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%
49	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%
50	5.00%	5.00%	5.00%	5.00%	2.00%	7.00%	10.00%	15.00%
51	5.00%	5.00%	5.00%	5.00%	2.00%	7.00%	5.00%	10.00%
52	5.00%	5.00%	5.00%	5.00%	2.00%	7.00%	5.00%	10.00%
53	5.00%	5.00%	5.00%	5.00%	2.00%	7.00%	5.00%	20.00%
54	5.00%	5.00%	5.00%	5.00%	3.00%	7.00%	5.00%	20.00%
55	5.00%	5.00%	15.00%	5.00%	4.00%	15.00%	5.00%	30.00%
56	5.00%	5.00%	15.00%	5.00%	7.00%	15.00%	5.00%	20.00%
57	5.00%	5.00%	15.00%	5.00%	7.00%	15.00%	5.00%	20.00%
58	5.00%	7.50%	20.00%	5.00%	10.00%	20.00%	5.00%	20.00%
59	5.00%	7.50%	25.00%	5.00%	10.00%	25.00%	5.00%	20.00%
60	7.50%	15.00%	25.00%	7.50%	10.00%	25.00%	5.00%	20.00%
61	7.50%	20.00%	35.00%	7.50%	15.00%	35.00%	25.00%	25.00%
62	7.50%	25.00%	40.00%	7.50%	25.00%	35.00%	25.00%	50.00%
63	7.50%	25.00%	35.00%	7.50%	25.00%	35.00%	25.00%	50.00%
64	7.50%	25.00%	35.00%	7.50%	25.00%	35.00%	25.00%	50.00%
65	15.00%	30.00%	50.00%	15.00%	25.00%	50.00%	100.00%	100.00%
66	15.00%	30.00%	50.00%	15.00%	25.00%	50.00%	100.00%	100.00%
67	15.00%	30.00%	40.00%	15.00%	35.00%	40.00%	100.00%	100.00%
68	15.00%	30.00%	30.00%	15.00%	35.00%	30.00%	100.00%	100.00%
69	15.00%	30.00%	30.00%	15.00%	35.00%	30.00%	100.00%	100.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

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.

PEPRA: For members joining the Plan on and after January 1, 2013 (Tier II Members), only pensionable compensation up to the Social Security Taxable Wage Base (\$113,700 for 2013) 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 Taxable Wage Base (\$136,440 for 2013.) 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 II 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 twelve 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: Final Compensation means the highest average Compensation earned during any twelve consecutive months of the Member's employment.

PEPRA: For Tier II Members, highest average Compensation will be based on the highest thirty-six 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 and Federal agencies.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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.

PEPRA: A New 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 II Members if their service in the reciprocal system was under a pre-PEPRA 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 II Members for all subsequent service.

Member

Contributions: Each Member contributes a percentage of Compensation to the Plan through payroll deduction. The percentage contributed depends on the Member's age upon joining the Plan. Representative rates are shown in Table 1 below (complete rate tables in appendix).

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.

APPENDIX C
 SUMMARY OF PLAN PROVISIONS

Tier I Member Contribution Rates (Basic Rates)

Entry Age	General Member Rate		Safety Member Rate	
	1 st \$350/month	Over \$350	1 st \$350/month	Over \$350
20	1.83%	2.74%	3.00%	4.50%
25	2.07%	3.11%	3.19%	4.78%
30	2.27%	3.40%	3.39%	5.08%
35	2.48%	3.72%	3.61%	5.41%
40	2.71%	4.07%	3.86%	5.79%
45	2.99%	4.48%	4.13%	6.20%
50	3.27%	4.91%	4.07%	6.11%

PEPRA: Tier II Members must contribute half of the normal cost of the Plan. Contributions for these Members will be based on the Normal Cost associated with their benefits; General and Safety members will pay different rates.

Tier II Members will pay a single contribution rate, not a rate based on entry age. All Tier II Members are expected to continue contributing after earning 30 years of service.

General Member Rate	Safety Member Rate
8.82%	14.49%

Interest is credited semiannually to each Member's accumulated contributions. The crediting rate is set by the Board; the current semi-annual rate is 3.80%, for an effective annual rate of 7.75%. The crediting rate will change to 7.50% effective January 1, 2014.

