



*Classic Values, Innovative Advice*

## **City of San José Police and Fire Department Retirement Plan**

### **Actuarial Valuation Report as of June 30, 2019**

**Produced by Cheiron**

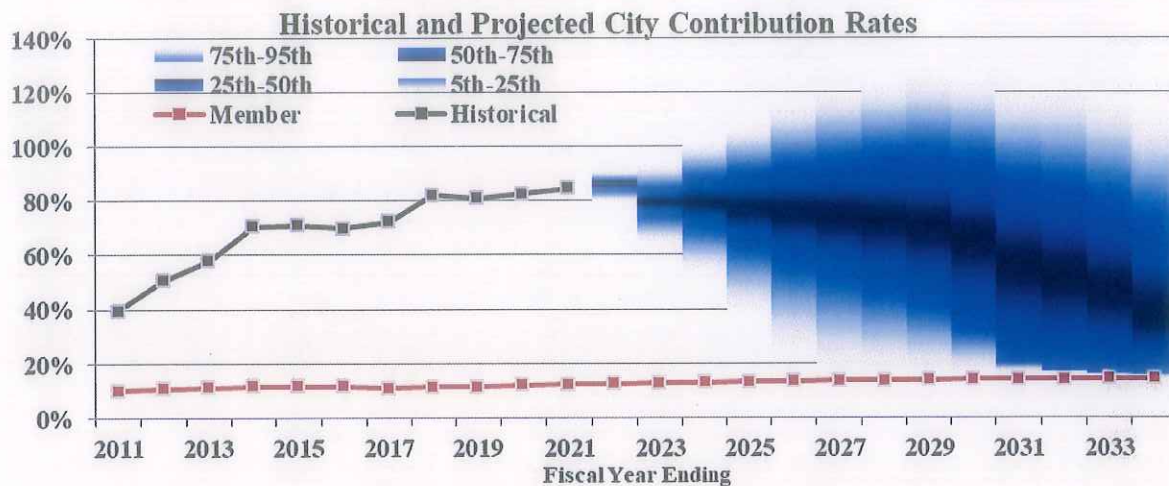
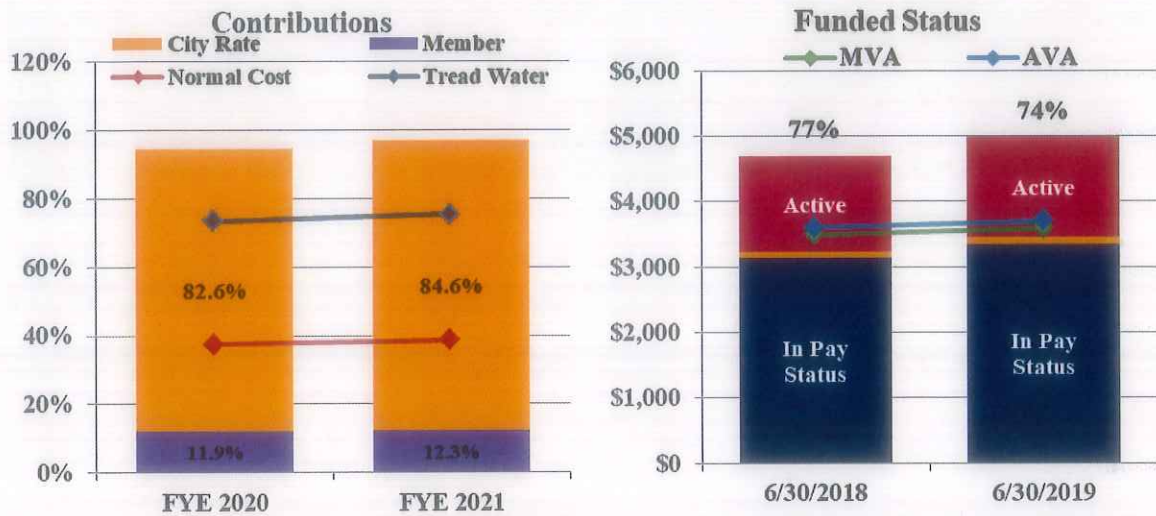
**December 2019**

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**SECTION I – BOARD SUMMARY**



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**Membership**

As shown in Table I-1 below, total membership grew 3.3% from 2018 to 2019, and active membership increased 3.8%. Active membership continues its shift from Tier 1 to Tier 2. Tier 1 active membership decreased by 65 members while Tier 2 active membership increased by 128 members. Total expected payroll increased by 8.0% in aggregate, with Tier 1 payroll decreasing 0.1% and Tier 2 payroll increasing 39.2%.

**Table I-1**

Total Membership			
	June 30, 2019	June 30, 2018	Change
Active Members			
Tier 1	1,215	1,280	-5.1%
Tier 2	<u>486</u>	<u>358</u>	<u>35.8%</u>
Total Actives	1,701	1,638	3.8%
Terminated Members	333	324	2.8%
Members In Pay Status	<u>2,318</u>	<u>2,250</u>	<u>3.0%</u>
Total	4,352	4,212	3.3%
Active Member Payroll			
Tier 1	\$ 173,196	\$ 173,436	-0.1%
Tier 2	<u>62,622</u>	<u>44,993</u>	<u>39.2%</u>
Total	\$ 235,818	\$ 218,429	8.0%

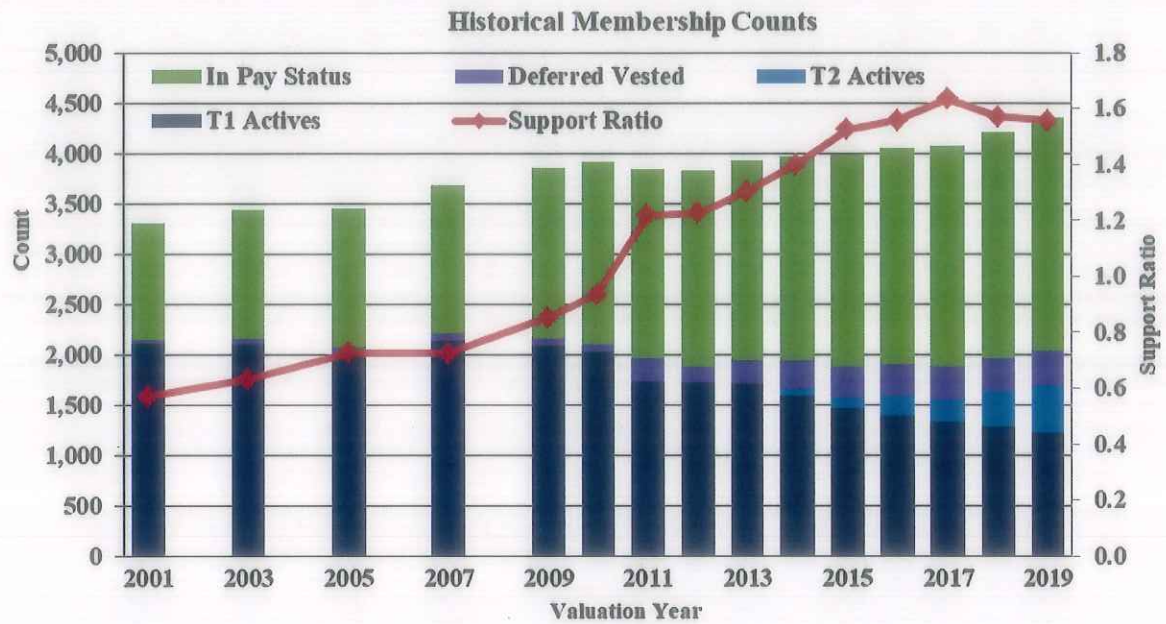
*Dollar amounts in thousands*

As shown in the chart on the following page, the number of active members remained around 2,000 from 2001 through 2010, at which point active membership declined significantly. The decline leveled around 2015 and the growth this year resulted in the largest active population since 2013. At the same time, the number of members in pay status has nearly doubled from 1,164 in 2001 to 2,318 in 2019. As a result, the number of members in pay status or with deferred benefits that each active member has to support if there are actuarial losses has increased from approximately 0.6 in 2001 to 1.6 in 2019. An increase in this ratio is to be expected for a maturing plan, but the impact of the recession accelerated the trend significantly. As there are more retirees to be supported by each active member, contributions tend to become more volatile and sensitive to gains and losses. The last two years' growth in the number of active members slightly reversed this trend.



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**Funded Status**

This report measures assets and liabilities for funding purposes. These measures are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. Table I-2 on the next page summarizes the Actuarial Liability, assets, and related ratios as of June 30, 2018 and 2019.

**Table I-2**

<b>Actuarial Liability, Assets and Funded Status</b>			
	<b>June 30, 2019</b>	<b>June 30, 2018</b>	<b>Change</b>
1. Actuarial Liability			
a. Actives	\$ 1,541,451	\$ 1,468,569	5.0%
b. Deferred Vested	104,916	98,084	7.0%
c. In Pay Status	<u>3,342,060</u>	<u>3,129,775</u>	<u>6.8%</u>
d. Total	\$ 4,988,427	\$ 4,696,428	6.2%
2. Market Value of Assets (MVA)	\$ 3,588,423	\$ 3,496,190	2.6%
3. UAL - MVA Basis (1.d. - 2.)	\$ 1,400,004	\$ 1,200,238	16.6%
4. Funding Ratio - MVA Basis (2. ÷ 1.d.)	71.9%	74.4%	-2.5%
5. Actuarial Value of Assets (AVA)	\$ 3,706,302	\$ 3,596,590	3.1%
6. UAL - AVA Basis (1.d. - 5.)	\$ 1,282,125	\$ 1,099,838	16.6%
7. Funding Ratio - AVA Basis (5. ÷ 1.d.)	74.3%	76.6%	-2.3%
8. Expected Payroll	\$ 235,818	\$ 218,429	8.0%
9. Asset Leverage Ratio (2. ÷ 8.)	15.2	16.0	-4.9%
10. Actuarial Liability Leverage Ratio (1.d. ÷ 8.)	21.2	21.5	-1.6%
11. Interest on UAL - MVA Basis	\$ 91,464	\$ 78,413	16.6%
12. Interest Cost as Percent of Payroll (11. ÷ 8.)	38.8%	35.9%	2.9%

*Dollar amounts in thousands*

The Actuarial Liability represents the target amount of assets the plan should have in the trust as of the valuation date based on the actuarial cost method. The Actuarial Liability increased 6.2% and the Market Value of Assets increased 2.6%. As a result, the Unfunded Actuarial Liability (UAL) measured on the Market Value of Assets increased 16.6% from approximately \$1,200.2 million to \$1,400.0 million, and the funding ratio on an MVA basis decreased from 74.4% to 71.9%.

The asset smoothing method deferred 80% of the investment loss while recognizing 20% of the prior four years' gains and losses, resulting in a 3.1% increase in the Actuarial Value of Assets.