C. Service Retirement:

Eligibility: 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.

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.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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

Benefit Amount: The Service Retirement Benefit payable to General Members is equal to the percentage in Table 3 below multiplied by the Member's Final Compensation. The Service Retirement Benefit payable to Safety Members is equal to the percentage in Table 4 below multiplied by the Member's Final Compensation. The percentage of Final Compensation may not exceed 100%.

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

Table 3: 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						

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**APPENDIX C
SUMMARY OF PLAN PROVISIONS**

Table 4: 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

APPENDIX C
 SUMMARY OF PLAN PROVISIONS

Table 5: Social Security Adjustment

Age at Retirement	General Member Reduction	Safety Member Reduction
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

PEPRA: For Tier II General Members, the benefit multiplier will be 1% at age 52, increasing by 0.1% for each year of age to 2.5% at 67. For Tier II Safety Members, the benefit multiplier will be 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 will increase 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.

Actuarially equivalent optional benefit forms are also available.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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.

PEPRA: No change.

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.

PEPRA: No change.

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.

PEPRA: No change.

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.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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.

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.

PEPRA: No change.

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

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SUMMARY OF PLAN PROVISIONS

- 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 Nonservice-Connected Disability Retirement benefit.

PEPRA: The Nonservice-Connected Disability Retirement Benefit for Tier II Members will be based on the definitions of Pensionable Compensation and Final Compensation applicable to Tier II Members.

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.

PEPRA: No change.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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.

PEPRA: The Service-Connected Death Benefit for Tier II Members will be based on the definitions of Pensionable Compensation and Final Compensation applicable to Tier II Members.

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.

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.

PEPRA: No change.

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.

APPENDIX C
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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.

PEPRA: The Nonservice-Connected Death Benefit for Tier II Members will be based on the definitions of Pensionable Compensation and Final Compensation applicable to Tier II Members.

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.

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.

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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.

Tables 2 and 3 are extended for service under ten 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.

PEPRA: For Tier II Members, the Deferred Vested Benefit will be based on the new benefit formulas, and will be based on the definitions of Pensionable Compensation and Final Compensation applicable to Tier II Members.

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.

PEPRA: For Tier II Members, the Deferred Vested Benefit may commence at the service retirement eligibility criteria (age 52 for General, age 50 for Safety.)

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.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

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.

PEPRA: For Tier II Members, the Reciprocal Benefit will be based on the new benefit formulas, and will be based on the definitions of Pensionable Compensation and Final Compensation applicable to Tier II Members.

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.

PEPRA: For Tier II Members, the Reciprocal Benefit may commence at the service retirement eligibility criteria (age 52 for General, age 50 for Safety.)

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

APPENDIX D
STATEMENT OF PRIOR ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in prior actuarial valuations:

Actuarial Assumptions

1. Valuation Date

All assets and actuarial liabilities were computed as of January 1, 2012.

2. Rate of Return

The annual rate of return on all Plan assets was assumed to be 7.75%, net of investment and administrative expenses.

3. Cost of Living

The cost of living as measured by the Consumer Price Index (CPI) increased at the rate of 3.25% per year.

4. Post Retirement COLA

Benefits were assumed to increase after retirement at the rate of 2.7% per year.

5. Increases in Pay

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

Pay Increases			
	Years of Service		
	<5	5-29	30+
Base Increase	3.50%	3.50%	3.50%
Longevity & Promotion			
General	3.86%	0.96%	0.00%
Safety	4.83%	1.93%	1.93%
Total (Compound)			
General	7.49%	4.50%	3.50%
Safety	8.50%	5.50%	5.50%

APPENDIX D
STATEMENT OF PRIOR ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Improvement

No mortality improvement was explicitly assumed; however we built a margin in our mortality assumption between the actual and expected number of deaths in order to assume some future mortality improvements. The experience study report for the period covering January 1, 2007 to December 31, 2009 contains a full description of these margins.

6. Mortality

Rates of mortality for active and retired Members and their beneficiaries were specified by the Retired Pensioners (RP) 2000 tables published by the Society of Actuaries (projected from 2000 to 2010 using Scale AA), with a one year age setback for female members

All deaths among active General members were assumed to be non-duty.