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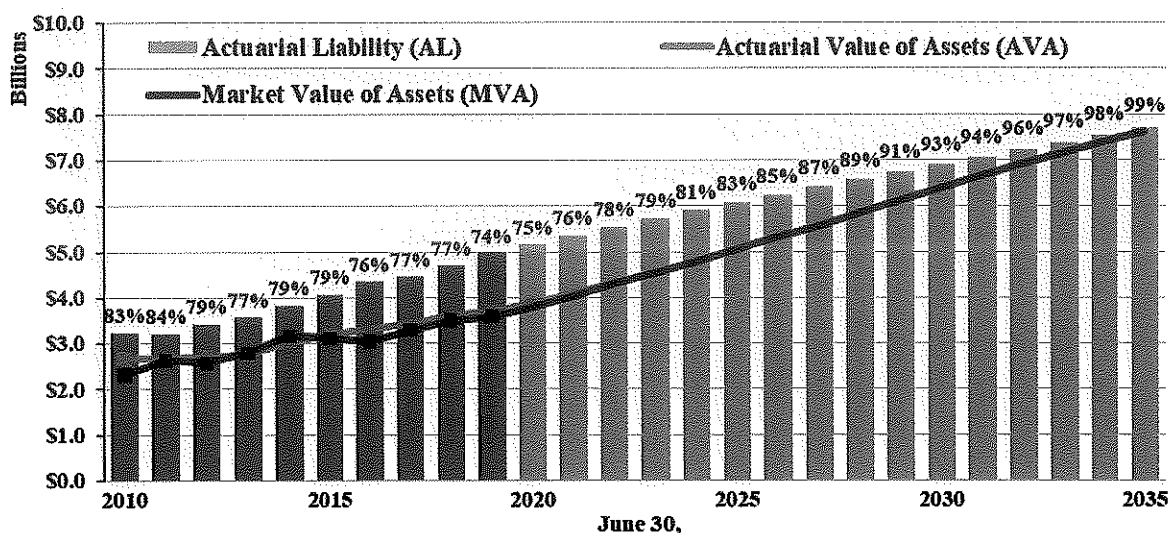
The UAL measured on the Actuarial Value of Assets increased 16.6% from approximately \$1,099.8 million to \$1,282.1 million and the funding ratio decreased from 76.6% to 74.3%. The Market Value of Assets is smaller than the actuarial value, so if the investment return assumption is met in the future, we expect an increase in contribution rates as the deferred asset losses are recognized in the Actuarial Value of Assets.

The asset leverage ratio of 15.2 means that if the Plan experiences a 10% loss on assets compared to the discount rate of 6.75% (-3.25% return), the loss would be equivalent to 152% of payroll. Interest payments alone on such a loss would be approximately 10.3% of payroll.

Interest payments on the current UAL are approximately 39% of payroll, increasing from 36% of payroll in the prior year due to the growth in the UAL relative to the growth in payroll. As the Plan becomes better funded, the asset leverage ratio will increase, and if it was 100% funded, the leverage ratio would be 21.2. These leverage ratios are extremely high compared to other public pension plans indicating that this plan is far more sensitive to investment gains and losses and assumption changes than other large public pension plans. It is notable, however, that with the growth in payroll, the leverage ratios have declined slightly in the last year.

The chart below shows the historical and projected trends for assets (both market and smoothed actuarial) versus the Actuarial Liability, and also shows the progress of the funding ratios (based on the Actuarial Value of Assets) since 2010. The historical Actuarial Liability is shown in dark gray while the projected Actuarial Liability is shown in a lighter gray. From 2011 to 2019, the funding ratio declined from 84% to 74% primarily due to lower than expected investment returns on the Actuarial Value of Assets and assumption changes, including reductions of the discount rate. If all assumptions are met in the future, the funded status is expected to reach 99% by 2035.

**Historical and Projected Assets and Actuarial Liability**





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While the funded status is expected to improve, the UAL is dependent on actual investment returns, changes in assumptions and actuarial gains and losses, so there is potentially a wide range for the projected UAL.

More detail on the assets can be found in section IV of this report, and more detail on the measures of liability can be found in section V of this report.

**Changes in UAL**

The bottom chart on the dashboard (page 1) and Table I-3 below show the historical changes to the UAL, including investment gains and losses on the Actuarial Value of Assets, liability gains and losses, assumption changes, benefit changes, and contributions compared to normal cost plus interest on the UAL. It is worth noting that 2014 and 2015 are the only years in the last 10 years in which there were investment gains on the Actuarial Value of Assets. Four years in the last 10 years experienced a liability loss. Changes in assumptions this year increased the Actuarial Liability by \$81 million.

Over the last 10 years, the UAL has increased about \$0.9 billion. Investment experience increased the UAL about \$756 million and assumption changes (primarily reducing the discount rate) increased the UAL about \$541 million. Gains on other assumptions reduced the UAL by about \$289 million, and contributions further reduced the UAL by about \$125 million.

**Table I-3**

Changes in Unfunded Actuarial Liability											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
<b>Discount Rate</b>	7.75%	7.50%	7.25%	7.125%	7.00%	7.00%	6.875%	6.875%	6.75%	6.75%	
<b>Source</b>											
AVA (G)/L	\$ 149.6	\$ 96.5	\$ 172.8	\$ 91.3	\$ (78.5)	\$ (2.8)	\$ 106.8	\$ 50.9	\$ 53.6	\$ 116.2	\$ 756.4
Liability (G)/L	(43.9)	(346.1)	(39.4)	(9.9)	14.7	(7.3)	61.3	61.8	(15.1)	35.1	(288.9)
Assumptions	104.2	89.1	75.2	28.2	56.3	90.0	72.7	(131.8)	76.4	80.9	541.2
Benefit Changes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.2	0.0	4.5
Contributions	49.9	17.1	(24.6)	2.2	(9.9)	(23.4)	(27.0)	(19.6)	(39.7)	(49.8)	(124.9)
<b>Total UAL Change</b>	<b>\$259.8</b>	<b>\$ (143.5)</b>	<b>\$184.0</b>	<b>\$111.9</b>	<b>\$ (17.4)</b>	<b>\$ 56.5</b>	<b>\$213.7</b>	<b>\$ (34.4)</b>	<b>\$ 75.4</b>	<b>\$182.3</b>	<b>\$ 888.2</b>

*Dollar amounts in millions*

Table I-4 on the following page shows the breakdown of the changes in UAL during the last year by source. In total, there was an increase in the UAL of approximately \$182 million, mostly attributable to investment losses and changes to assumptions. The total change in the UAL is about 3.7 percent of the Actuarial Liability.



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**Table I-4**

<b>Sources of FYE 2019 Change in UAL</b>		
	<b>Amount</b>	<b>% of AL</b>
Unfunded Actuarial Liability, June 30, 2019	\$ 1,282,125	25.7%
Unfunded Actuarial Liability, June 30, 2018	1,099,838	22.0%
<b>Change in Unfunded Actuarial Liability</b>	<b>\$ 182,287</b>	<b>3.7%</b>
<b><u>Sources of Changes</u></b>		
Plan Changes	\$ 0	0.0%
Assumption changes	80,853	1.6%
Normal Cost and Interest on UAL less Contributions	(49,850)	-1.0%
Investment experience	116,232	2.3%
Liability experience		
Salary experience	\$ 29,392	0.6%
Retirement experience	(1,275)	0.0%
Other experience	6,936	0.1%
Total Liability Experience	\$ 35,053	0.7%
<b>Total Changes</b>	<b>\$ 182,287</b>	<b>3.7%</b>

*Dollar amounts in thousands*

### **Contribution Amounts and Rates**

As shown in the upper left corner of the dashboard, the total City contribution rate reported in the actuarial valuation increased from 82.6% to 84.6%. The red line is the normal cost (including administrative expenses), and represents the benefits attributable to the next year of service. Contributions above the red line are to pay for the UAL. The blue line represents the tread water rate (normal cost plus interest on the Market Value UAL). Contributions equal to the tread water rate are needed to prevent the UAL from growing as a dollar amount if all assumptions are met. Because the total contribution rate is greater than the tread water rate, the principal of the UAL is expected to be reduced if all assumptions are met.

The pattern of projected contributions under the previous amortization policy was somewhat volatile with contribution rates projected to decrease in FYE 2023 and 2024 and then increase in FYE 2025 and 2026, and finally fall dramatically in FYE 2027 and 2028. As a result, the Board adjusted some amortization periods and reduced the amortization payment increase rate from 3.25% to 2.50% to stabilize future contribution rates. The chart on the following page shows each amortization payment layer as stacked bars (purple for assumption changes, green for benefit changes, and gold for gains and losses), the total scheduled payments prior to the changes (red line), and the total scheduled payments after the changes (blue line). The impact of the

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adjustments is generally a reduction in contributions through FYE 2026, an increase from FYE 2027 through FYE 2031, a slightly lower contribution in FYE 2032, and no changes for FYE 2033 and later. The new pattern of future Tier 1 UAL contributions smooths the ups and downs of the prior pattern.

**Change in Scheduled Tier 1 Amortization Payments**

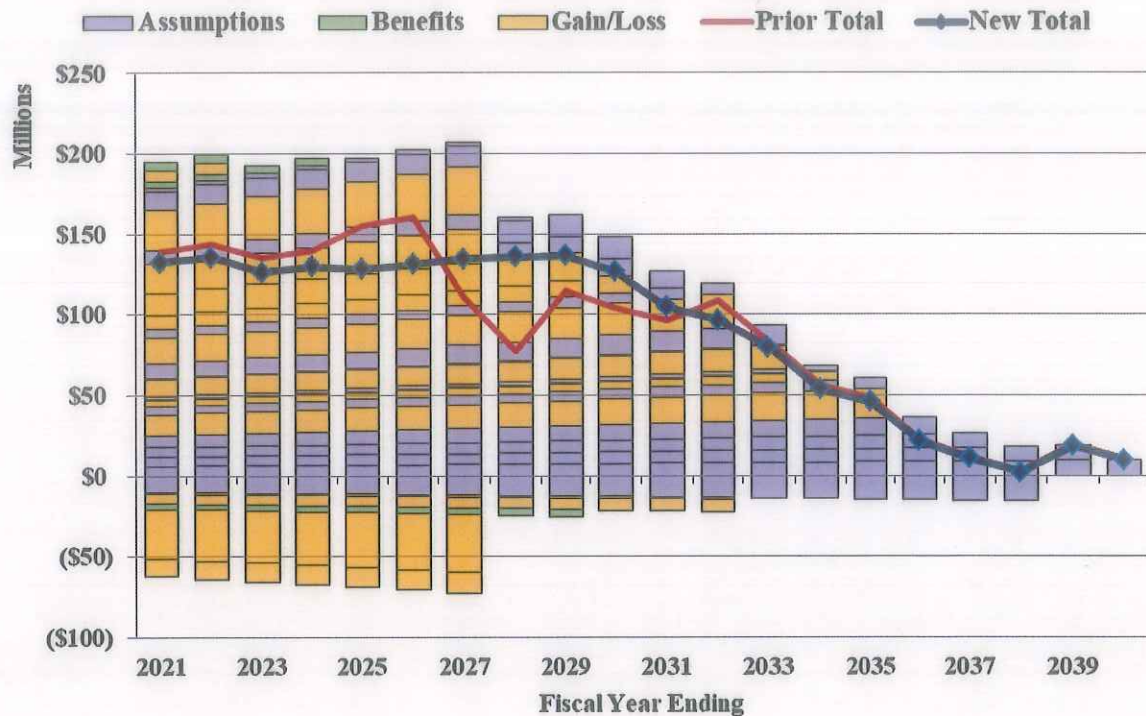


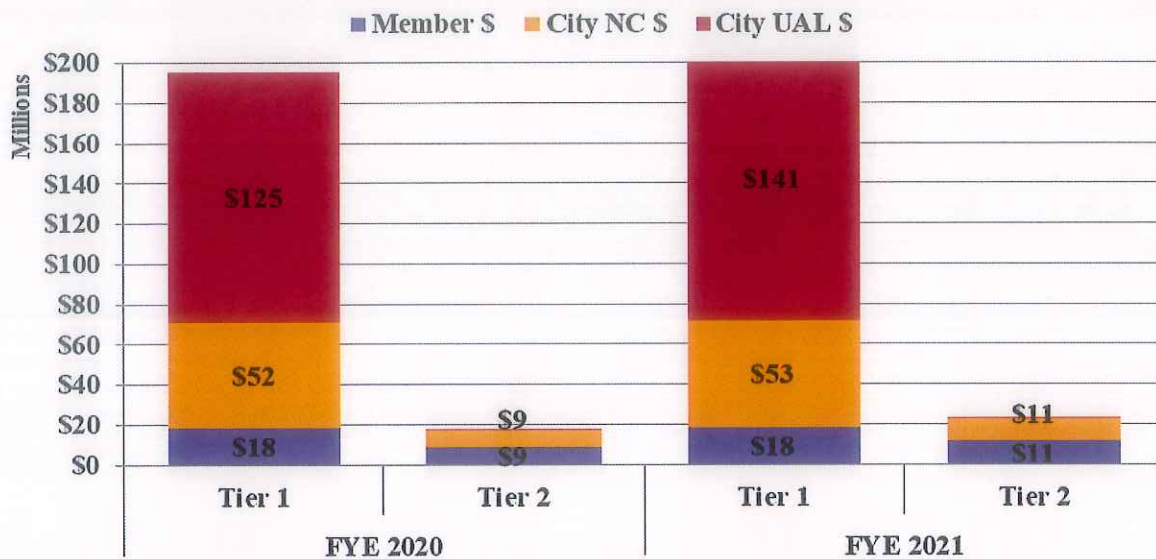
Table I-5 and the chart on the next page summarize the contribution rates and contribution amounts by Tier for the fiscal years ending in 2020 and 2021. Tier 1 rates increased from 2020 to 2021, reflecting the investment losses, assumption changes, and liability losses, offset by changes to the amortization layers. The increase in Tier 2 contribution rates for FYE 2021 is largely attributable to the assumption change. The aggregate city rate increased slightly as a result.

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**Table I-5**

<b>Contribution Rates and Amounts (Throughout the Year)</b>		
	<b>FYE 2021</b>	<b>FYE 2020</b>
<b>Member Rates</b>		
Tier 1	11.15%	11.01%
Tier 2	14.53%	14.43%
<b>Aggregate</b>	<b>12.25%</b>	<b>11.93%</b>
<b>City Contributions</b>		
Tier 1 UAL	\$ 141,198	\$ 125,055
Tier 1 Normal Cost (Including Admin Expenses)	\$ 53,283 32.40%	\$ 52,487 31.79%
Tier 2 Contribution	\$ 11,482 14.53%	\$ 8,717 14.43%
<b>Aggregate</b>	<b>\$ 205,963 84.59%</b>	<b>\$ 186,259 82.59%</b>



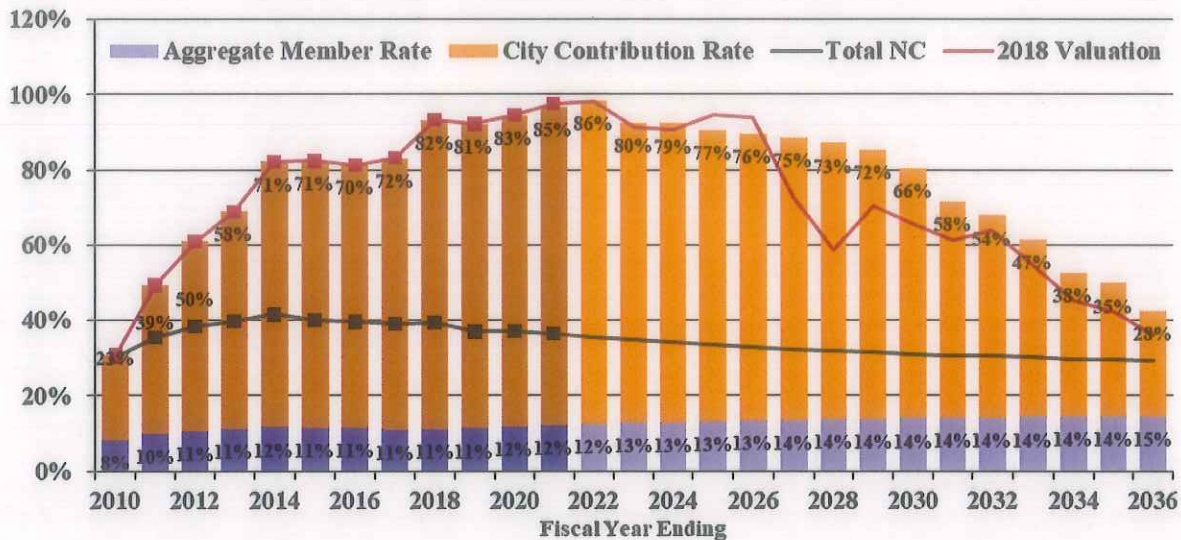


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The chart below shows historical and projected aggregate contribution rates for the Plan compared to those projected in the prior valuation. The purple bars are weighted average member contribution rates for Police and Fire for both Tier 1 and Tier 2. The gold bars are weighted average city contribution rates for Police and Fire for both Tier 1 and Tier 2. The darker shaded bars represent historical amounts and the lighter shades represent projected rates. The projected rates assume that all assumptions are met. The black line shows the weighted average normal cost rate, which is projected to decline as Tier 1 members are replaced by Tier 2 members. All contribution rates above the normal cost rate represent payments toward the UAL. The red line represents the projection from the prior valuation.

**Historical and Projected Aggregate Contribution Rates**



City contribution rates have more than tripled since FYE 2010 increasing from 22.5% of payroll to 84.6% of payroll for FYE 2021. Future City contribution rates are expected to increase slightly for FYE 2022 before declining to about 80% in FYE 2023 and to continue gradually declining thereafter as portions of the UAL are fully amortized. The difference in the pattern of future contribution rates between this year and the 2018 valuation reflects changes to the amortization schedule made by the Board this year.

As shown in the dashboard, there is a wide range of contribution rates due to the potential volatility of investment returns. As a result, the range of contribution rates from the 5<sup>th</sup> to the 95<sup>th</sup> percentile in FYE 2027 (based on a valuation six years from now), is from 19% of payroll to 119% of payroll. Such a wide range is due to the combination of the size of the assets compared to payroll and the standard deviation of the investment portfolio. For these projections, we used a 6.75% expected return and 11.8% standard deviation.

Since the last valuation, projected City contribution rates have increased, primarily due to the investment losses and assumption changes. Section VI of this report provides additional detail on the contribution rates and the amortization schedules separately by Tier and for Police and Fire.



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**SECTION II – IDENTIFICATION AND ASSESSMENT OF RISK**

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

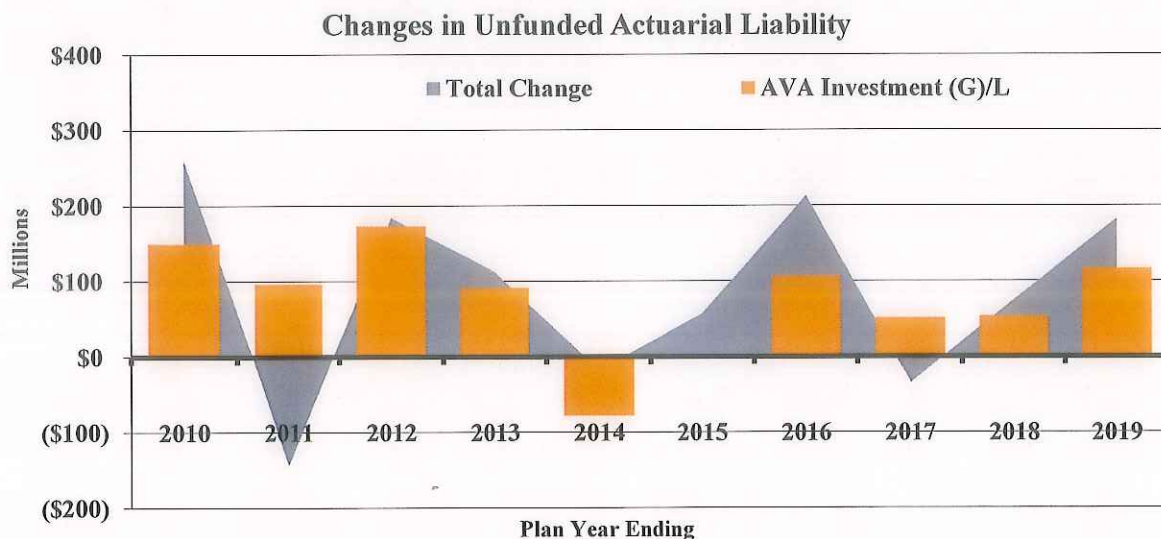
**Identification of Risks**

As we have discussed with the Board, the fundamental risk to the Plan is that the contributions needed to pay the benefits become unaffordable. While there are a number of factors that could lead to contribution amounts becoming unaffordable, we believe the primary risks for this Plan are:

- Investment risk,
- Interest rate risk, and
- Assumption change risk.