7. Duty Related Mortality

Duty related deaths were assumed for Safety Members according to a 1981 Table. Representative rates were as follows:

Age	Rate
30	0.03%
35	0.04%
40	0.05%
45	0.06%
50	0.07%
55	0.08%
60	0.00%

8. Disabled Member Mortality

Rates of mortality for disabled Members were specified by the Retired Pensioners (RP) 2000 tables published by the Society of Actuaries (projected from 2000 to 2010 using Scale AA), with a five year age set-forward for male Members and a six year age set-forward for female Members.

9. Service Retirement

Retirement was assumed to occur among General Members and Safety Members in accordance with the tables below:

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

APPENDIX D
STATEMENT OF PRIOR ACTUARIAL ASSUMPTIONS AND METHODS

General Members					
Years of Service:	5-9	10-29		30 +	
Age	Both	Male	Female	Male	Female
50	0.0%	2.0%	2.0%	5.0%	7.0%
51	0.0%	2.0%	2.0%	5.0%	7.0%
52	0.0%	2.0%	2.0%	5.0%	7.0%
53	0.0%	3.0%	2.0%	5.0%	7.0%
54	1.0%	3.0%	3.0%	5.0%	7.0%
55	1.0%	5.0%	4.0%	15.0%	15.0%
56	1.0%	5.0%	7.0%	15.0%	15.0%
57	1.0%	5.0%	7.0%	15.0%	15.0%
58	1.0%	7.5%	7.0%	20.0%	20.0%
59	1.0%	7.5%	10.0%	25.0%	25.0%
60	1.0%	7.5%	10.0%	25.0%	25.0%
61	1.0%	7.5%	15.0%	35.0%	35.0%
62	1.0%	40.0%	25.0%	40.0%	35.0%
63	1.0%	25.0%	25.0%	35.0%	35.0%
64	1.0%	25.0%	25.0%	35.0%	35.0%
65	5.0%	50.0%	50.0%	50.0%	50.0%
66	5.0%	50.0%	50.0%	50.0%	50.0%
67	5.0%	40.0%	40.0%	40.0%	40.0%
68	5.0%	30.0%	30.0%	30.0%	30.0%
69	5.0%	30.0%	30.0%	30.0%	30.0%
70+	100.0%	100.0%	100.0%	100.0%	100.0%

Safety Members		
Years of Service		
Age	10-19	20+
45-49	0.0%	1.0%
50	10.0%	10.0%
51-52	5.0%	5.0%
53-60	5.0%	20.0%
61	25.0%	25.0%
62-64	25.0%	50.0%
65+	100.0%	100.0%

APPENDIX D
STATEMENT OF PRIOR ACTUARIAL ASSUMPTIONS AND METHODS

10. Service-Connected Disability

Separate rates of duty disability were assumed among male and female General Members; rates for both sexes were combined for Safety Members. Below are sample rates:

Age	General Male	General Female	Safety
22	0.066%	0.032%	0.072%
27	0.066%	0.043%	0.125%
32	0.066%	0.073%	0.235%
37	0.066%	0.104%	0.432%
42	0.380%	0.134%	0.809%
47	0.380%	0.175%	1.421%
52	0.226%	0.227%	2.447%
57	0.226%	0.291%	3.762%
62	0.226%	0.356%	0.000%

11. Non Service-Connected Disability

Separate rates of ordinary disability were assumed among male and female General and Safety Members. All rates were applied after five Years of Service. Sample rates are shown below.

Age	General Male	General Female	Safety Male	Safety Female
22	0.051%	0.076%	0.000%	0.000%
27	0.068%	0.095%	0.005%	0.009%
32	0.086%	0.115%	0.007%	0.014%
37	0.108%	0.145%	0.014%	0.027%
42	0.138%	0.197%	0.041%	0.081%
47	0.178%	0.281%	0.117%	0.234%
52	0.225%	0.381%	0.239%	0.477%
57	0.286%	0.482%	0.378%	0.756%
62	0.362%	0.583%	0.000%	0.000%

12. Withdrawal

Rates of withdrawal applied to active Members who terminated their employment and withdrew their member contributions, forfeiting entitlement to future Plan benefits.