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

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

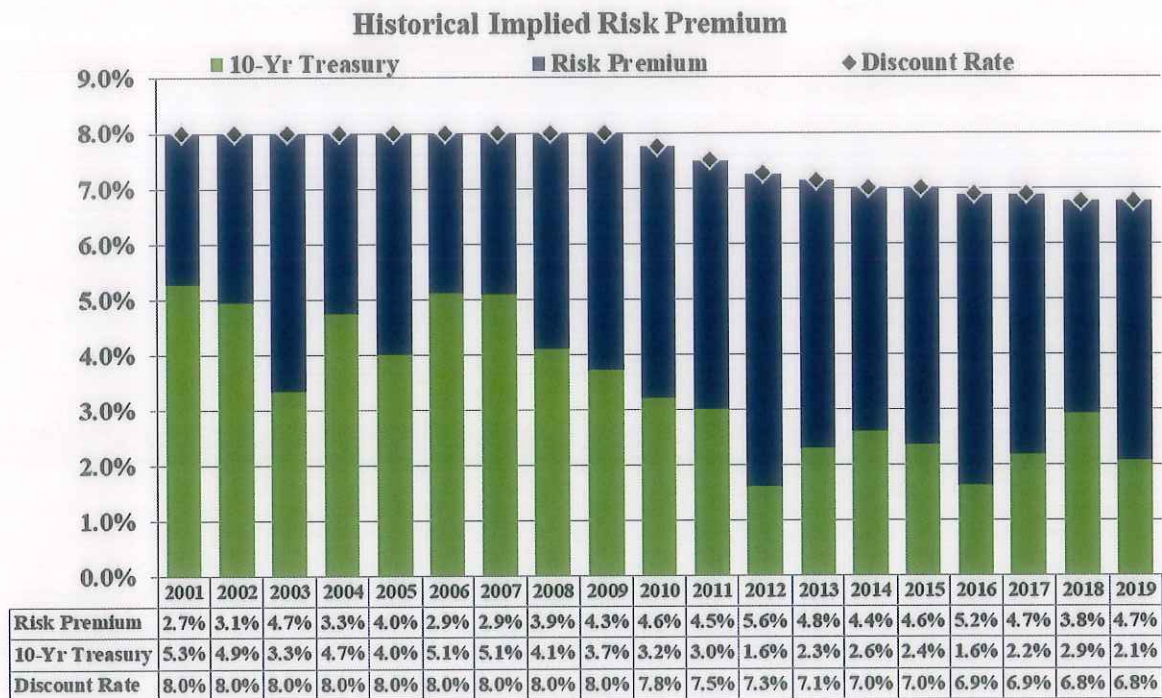


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The chart on the previous page shows the impact of investment gains and losses on the smoothed Actuarial Value of Assets over the last 10 years compared to the Plan's total change in UAL. Investment losses have been a significant contributor to the growth in the UAL.

*Interest rate risk* is the potential for interest rates to be different than expected. For public plans, short-term fluctuations in interest rates have little or no effect as the plan's liability is usually measured based on the expected return on assets. Longer-term trends in interest rates; however, can have a powerful effect. The chart below shows the yield on a 10-year Treasury security compared to the plan's assumed rate of return. The difference is a simple measure of the amount of investment risk taken. As interest rates have declined, plans faced a choice: maintain the same level of risk and reduce the expected rate of return; maintain the same expected rate of return and take on more investment risk; or some combination of the two strategies.



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

As shown in the chart on the following page, there have been consistent changes in assumptions increasing the UAL. Most of these changes are due to reducing the discount rate from 7.75% to



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6.75% over this period, but it also includes changes to demographic assumptions such as mortality and retirement rates. The reductions in the discount rate largely reflect the impact of declining interest rates on future expected investment returns.



### Plan Maturity Measures

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

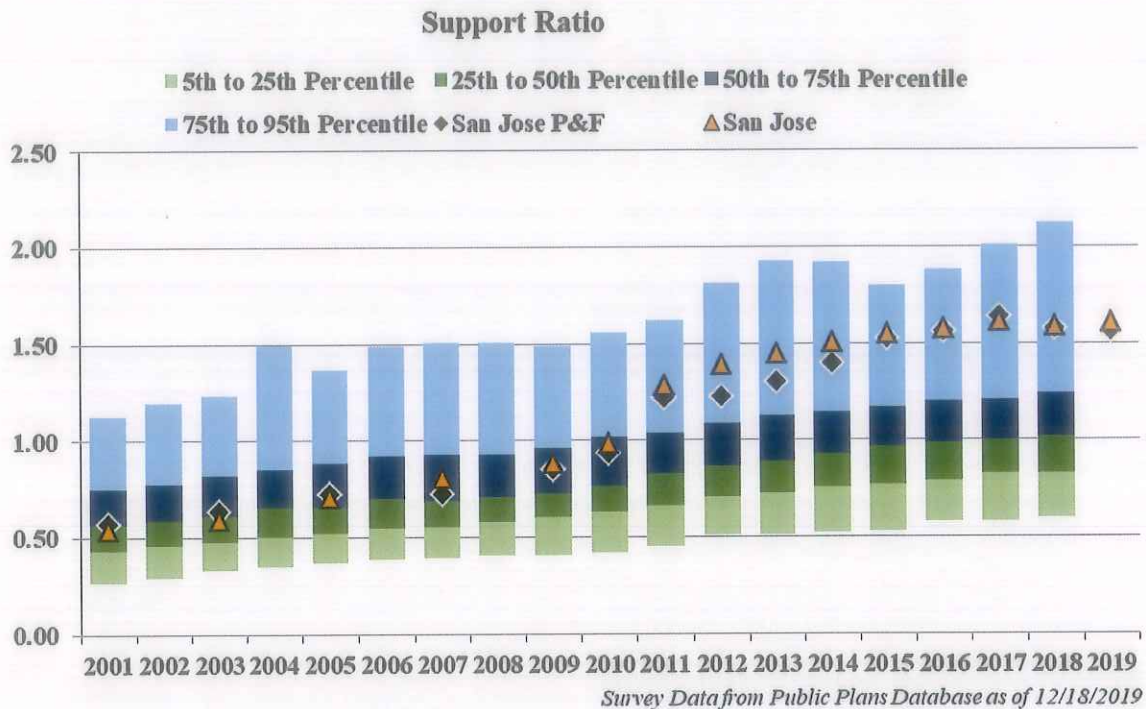
Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic – the larger the plan is compared to the contribution or revenue base that supports it; the more sensitive the plan will be to risk. The measures below have been selected as the most important in understanding the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

#### Support Ratio (Inactives per Active)

One simple measure of plan maturity is the ratio of the number of inactive members (those receiving benefits or entitled to a deferred benefit) to the number of active members. The revenue base supporting the plan is usually proportional to the number of active members, so a relatively high number of inactives compared to actives indicate a larger plan relative to its revenue base as well.

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**SECTION II – IDENTIFICATION AND ASSESSMENT OF RISK**



The chart above shows the distribution from the 5<sup>th</sup> to 95<sup>th</sup> percentile of support ratios for the plans in the Public Plans Database. The black diamond shows how San José Police and Fire compares, and the gold diamond shows how the combined Federated and Police and Fire plans compare. Through 2007, the Plan was in the middle of the distribution even as the support ratio increased. However, after the Great Recession, the Plan's support ratio increased dramatically and is now among the highest compared to the plans in the database.

### Leverage Ratios

Leverage or volatility ratios measure the size of the plan compared to its revenue base more directly. An asset leverage ratio of 5.0, for example, means that if the Plan experiences a 10% loss on assets compared to the expected return, the loss would be equivalent to 50% of payroll. The same investment loss for a plan with an asset leverage ratio of 10.0 would be equivalent to 100% of payroll.

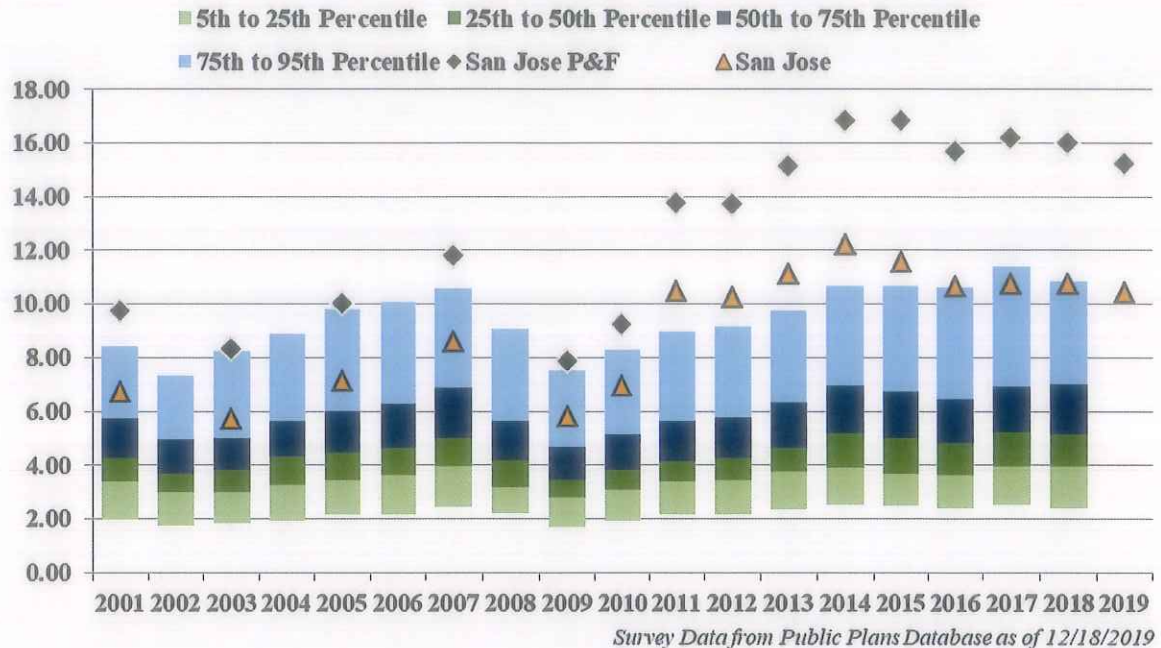
As the Plan becomes better funded, the asset leverage ratio will increase, and if it was 100% funded, the leverage ratio would equal the Actuarial Liability (AL) leverage ratio. The AL leverage ratio also indicates how sensitive the Plan is to experience gains and losses or assumption changes. For example, an assumption change that increases the AL by 5% would add a liability equivalent to about 50% of payroll if the AL leverage ratio is 10.0.