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

APPENDIX D
STATEMENT OF PRIOR ACTUARIAL ASSUMPTIONS AND METHODS

The rates shown in the sample table below were not applied to Members eligible for service retirement, or to Safety members age 60 or older

Service	General	Safety
0	12.0%	8.0%
1	7.0%	7.0%
2	4.0%	5.0%
3	4.0%	2.0%
4	4.0%	2.0%
5-9	1.5%	1.0%
10-19	0.5%	0.0%
20+	0.0%	0.0%

13. Pay for Benefits

No allowance had been made for special increases in Compensation prior to termination or retirement. In particular, no special terminal payouts or pay increases were assumed to increase Final Compensation at retirement; however expected pensionable pay in excess of base pay was included in the determination of valuation pay for each member.

14. Family Composition

50% of female members and 70% of males were assumed to be married. Male spouses were assumed to be three years older than their wives.

80% of male members and 50% of female members who died during active service were assumed to have a spouse or minor child eligible for a monthly survivor's benefit.

APPENDIX D
STATEMENT OF PRIOR ACTUARIAL ASSUMPTIONS AND METHODS

15. Employment Status

No future transfers among member groups were assumed.

16. Deferral Age

Terminated vested members were assumed to commence benefits at age 56 for General and age 55 for Safety.

17. Vested Termination with Deferred Benefit

Rates of vested termination applied to active Members who terminated their employment after five years of service and left their member contributions on deposit with the Plan, and thus were entitled to a deferred benefit. Alternatively, those who terminated their employment with less than five years of service could leave their member contributions with the Plan and transfer to a reciprocal employer, therefore retaining entitlement to future Plan benefits.

Service	General	Safety
0-4	0.75%	0.75%
5-9	3.00%	2.50%
10-19	3.00%	1.00%
20-29	1.50%	0.00%
30+	0.00%	0.00%

No terminations were assumed for participants who were eligible for retirement, or among Safety members age 50 or older. For all members who terminated with less than five years of service, 100% were assumed to go to work with a reciprocal employer. For General members who terminated with at least five years of service, 25% were assumed to go to work with a reciprocal employer. This rate was 50% for Safety members.

**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 which 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.

**APPENDIX E
GLOSSARY**

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.

9. Amortization Payment

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

10. Entry Age Normal Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

11. Funded Ratio

The ratio of the Actuarial Liabilities to the Actuarial Value of Assets.

12. 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.

13. Projected Benefits

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

14. Unfunded Actuarial Liability

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

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

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

Tier I 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, 2012				As of January 1, 2013			
	General	Safety	Total		General	Safety	Total
Employer Normal Cost				Employer Normal Cost			
Basic	11.00%	19.27%	12.48%	Basic	12.54%	21.68%	14.17%
COL	4.70%	8.78%	5.39%	COL	4.44%	8.33%	5.13%
Total	15.70%	28.05%	17.88%	Total	16.98%	30.01%	19.30%
UAL Amortization Cost				UAL Amortization Cost			
Basic	11.78%	21.18%	13.46%	Basic	15.17%	28.15%	17.45%
COL	3.22%	6.38%	3.78%	COL	1.75%	4.17%	2.18%
Total	14.99%	27.56%	17.25%	Total	16.92%	32.32%	19.63%
Total Cost				Total Cost			
Basic	22.78%	40.44%	25.95%	Basic	27.71%	49.83%	31.62%
COL	7.91%	15.16%	9.18%	COL	6.19%	12.50%	7.31%
Total	30.69%	55.61%	35.12%	Total	33.90%	62.33%	38.93%

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

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

Tier I 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, 2012			As of January 1, 2013			
	General	Safety	Total	General	Safety	Total	
Employer Normal Cost				Employer Normal Cost			
Basic	10.52%	17.74%	11.81%	Basic	12.07%	20.27%	13.54%
COL	4.70%	8.78%	5.43%	COL	4.44%	8.33%	5.13%
Total	15.22%	26.52%	17.24%	Total	16.51%	28.60%	18.67%
UAL Amortization Cost				UAL Amortization Cost			
Basic	11.78%	21.18%	13.46%	Basic	15.17%	28.15%	17.49%
COL	3.22%	6.38%	3.78%	COL	1.75%	4.17%	2.18%
Total	14.99%	27.56%	17.25%	Total	16.92%	32.32%	19.67%
Total Cost				Total Cost			
Basic	22.30%	38.91%	25.27%	Basic	27.24%	48.42%	31.02%
COL	7.91%	15.16%	9.21%	COL	6.19%	12.50%	7.32%
Total	30.21%	54.08%	34.49%	Total	33.43%	60.92%	38.34%