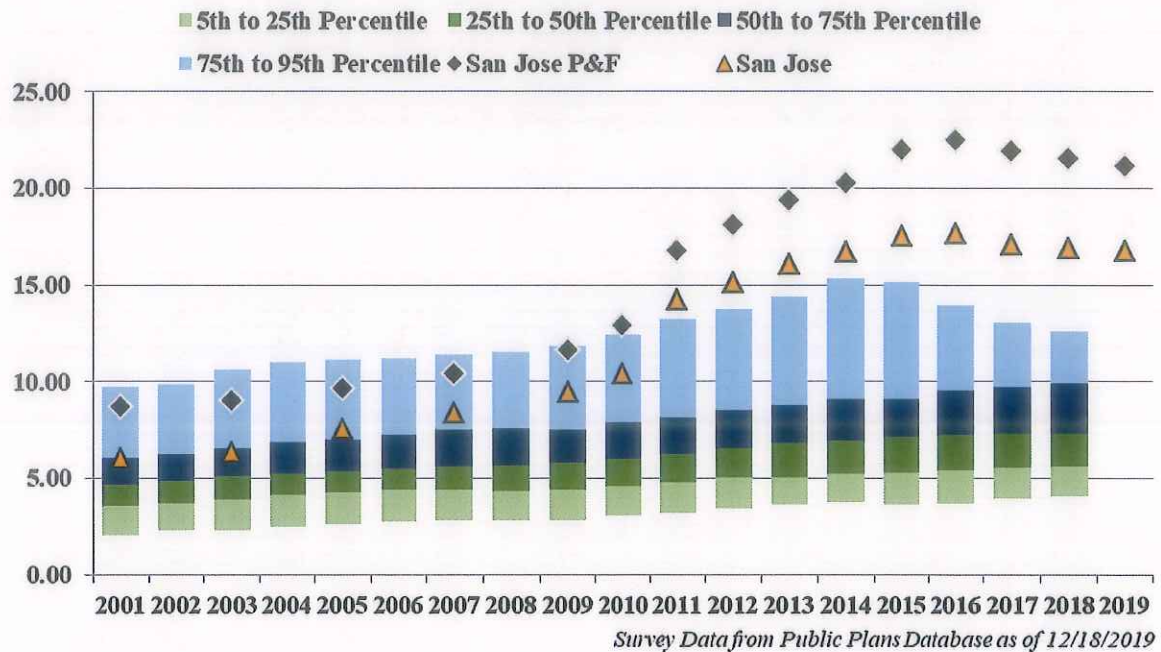
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**MVA Leverage Ratio**



**AL Leverage Ratio**



The charts above show the distribution from the 5<sup>th</sup> to 95<sup>th</sup> percentile of asset and Actuarial Liability leverage ratios for the plans in the Public Plans Database. The black diamond shows

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how San José Police and Fire compares, and the gold diamond shows how the combined Federated and Police and Fire plans compare. As we have discussed with the Board for several years and as is shown in the charts on the previous page, the leverage ratios for the Police and Fire Plan are much higher than most plans. As a Police and Fire plan, it is not unusual to be at the high end of the distribution, but even when combined with Federated, the leverage ratios are still very high, indicating that San José is much more sensitive to risk than most plans.

**Assessing Costs and Risks**

The fundamental risk to the Plan is that the contributions needed to fund the benefits become unaffordable. Assessing this risk, however, is complex because there is no bright line of what is unaffordable and the contribution amounts themselves are affected not just by the experience of the Plan, but also by the interaction of that experience and decisions by the Board related to assumptions, asset smoothing methods, and amortization periods.

**Point in Time Assessments**

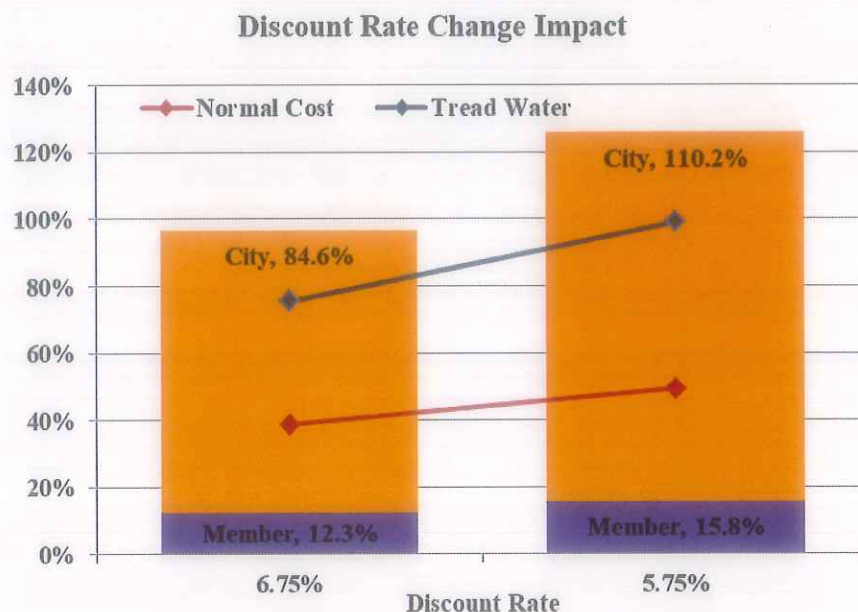
To assess the risks of the Plan independent of the contribution strategy, there are two measures on which to focus: normal cost and interest cost. The normal cost represents the expected cost of the benefits attributable to the next year of service. The interest cost represents the interest on the UAL calculated using the discount rate. Combined, the normal cost plus the interest cost are referred to as the Tread Water Cost. If actual contributions are less than the Tread Water Cost, the UAL would be expected to grow; and, if actual contributions are greater than the Tread Water Cost, the UAL would be expected to shrink.

The stacked bars in the chart on the following page shows the aggregate member and City contribution rates at the current discount rate compared to a discount rate 100 basis points lower. The red line shows the total normal cost rate and the blue line shows the tread water rate based on the two discount rates.



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**SECTION II – IDENTIFICATION AND ASSESSMENT OF RISK**



Decreasing the discount rate by 100 basis points would increase the normal cost rate by over 10% of payroll and the tread water rate by over 23% of payroll. Using the current amortization methods, the City's total contribution rate would increase by about 26% of payroll to over 110% of pay.

The recent declines in discount rates have been largely driven by declines in interest rates that affect expectations of future investment returns. If there are further declines in interest rates or if there is a desire or need to reduce investment risk that reduces expected returns, the discount rate may need to be reduced further and the normal cost and interest cost will increase.

Actual investment returns do not affect the normal cost, but they directly affect the interest cost. One simple measure of the risk inherent in the investment policy is the Interest Cost at Risk (ICaR), which is the amount that the interest cost would increase if the investment returns for one year were two standard deviations below the expected return. Based on the capital market assumptions of Meketa, the standard deviation for the current portfolio is 11.8%, making the investment return used to determine ICaR -16.9% ( $6.75\% - 2 \times 11.8\%$ ).

The chart on the next page shows the contribution rates for the FYE 2021, determined in this valuation report in the far left bar graph and the expected FYE 2022 contribution rates based on a 6.75% investment rate of return for FYE 2020, in the middle of the chart. The FYE 2022 bar graph on the right shows the impact of a -16.9% return for FYE 2020. The tread water cost would increase by over 23% of pay. Using 5-year asset smoothing with a 20% corridor and a 15-year amortization the total contribution rate would increase by 11.9% of pay. The City contribution rate for FYE 2022 in this scenario would be 97.8% of pay and expected to increase in future years.

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SECTION II – IDENTIFICATION AND ASSESSMENT OF RISK



**Stochastic Projections**

If experience has taught us anything, it is that there is a significant level of uncertainty in projections of the future. The largest source of uncertainty is the projection of investment returns. In order to better understand the potential impact of investment returns on the Plan, we have included some stochastic projections in the dashboard and in this section of the report. The stochastic projections are based on a 6.75% geometric return and an 11.8% standard deviation. Each projection contains 10,000 trials that are 15 years in length.

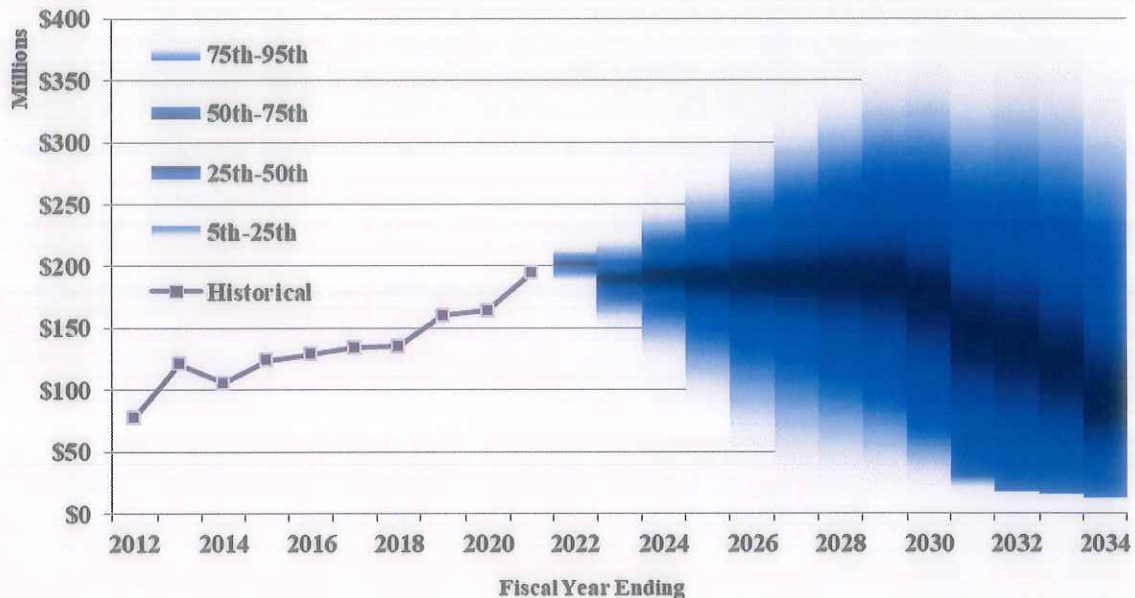
The chart on the next page shows the historical and stochastically projected City contribution amounts for Tier 1. The purple line represents the amounts paid historically or the amounts already determined by an actuarial valuation. The projected amounts are shown as bars that are dark blue at the median of the 10,000 trials and fade to white as the range extends to the 5<sup>th</sup> and 95<sup>th</sup> percentiles of the 10,000 trials. This range is intended to convey the degree of uncertainty in the projections based on future investment returns.



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Historical and Stochastically Projected Tier 1 City Contribution Amounts



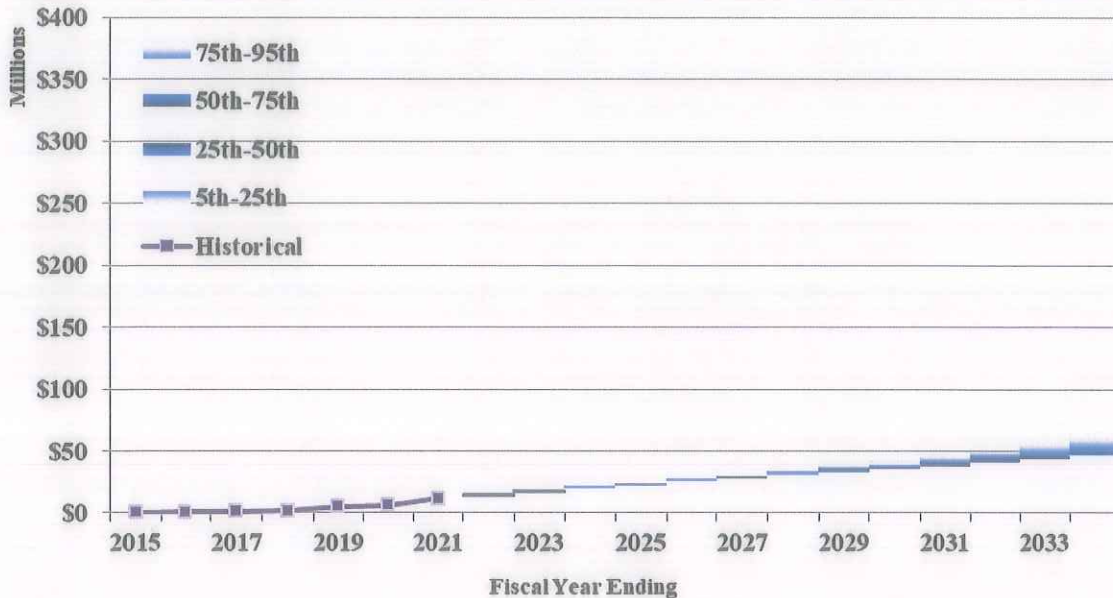
The chart shows a very wide range of potential City contribution amounts depending on actual investment returns. The range between the 5<sup>th</sup> and 95<sup>th</sup> percentile for FYE 2027 (based on the 2025 actuarial valuation) is from a contribution of \$29 million to a contribution of \$321 million. This range is largely driven by the standard deviation of the investment portfolio.

The chart on the following page shows the historical and stochastically projected City contribution amounts for Tier 2. The range of contribution amounts is much narrower for Tier 2 than Tier 1. Tier 2 is projected to grow so quickly and assets are relatively small right now. As a result, actual investment returns have a limited impact on future contribution amounts while the rate of growth will have a larger impact.

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Historical and Stochastically Projected Tier 2 City Contribution Amounts



**More Detailed Assessment**

A more detailed assessment is always valuable to enhance the understanding of the risks identified above. While more detail would provide some additional value, we don't believe it is necessary to perform an in-depth analysis every year. Consequently, we recommend the Board review the less detailed analysis provided above annually and consider a more detailed analysis periodically and when there is a substantial change in the financial position or maturity of the plan.

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**SECTION III – CERTIFICATION**

The purpose of this report is to present the June 30, 2019 Actuarial Valuation of the City of San José Police and Fire Department Retirement Plan (“Plan”). This report is for the use of the Plan and the City of San José.

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

The discount rate used in this report was adopted by the Board of Administration with our input at the November 1, 2018 Board meeting. All other assumptions were adopted at the November 7, 2019 Board meeting based on recommendations from our experience study covering plan experience for the period ending June 30, 2019.

The funding ratios in this report are for the purpose of establishing contribution rates. These measures are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligations.

Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and, changes in plan provisions or applicable law.

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

This report was prepared for the Plan for the purposes described herein. This report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.



William R. Hallmark, ASA, EA, FCA, MAAA  
Consulting Actuary



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



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION IV – ASSETS**

The Plan uses and discloses two different asset measurements which are presented in this section of the report: Market Value and Actuarial Value of Assets. The Market Value of Assets represents the value of the assets if they were liquidated on the valuation date. The Actuarial Value of Assets is a value that smooths annual investment returns over five years to reduce the impact of short-term investment volatility on contribution rates. The Market Value of Assets is used primarily for reporting and disclosure, and the Actuarial Value of Assets is used primarily to determine contribution rates.

This section shows the changes in the Market Value of Assets and develops the Actuarial Value of Assets.

**Statement of Changes in the Market Value of Assets**

Table IV-1 shows the changes in the Market Value of Assets by tier for the current fiscal year and in total for the prior fiscal year.

**Table IV-1**

	Change in Market Value of Assets				
	Fiscal Year Ending 2019				FYE 2018
	Tier 1	Tier 2 Fire	Tier 2 Police	Total	Total
Beginning Market Value	\$ 3,479,134	\$ 4,430	\$ 12,626	\$ 3,496,190	\$ 3,293,257
Contributions					
Member	18,709	1,584	4,518	24,811	23,841
City	170,516	1,584	4,518	176,618	157,712
Total	\$ 189,225	\$ 3,168	\$ 9,036	\$ 201,429	\$ 181,553
Net Investment Earnings	113,422	197	560	114,180	233,474
Benefit Payments	(217,951)	0	(56)	(218,007)	(206,630)
Administrative Expenses	(5,345)	(5)	(19)	(5,369)	(5,464)
Market Value, End of Year	\$ 3,558,486	\$ 7,790	\$ 22,148	\$ 3,588,423	\$ 3,496,190
Estimated Rate of Return	3.2%	3.3%	3.3%	3.2%	7.0%

*Dollar amounts in thousands*

The net investment earnings for the year ended June 30, 2019 represents approximately a 3.2% return on the Market Value of Assets compared to an assumed return of 6.75%. For the year ended June 30, 2018, the net investment return was approximately 7.0% (6.875% was assumed).

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION IV – ASSETS**

**Actuarial Value of Assets**

To determine on-going contribution amounts, most pension funds use an Actuarial Value of Assets that smooths year-to-year market value returns in order to reduce the volatility of contribution rates.

The Actuarial Value of Assets is calculated by recognizing the deviation of actual investment returns compared to the expected return (6.75% for FYE 2019, 6.875% for FYE's 2017 and 2018, and 7.00% for FYE's 2015 and 2016) over a five-year period. The dollar amount of the expected return on the Market Value of Assets is determined using the actual contributions, benefit payments, and administrative expenses during the year. Any difference between the expected return and the actual net investment earnings is considered a gain or loss. Table IV-2 on the next page shows the calculation of the Actuarial Value of Assets separately for each tier. For each of the last four years, it shows the actual earnings, the expected earnings, the gain or loss and the portion of the gain or loss that is not recognized in the current Actuarial Value of Assets. These deferred amounts will be recognized in future years.



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION IV – ASSETS**

**Table IV-2**

<b>Development of Actuarial Value of Assets</b>					
	<b>Fiscal Year Ending 2019</b>				<b>FYE 2018</b>
	<b>Tier 1</b>	<b>Tier 2 Fire</b>	<b>Tier 2 Police</b>	<b>Total</b>	<b>Total</b>
Market Value of Assets (MVA)	\$ 3,558,486	\$ 7,790	\$ 22,148	\$ 3,588,423	\$ 3,496,190
	<b>FYE 2019</b>				<b>FYE 2018</b>
Actual Earnings	\$ 113,422	\$ 197	\$ 560	\$ 114,180	\$ 233,474
Expected Earnings	239,559	404	1,150	241,113	230,741
Investment Gain or (Loss)	(126,137)	(207)	(589)	(126,934)	2,733
Deferred (80%)	(100,910)	(166)	(471)	(101,547)	\$ 2,187
	<b>FYE 2018</b>				<b>FYE 2017</b>
Actual Earnings	\$ 232,623	\$ 212	\$ 640	\$ 233,474	\$ 292,733
Expected Earnings	229,924	203	614	230,741	212,514
Investment Gain or (Loss)	2,699	9	26	2,733	80,220
Deferred (60%)	\$ 1,619	\$ 5	\$ 15	\$ 1,640	48,132
	<b>FYE 2017</b>				<b>FYE 2016</b>
Actual Earnings	\$ 292,157	\$ 110	\$ 467	\$ 292,733	\$ (29,206)
Expected Earnings	212,107	78	330	212,514	221,094
Investment Gain or (Loss)	80,050	33	137	80,220	(250,300)
Deferred (40%)	32,020	13	55	32,088	(100,120)
	<b>FYE 2016</b>				<b>FYE 2015</b>
Actual Earnings	\$ (29,178)	\$ (3)	\$ (24)	\$ (29,206)	\$ (27,690)
Expected Earnings	220,891	25	178	221,094	225,302
Investment Gain or (Loss)	(250,069)	(28)	(203)	(250,300)	(252,992)
Deferred (20%)	(50,014)	(6)	(41)	(50,060)	(50,598)
<b>Total Deferred Gain or (Loss)</b>	<b>\$ (117,284)</b>	<b>\$ (153)</b>	<b>\$ (442)</b>	<b>\$ (117,879)</b>	<b>\$ (100,400)</b>
Preliminary Actuarial Value of Assets	\$ 3,675,770	\$ 7,943	\$ 22,589	\$ 3,706,302	\$ 3,596,590
Minimum (80% of MVA)	\$ 2,846,789	\$ 6,232	\$ 17,718	\$ 2,870,738	\$ 2,796,952
Maximum (120% of MVA)	\$ 4,270,183	\$ 9,348	\$ 26,577	\$ 4,306,107	\$ 4,195,428
<b>Actuarial Value of Assets</b>	<b>\$ 3,675,770</b>	<b>\$ 7,943</b>	<b>\$ 22,589</b>	<b>\$ 3,706,302</b>	<b>\$ 3,596,590</b>
Ratio of Actuarial to Market	103.3%	102.0%	102.0%	103.3%	102.9%
Estimated Rate of Return	3.6%	6.1%	5.9%	3.6%	5.3%

*Dollar amounts in thousands*



CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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SECTION IV – ASSETS

On the basis of the smoothed Actuarial Value of Assets, the return for the year ending June 30, 2019 was approximately 3.6%, which is less than the assumed return of 6.75%. The estimated rate of return varies by tier, reflecting the different cash flows for each tier and the different levels of assets for each tier in each of the last four years.

The chart below shows the historical rates of return on both the Market and Actuarial Values of Assets compared to the assumed rates of return (the red line). Because of the 5-year smoothing, the return on the actuarial value is less volatile than the return on the market value. While the return on the market value exceeded the assumed return in six of the 11 years, the return on the actuarial value of assets only exceeded the assumed return in one of the 11 years.



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION V – MEASURES OF LIABILITY**

This section presents detailed information on liability measures for the Plan for funding purposes, including:

- Present Value of Future Benefits,
- Normal cost
- Actuarial Liability, and
- Analysis of changes in the Unfunded Actuarial Liability during the year.

**Present Value of Future Benefits**

The present value of future benefits represents the amount of money today that is expected to be needed to pay all benefits both earned as of the valuation date and expected to be earned in the future by current plan members under the current plan provisions if all assumptions are met. Table V-1 below shows the present value of future benefits as of June 30, 2019 and June 30, 2018 separately by Tier for Police and Fire. Police Tier 2 members entered the Plan beginning August 4, 2013. Fire Tier 2 members entered the Plan beginning January 2, 2015.