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

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

Tier I 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, 2012			As of January 1, 2013			
	General	Safety	Total	General	Safety	Total	
Employer Normal Cost				Employer Normal Cost			
Basic	11.00%	19.27%	12.48%	Basic	12.54%	21.68%	14.17%
COL	2.54%	4.71%	2.93%	COL	2.35%	4.57%	2.75%
Total	13.54%	23.97%	15.41%	Total	14.89%	26.25%	16.92%
UAL Amortization Cost				UAL Amortization Cost			
Basic	11.78%	21.18%	13.46%	Basic	15.17%	28.15%	17.49%
COL	3.22%	6.38%	3.78%	COL	1.75%	4.17%	2.18%
Total	14.99%	27.56%	17.25%	Total	16.92%	32.32%	19.67%
Total Cost				Total Cost			
Basic	22.78%	40.44%	25.95%	Basic	27.71%	49.83%	31.66%
COL	5.76%	11.09%	6.72%	COL	4.10%	8.74%	4.93%
Total	28.54%	51.53%	32.66%	Total	31.81%	58.57%	36.58%

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

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

Tier I 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, 2012			As of January 1, 2013			
	General	Safety	Total	General	Safety	Total	
Employer Normal Cost				Employer Normal Cost			
Basic	10.52%	17.74%	11.81%	Basic	12.07%	20.27%	13.54%
COL	2.54%	4.71%	2.93%	COL	2.35%	4.57%	2.75%
Total	13.06%	22.44%	14.74%	Total	14.42%	24.84%	16.28%
UAL Amortization Cost				UAL Amortization Cost			
Basic	11.78%	21.18%	13.46%	Basic	15.17%	28.15%	17.49%
COL	3.22%	6.38%	3.78%	COL	1.75%	4.17%	2.18%
Total	14.99%	27.56%	17.25%	Total	16.92%	32.32%	19.67%
Total Cost				Total Cost			
Basic	22.30%	38.91%	25.27%	Basic	27.24%	48.42%	31.02%
COL	5.76%	11.09%	6.72%	COL	4.10%	8.74%	4.93%
Total	28.06%	50.00%	31.99%	Total	31.34%	57.16%	35.95%

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013

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

Tier II 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, 2012			As of January 1, 2013			
	General	Safety	Total	General	Safety	Total	
Employer Normal Cost				Employer Normal Cost			
Basic	6.45%	10.30%	7.12%	Basic	6.88%	10.84%	7.59%
COL	2.02%	3.42%	2.28%	COL	1.94%	3.65%	2.21%
Total	8.47%	13.72%	9.40%	Total	8.82%	14.49%	9.80%
UAL Amortization Cost				UAL Amortization Cost			
Basic	11.78%	21.18%	13.46%	Basic	15.17%	28.15%	17.45%
COL	3.22%	6.38%	3.78%	COL	1.75%	4.17%	2.18%
Total	14.99%	27.56%	17.25%	Total	16.92%	32.32%	19.63%
Total Cost				Total Cost			
Basic	18.23%	31.48%	20.58%	Basic	22.05%	38.99%	25.04%
COL	5.24%	9.80%	6.06%	COL	3.69%	7.82%	4.39%
Total	23.46%	41.28%	26.65%	Total	25.74%	46.81%	29.43%