**Table V-1**

Present Value of Future Benefits						
	Fire			Police		
	6/30/2019	6/30/2018	% Change	6/30/2019	6/30/2018	% Change
<b>Tier 1</b>						
Actives	\$ 835,811	\$ 812,415	2.9%	\$ 1,134,535	\$ 1,104,215	2.7%
Deferred Vested	9,069	7,762	16.8%	95,139	89,767	6.0%
In Pay Status	<u>1,213,424</u>	<u>1,158,431</u>	<u>4.7%</u>	<u>2,128,637</u>	<u>1,971,344</u>	<u>8.0%</u>
<b>Total Tier 1</b>	<b>\$ 2,058,304</b>	<b>\$ 1,978,608</b>	<b>4.0%</b>	<b>\$ 3,358,311</b>	<b>\$ 3,165,326</b>	<b>6.1%</b>
<b>Tier 2</b>						
Actives	\$ 71,989	\$ 49,911	44.2%	\$ 145,183	\$ 93,599	55.1%
Deferred Vested	47	35	34.3%	661	520	27.1%
In Pay Status	<u>0</u>	<u>0</u>	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>N/A</u>
<b>Total Tier 2</b>	<b>\$ 72,036</b>	<b>\$ 49,946</b>	<b>44.2%</b>	<b>\$ 145,844</b>	<b>\$ 94,119</b>	<b>55.0%</b>
<b>Total</b>	<b>\$ 2,130,340</b>	<b>\$ 2,028,554</b>	<b>5.0%</b>	<b>\$ 3,504,155</b>	<b>\$ 3,259,445</b>	<b>7.5%</b>

*Dollar amounts in thousands*

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION V – MEASURES OF LIABILITY**

**Normal Cost**

Under the Entry Age (EA) actuarial cost method, the present value of future benefits for each individual is spread over the individual's expected working career under the Plan as a level percentage of the individual's expected pay. The normal cost rate is determined by taking the value of each member's projected future benefits divided by the value of the each member's expected future salary, both at entry age into the Plan. The normal cost rate is multiplied by current salary to determine each member's normal cost. The normal cost of the Plan is the sum of the normal costs for each individual in the Plan. The normal cost represents the amount of money today that is expected to be needed to pay the benefits attributed to the next year of service if all assumptions are met. Table V-2 below shows the EA normal cost and Total normal cost rates as of June 30, 2019 and June 30, 2018 separately by Tier for Police and Fire, as well as a breakdown of the normal cost rate between the Retirement and COLA funds.

**Table V-2**

Entry Age Normal Cost By Group						
	Fire			Police		
	6/30/2019	6/30/2018	% Change	6/30/2019	6/30/2018	% Change
<b>Tier 1</b>						
Retirement	\$ 17,717	\$ 17,400	1.8%	\$ 17,506	\$ 16,907	3.5%
Termination	1,258	1,488	-15.5%	5,927	6,295	-5.9%
Death	279	397	-29.7%	314	446	-29.6%
Disability	10,678	10,210	4.6%	12,961	12,741	1.7%
Reciprocity	<u>182</u>	<u>182</u>	<u>0.4%</u>	<u>1,014</u>	<u>1,035</u>	<u>-2.0%</u>
<b>Total Tier 1 Normal Cost</b>	<b>\$ 30,114</b>	<b>\$ 29,676</b>	<b>1.5%</b>	<b>\$ 37,721</b>	<b>\$ 37,425</b>	<b>0.8%</b>
<b>Expected Payroll</b>	<b>\$ 71,385</b>	<b>\$ 71,953</b>	<b>-0.8%</b>	<b>\$ 96,246</b>	<b>\$ 95,910</b>	<b>0.4%</b>
<b>Normal Cost Rate</b>	<b>42.19%</b>	<b>41.24%</b>	<b>0.95%</b>	<b>39.20%</b>	<b>39.01%</b>	<b>0.19%</b>
Retirement	28.85%	28.40%	0.45%	27.10%	27.01%	0.09%
COLA	13.34%	12.84%	0.50%	12.10%	12.00%	0.10%
<b>Tier 2</b>						
Retirement	\$ 1,608	\$ 1,163	38.2%	\$ 3,813	\$ 2,444	56.0%
Termination	131	115	14.1%	2,012	1,225	64.3%
Death	47	45	4.7%	121	96	25.7%
Disability	<u>1,864</u>	<u>1,389</u>	<u>34.2%</u>	<u>4,566</u>	<u>2,947</u>	<u>55.0%</u>
<b>Total Tier 2 Normal Cost</b>	<b>\$ 3,650</b>	<b>\$ 2,712</b>	<b>34.6%</b>	<b>\$ 10,513</b>	<b>\$ 6,712</b>	<b>56.6%</b>
<b>Expected Payroll</b>	<b>\$ 12,070</b>	<b>\$ 9,066</b>	<b>33.1%</b>	<b>\$ 38,475</b>	<b>\$ 24,715</b>	<b>55.7%</b>
<b>Normal Cost Rate</b>	<b>30.24%</b>	<b>29.91%</b>	<b>0.33%</b>	<b>27.32%</b>	<b>27.16%</b>	<b>0.16%</b>
Retirement	23.79%	23.62%	0.17%	21.64%	21.57%	0.07%
COLA	6.45%	6.29%	0.16%	5.68%	5.59%	0.09%

*Dollar amounts in thousands*



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION V – MEASURES OF LIABILITY**

**Actuarial Liability**

The Actuarial Liability represents the amount of money today that is expected to be needed to pay for benefits attributed to service prior to the valuation date under the EA method if all assumptions are met. It is the difference between the present value of future benefits and the present value of future normal costs. Table V-3 below shows the Actuarial Liability as of June 30, 2019 and June 30, 2018 separately by Tier for Police and Fire, as well as a breakdown of the Actuarial Liability between the Retirement and COLA funds.

**Table V-3**

Actuarial Liability						
	Fire			Police		
	6/30/2019	6/30/2018	% Change	6/30/2019	6/30/2018	% Change
<b>Tier 1</b>						
Actives						
Retirement	\$ 442,147	\$ 420,742	5.1%	\$ 733,822	\$ 691,799	6.1%
Termination	5,389	3,480	54.9%	5,692	25,561	-77.7%
Death	1,436	2,028	-29.2%	1,820	2,527	-28.0%
Disability	<u>159,348</u>	<u>152,048</u>	<u>4.8%</u>	<u>161,821</u>	<u>153,452</u>	<u>5.5%</u>
Total Actives	\$ 608,320	\$ 578,298	5.2%	\$ 903,155	\$ 873,339	3.4%
Deferred Vested	\$ 9,069	\$ 7,762	16.8%	\$ 95,139	\$ 89,767	6.0%
In Pay Status						
Service Retirees	\$ 499,249	\$ 464,692	7.4%	\$ 1,423,962	\$ 1,292,766	10.1%
Beneficiaries	86,688	83,170	4.2%	92,287	83,601	10.4%
Disabled Retirees	<u>627,487</u>	<u>610,569</u>	<u>2.8%</u>	<u>612,388</u>	<u>594,977</u>	<u>2.9%</u>
Total In Pay Status	\$ 1,213,424	\$ 1,158,431	4.7%	\$ 2,128,637	\$ 1,971,344	8.0%
<b>Tier 1 Actuarial Liability</b>	<b>\$ 1,830,813</b>	<b>\$ 1,744,491</b>	<b>4.9%</b>	<b>\$ 3,126,931</b>	<b>\$ 2,934,450</b>	<b>6.6%</b>
Retirement	1,054,566	1,011,764	4.2%	1,792,577	1,696,712	5.7%
COLA	776,247	732,727	5.9%	1,334,354	1,237,738	7.8%
<b>Tier 2</b>						
Actives						
Retirement	\$ 3,777	\$ 2,261	67.0%	\$ 10,770	\$ 6,032	78.5%
Termination	57	(92)	-162.0%	2,818	1,401	101.1%
Death	61	49	24.5%	168	124	35.5%
Disability	<u>3,867</u>	<u>2,322</u>	<u>66.5%</u>	<u>8,457</u>	<u>4,835</u>	<u>74.9%</u>
Total Actives	\$ 7,762	\$ 4,540	71.0%	\$ 22,213	\$ 12,392	79.3%
Deferred Vested	\$ 47	\$ 35	N/A	\$ 661	\$ 520	27.1%
<b>Tier 2 Actuarial Liability</b>	<b>\$ 7,809</b>	<b>\$ 4,575</b>	<b>70.7%</b>	<b>\$ 22,874</b>	<b>\$ 12,912</b>	<b>77.2%</b>
Retirement	6,117	3,568	71.4%	17,854	10,150	75.9%
COLA	1,692	1,007	68.0%	5,020	2,762	81.8%
<b>Total Actuarial Liability</b>	<b>\$ 1,838,622</b>	<b>\$ 1,749,066</b>	<b>5.1%</b>	<b>\$ 3,149,805</b>	<b>\$ 2,947,362</b>	<b>6.9%</b>

*Dollar amounts in thousands*

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN**  
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**SECTION VI – CONTRIBUTIONS**

Under the contribution allocation procedure employed by the Plan, there are three components to the total contribution: the normal cost, assumed administrative expenses, and the Unfunded Actuarial Liability contribution. The normal cost rate was developed in Section V. This section develops the UAL and administrative expense contribution rates and divides the contributions between the members and the City.

Table VI-1 below shows the outstanding balance, remaining period, and amortization payments for each component of the Tier 1 member UAL as of June 30, 2019.

**Table VI-1**

Tier 1 Member UAL Amortization Bases and Payments						
Source	Date	Balance	Remaining Period	Amortization Payment		
				Fire	Police	Total
Rate Increase Delay	12/17/2006	80	2.5	0	35	35
Reclassified Classics	6/30/2016	65	15.0	1	5	6
Reclassified Fed Svc	6/30/2016	25	N/A	0	2	2
Reclassified Rehires	6/30/2016	333	N/A	5	23	28
<b>Total Members</b>		<b>\$ 502</b>		<b>\$ 6</b>	<b>\$ 65</b>	<b>\$ 71</b>
Retirement		271		3	40	43
COLA		231		3	25	28

*Dollar amounts in thousands*

The components attributable to reclassifying members from Tier 2 to Tier 1 due to rehire or prior Federated service are paid by the individual affected members at fixed special contribution rates of 1.96% and 0.87% respectively. These special contribution rates cease for an individual member when their portion of the UAL has been paid off. The payments for reclassified classic members are paid by all classic members. Table VI-2 below shows the calculation of the classic member special contribution rate for FYE 2021. The FYE 2020 rates are the original rates established when payments began.

**Table VI-2**

	Classic Member Contribution Rate					
	Fiscal Year Ending 2021			Fiscal Year Ending 2020		
	Retirement	COLA	Total	Retirement	COLA	Total
Classic UAL Payment	\$ 3	\$ 3	\$ 6			
Expected Classic Payroll			\$ 2,377			
<b>Classic Member Rate</b>	<b>0.12%</b>	<b>0.14%</b>	<b>0.26%</b>	<b>0.28%</b>	<b>0.32%</b>	<b>0.60%</b>

*Dollar amounts in thousands*



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION VI – CONTRIBUTIONS**

The remaining amortization periods for several components of the City's Tier 1 UAL amortization were adjusted to smooth the pattern of amortization payments. Table VI-3 below shows the remaining amortization periods prior to the changes, after the changes, and the net change for each component. Remaining periods for amortization payments due to assumption changes were extended four years to match the remaining period if the current 20-year amortization policy had been in place when the assumption changes were made.

**Table VI-3**

Valuation Year	Remaining Amortization Periods					
	Prior to Changes		After Changes		Net Change	
	Gains and Losses	Assumption Changes	Gains and Losses	Assumption Changes	Gains and Losses	Assumption Changes
2005	2		2		0	
2007	4	4	7	8	3	4
2009	6	6	7	10	1	4
2010	7	7	7	11	0	4
2011	8	12	7	12	-1	0
2012	9	13	9	13	0	0
2013	10	14	10	14	0	0
2014	11	15	12	15	1	0
2015	12	16	12	16	0	0
2016	12	17	12	17	0	0
2017	13	18	13	18	0	0
2018	14	19	14	19	0	0
2019	15	20	15	20	0	0

Table VI-4 on the following page shows the outstanding balance, remaining period, and amortization payments for each component of the Tier 1 City UAL as of June 30, 2019. Each component is amortized over the remaining period shown in the table with payments assumed to increase 2.50% each year. At the bottom of the table, the total is divided into the portion attributable to the basic retirement benefits and the portion attributable to COLA benefits. These amounts are used to set separate contribution rates for the basic retirement benefits and the COLA benefits portions of the Plan.