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**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 ¹	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	1.63%	2.45%	1.14%	1.71%
17	1.68%	2.52%	1.14%	1.71%
18	1.73%	2.59%	1.14%	1.71%
19	1.77%	2.66%	1.14%	1.71%
20	1.83%	2.74%	1.14%	1.71%
21	1.87%	2.81%	1.17%	1.76%
22	1.93%	2.89%	1.21%	1.82%
23	1.98%	2.97%	1.25%	1.87%
24	2.03%	3.05%	1.29%	1.93%
25	2.07%	3.11%	1.32%	1.98%
26	2.11%	3.17%	1.35%	2.03%
27	2.15%	3.22%	1.39%	2.08%
28	2.19%	3.28%	1.41%	2.12%
29	2.23%	3.34%	1.44%	2.16%
30	2.27%	3.40%	1.47%	2.20%
31	2.31%	3.46%	1.49%	2.24%
32	2.35%	3.53%	1.52%	2.28%
33	2.39%	3.59%	1.55%	2.32%
34	2.43%	3.65%	1.58%	2.37%
35	2.48%	3.72%	1.61%	2.41%
36	2.53%	3.79%	1.65%	2.47%
37	2.57%	3.86%	1.68%	2.52%
38	2.62%	3.93%	1.72%	2.58%
39	2.67%	4.00%	1.77%	2.65%
40	2.71%	4.07%	1.81%	2.72%
41	2.77%	4.15%	1.83%	2.75%
42	2.81%	4.22%	1.86%	2.79%
43	2.87%	4.30%	1.89%	2.83%
44	2.93%	4.39%	1.91%	2.86%
45	2.99%	4.48%	1.95%	2.92%
46	3.05%	4.57%	1.97%	2.96%
47	3.11%	4.67%	1.99%	2.99%
48	3.19%	4.78%	2.01%	3.01%
49	3.27%	4.90%	2.02%	3.03%
50	3.27%	4.91%	2.02%	3.03%
51	3.27%	4.91%	2.03%	3.04%
52	3.28%	4.92%	2.01%	3.02%
53	3.28%	4.92%	1.98%	2.97%
54+	3.29%	4.93%	1.94%	2.91%

¹ 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.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**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	Basic Rate		COLA Cost-Sharing Rate ¹	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	1.86%	2.79%	1.14%	1.71%
17	1.91%	2.87%	1.14%	1.71%
18	1.97%	2.95%	1.14%	1.71%
19	2.02%	3.03%	1.14%	1.71%
20	2.08%	3.12%	1.14%	1.71%
21	2.13%	3.20%	1.18%	1.77%
22	2.19%	3.29%	1.21%	1.82%
23	2.26%	3.39%	1.25%	1.88%
24	2.32%	3.48%	1.29%	1.93%
25	2.37%	3.55%	1.32%	1.98%
26	2.41%	3.61%	1.35%	2.03%
27	2.45%	3.67%	1.39%	2.08%
28	2.49%	3.74%	1.41%	2.12%
29	2.54%	3.81%	1.45%	2.17%
30	2.59%	3.88%	1.47%	2.20%
31	2.63%	3.94%	1.50%	2.25%
32	2.68%	4.02%	1.52%	2.28%
33	2.73%	4.09%	1.55%	2.32%
34	2.77%	4.16%	1.58%	2.37%
35	2.83%	4.24%	1.61%	2.42%
36	2.88%	4.32%	1.65%	2.47%
37	2.93%	4.40%	1.69%	2.53%
38	2.99%	4.48%	1.73%	2.59%
39	3.04%	4.56%	1.77%	2.65%
40	3.09%	4.64%	1.81%	2.72%
41	3.15%	4.73%	1.84%	2.76%
42	3.21%	4.81%	1.87%	2.80%
43	3.27%	4.90%	1.89%	2.83%
44	3.33%	5.00%	1.91%	2.86%
45	3.41%	5.11%	1.95%	2.93%
46	3.47%	5.21%	1.98%	2.97%
47	3.55%	5.32%	1.99%	2.99%
48	3.63%	5.45%	2.01%	3.01%
49	3.73%	5.59%	2.02%	3.03%
50	3.73%	5.60%	2.02%	3.03%
51	3.73%	5.60%	2.03%	3.04%
52	3.74%	5.61%	2.01%	3.02%
53	3.74%	5.61%	1.98%	2.97%
54+	3.75%	5.62%	1.94%	2.91%

¹ 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.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**APPENDIX G
MEMBER CONTRIBUTION RATES**

Safety Member Contribution Rates

Basic Half Rate (Government Code Section 31639.5)

Entry Age	Basic Rate		COLA Cost-Sharing Rate ¹	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	2.85%	4.28%	2.85%	4.27%
17	2.89%	4.34%	2.85%	4.27%
18	2.93%	4.39%	2.85%	4.27%
19	2.96%	4.44%	2.85%	4.27%
20	3.00%	4.50%	2.85%	4.27%
21	3.03%	4.55%	2.87%	4.31%
22	3.07%	4.61%	2.91%	4.36%
23	3.11%	4.66%	2.93%	4.40%
24	3.15%	4.72%	2.96%	4.44%
25	3.19%	4.78%	2.99%	4.49%
26	3.23%	4.84%	3.03%	4.54%
27	3.27%	4.90%	3.05%	4.58%
28	3.31%	4.96%	3.08%	4.62%
29	3.35%	5.02%	3.11%	4.66%
30	3.39%	5.08%	3.13%	4.69%
31	3.43%	5.14%	3.16%	4.74%
32	3.47%	5.21%	3.19%	4.78%
33	3.51%	5.27%	3.23%	4.84%
34	3.56%	5.34%	3.23%	4.84%
35	3.61%	5.41%	3.24%	4.86%
36	3.65%	5.48%	3.22%	4.83%
37	3.70%	5.55%	3.23%	4.85%
38	3.75%	5.63%	3.25%	4.88%
39	3.81%	5.71%	3.28%	4.92%
40	3.86%	5.79%	3.31%	4.96%
41	3.92%	5.88%	3.27%	4.90%
42	3.99%	5.98%	3.30%	4.95%
43	4.06%	6.09%	3.31%	4.96%
44	4.15%	6.22%	3.33%	5.00%
45	4.13%	6.20%	3.36%	5.04%
46	4.11%	6.17%	3.40%	5.10%
47	4.10%	6.15%	3.44%	5.16%
48	4.09%	6.13%	3.48%	5.22%
49+	4.07%	6.11%	3.51%	5.27%

¹ 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.

**SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
ACTUARIAL VALUATION REPORT AS OF JANUARY 1, 2013**

**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	Basic Rate		COLA Cost-Sharing Rate ¹	
	1st \$350/month	Over \$350	1st \$350/month	Over \$350
16	3.79%	5.69%	2.85%	4.27%
17	3.85%	5.77%	2.85%	4.27%
18	3.89%	5.84%	2.85%	4.27%
19	3.94%	5.91%	2.85%	4.27%
20	3.99%	5.99%	2.85%	4.27%
21	4.03%	6.05%	2.87%	4.31%
22	4.09%	6.13%	2.91%	4.36%
23	4.13%	6.20%	2.93%	4.40%
24	4.19%	6.28%	2.96%	4.44%
25	4.24%	6.36%	3.00%	4.50%
26	4.29%	6.44%	3.03%	4.54%
27	4.35%	6.52%	3.05%	4.58%
28	4.40%	6.60%	3.09%	4.63%
29	4.45%	6.68%	3.11%	4.66%
30	4.51%	6.76%	3.13%	4.69%
31	4.56%	6.84%	3.16%	4.74%
32	4.62%	6.93%	3.19%	4.79%
33	4.67%	7.01%	3.23%	4.84%
34	4.73%	7.10%	3.23%	4.85%
35	4.80%	7.20%	3.24%	4.86%
36	4.86%	7.29%	3.22%	4.83%
37	4.92%	7.38%	3.23%	4.85%
38	4.99%	7.49%	3.25%	4.88%
39	5.06%	7.59%	3.28%	4.92%
40	5.13%	7.70%	3.31%	4.96%
41	5.21%	7.82%	3.27%	4.91%
42	5.30%	7.95%	3.30%	4.95%
43	5.40%	8.10%	3.31%	4.96%
44	5.51%	8.27%	3.34%	5.01%
45	5.50%	8.25%	3.36%	5.04%
46	5.47%	8.21%	3.40%	5.10%
47	5.45%	8.18%	3.44%	5.16%
48	5.43%	8.15%	3.48%	5.22%
49+	5.42%	8.13%	3.52%	5.28%

¹ 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.