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**SECTION VI – CONTRIBUTIONS**

**Table VI-4**

Tier 1 City UAL Amortization Bases and Payments						
Source	Date	Balance	Remaining Period	Amortization Payment		
				Fire	Police	Total
Experience Loss	6/30/2005	\$ 12,392	2.0	\$ 2,922	\$ 3,827	\$ 6,749
Ben Improvement	6/30/2005	10,151	2.0	0	5,528	5,528
Ben Improvement	6/30/2007	15,928	4.0	4,513	0	4,513
Experience Gain	6/30/2007	(66,478)	7.0	(4,942)	(6,472)	(11,414)
Assumption Change	6/30/2007	15,455	8.0	1,025	1,342	2,367
Experience Loss	6/30/2009	152,089	7.0	11,307	14,806	26,114
Assumption Change	6/30/2009	90,777	10.0	5,004	6,552	11,556
Experience Loss	6/30/2010	109,397	7.0	8,133	10,650	18,783
Assumption Change	6/30/2010	71,629	11.0	3,658	4,790	8,447
Experience Gain	6/30/2011	(185,071)	7.0	(13,759)	(18,017)	(31,777)
Assumption Change	6/30/2011	49,380	12.0	2,355	3,084	5,439
Experience Loss	6/30/2012	105,548	9.0	6,342	8,305	14,648
SRBR Elimination	6/30/2012	(25,741)	9.0	(1,547)	(2,025)	(3,572)
Assumption Change	6/30/2012	98,281	13.0	4,408	5,772	10,180
Experience Loss	6/30/2013	68,015	10.0	3,749	4,909	8,658
Assumption Change	6/30/2013	26,364	14.0	1,118	1,465	2,583
Experience Gain	6/30/2014	(55,719)	12.0	(2,657)	(3,480)	(6,137)
Assumption Change	6/30/2014	53,086	15.0	2,141	2,803	4,944
Experience Gain	6/30/2015	(9,229)	12.0	(440)	(576)	(1,017)
Assumption Change	6/30/2015	87,064	16.0	3,352	4,389	7,742
Experience Gain	6/30/2016	149,106	12.0	7,111	9,312	16,423
Assumption Change	6/30/2016	71,083	17.0	2,623	3,434	6,057
Measure F (Rehires)	6/30/2016	2,906	13.0	41	260	301
Experience Loss	6/30/2017	102,551	13.0	4,599	6,023	10,622
Assumption Change	6/30/2017	(129,748)	18.0	(4,603)	(6,028)	(10,631)
Measure F (Classic/Fed)	6/30/2018	93	14.0	1	8	9
Experience Loss	6/30/2018	40,827	14.0	1,732	2,268	4,000
Assumption Change	6/30/2018	75,527	19.0	2,584	3,384	5,968
Experience Loss	6/30/2019	143,701	15.0	5,795	7,589	13,384
Assumption Change	6/30/2019	81,072	20.0	2,682	3,512	6,194
2020 UAL Payment		121,037				
<b>Total City</b>		<b>\$ 1,281,472</b>		<b>\$ 59,247</b>	<b>\$ 77,414</b>	<b>\$ 136,661</b>
Retirement		654,614		26,344	34,306	60,650
COLA		626,858		32,903	43,108	76,011

*Dollar amounts in thousands*

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION VI – CONTRIBUTIONS**

Table VI-5 below shows the outstanding balance, remaining period, and amortization payments for each component of the Tier 2 UAL as of June 30, 2019. Each component is amortized from the valuation date in which it was first recognized with payments assumed to increase 2.50% each year. All components of the Tier 2 UAL are split evenly between the members and the City.

**Table VI-5**

Tier 2 UAL Amortization Bases						
Source	Date	Outstanding Balance		Remaining Period	Amortization Payment	
		Fire	Police		Fire	Police
Members and City						
Experience Gain	6/30/2014	\$ 0	\$ (25)	12.0	\$ 0	\$ (3)
Assumption Change	6/30/2014	0	(4)	15.0	0	(0)
Experience Gain	6/30/2015	42	18	12.0	5	2
Assumption Change	6/30/2015	7	(17)	16.0	1	(2)
Experience Gain	6/30/2016	(56)	(130)	12.0	(6)	(14)
Assumption Change	6/30/2016	18	87	17.0	2	7
Measure F (Rehires)	6/30/2016	206	667	13.0	21	69
Experience Loss	6/30/2017	431	781	13.0	45	81
Assumption/Method Change	6/30/2017	(143)	(486)	18.0	(12)	(40)
Experience Loss	6/30/2018	(492)	(1,029)	14.0	(48)	(101)
Assumption/Method Change	6/30/2018	142	418	19.0	11	33
Experience Loss	6/30/2019	(79)	15	15.0	(7)	1
Assumption/Method Change	6/30/2019	(209)	(11)	20.0	(16)	(1)
Total Tier 2		\$ (134)	\$ 285		\$ (6)	\$ 33
Retirement		(283)	(510)		(23)	(46)
COLA		149	795		17	79

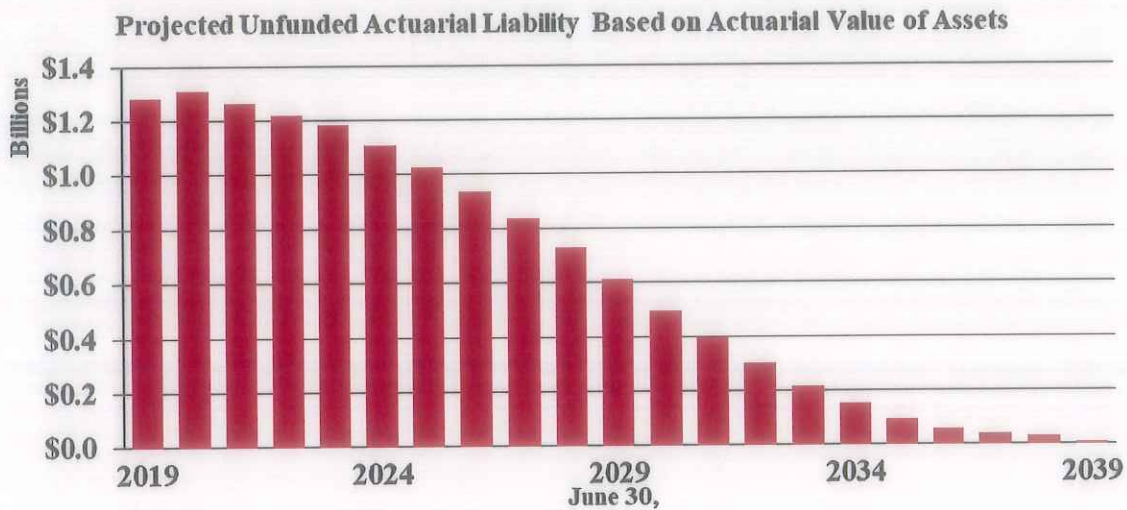
*Dollar amounts in thousands*

The chart on the following page shows the projected aggregate balance of the UAL based on the Actuarial Value of Assets for the Plan under the amortization schedules shown above assuming all expected payments are made and all assumptions are met. This projection includes new amortization bases for the unrecognized investment gains and losses that will be recognized over the next four years.



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION VI – CONTRIBUTIONS**



In addition to the UAL payments shown above, Tier 1 members pay 3/11ths of the normal cost (excluding reciprocity normal cost) plus their historical share of administrative expenses. Tier 2 members pay half of the EA normal cost, half of administrative expenses, and half of the UAL payments.

Based on the 2019 Experience Study, the administrative expense assumption was changed to \$1,275 per member for FYE 2020 with annual increases of 3.25%. Table VI-6 below shows the development of the administrative expense rates for FYE 2021.

**Table VI-6**

Administrative Expense By Group				
	Fire		Police	
	Tier 1	Tier 2	Tier 1	Tier 2
Members	1,467	126	2,322	437
Administrative Expense	\$ 1,931	\$ 166	\$ 3,057	\$ 575
<b>Member Admin Expense Rate</b>	<b>0.28%</b>	<b>0.41%</b>	<b>0.28%</b>	<b>0.49%</b>
Retirement	0.19%	0.32%	0.19%	0.39%
COLA	0.09%	0.09%	0.09%	0.10%
<b>City Admin Expense Rate</b>	<b>2.43%</b>	<b>0.41%</b>	<b>3.00%</b>	<b>0.49%</b>
Retirement	1.66%	0.32%	2.07%	0.39%
COLA	0.77%	0.09%	0.93%	0.10%

*Dollar amounts in thousands*



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION VI – CONTRIBUTIONS**

Table VI-7 below shows the member contribution rates for FYE 2021 by Tier split between Police and Fire groups. All Tier 1 members contribute at the rates shown in the subtotal. Certain Tier 1 members also pay a portion of the cost under Measure F either individually or as a part of a designated group as described above. The Measure F UAL rates shown in the table are averaged over the entire Tier 1 payroll. Individuals may pay at a substantially higher rate.

**Table VI-7**

Fiscal Year Ending 2021 Member Contribution Rates						
	Fire			Police		
	Retirement	COLA	Total	Retirement	COLA	Total
<b>Tier 1</b>						
Normal Cost	7.82%	3.62%	11.44%	7.16%	3.24%	10.40%
Admin Expense	0.19%	0.09%	0.28%	0.19%	0.09%	0.28%
Regular UAL	<u>0.00%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>0.03%</u>	<u>0.01%</u>	<u>0.04%</u>
<b>Subtotal</b>	<b>8.01%</b>	<b>3.71%</b>	<b>11.72%</b>	<b>7.38%</b>	<b>3.34%</b>	<b>10.72%</b>
Measure F UAL	<u>0.00%</u>	<u>0.01%</u>	<u>0.01%</u>	<u>0.02%</u>	<u>0.01%</u>	<u>0.03%</u>
<b>Total</b>	<b>8.01%</b>	<b>3.72%</b>	<b>11.73%</b>	<b>7.40%</b>	<b>3.35%</b>	<b>10.75%</b>
<b>Tier 2</b>						
Normal Cost	11.90%	3.23%	15.13%	10.82%	2.84%	13.66%
Admin Expense	0.32%	0.09%	0.41%	0.39%	0.10%	0.49%
UAL	<u>-0.06%</u>	<u>0.05%</u>	<u>-0.01%</u>	<u>-0.04%</u>	<u>0.07%</u>	<u>0.03%</u>
<b>Total</b>	<b>12.16%</b>	<b>3.37%</b>	<b>15.53%</b>	<b>11.17%</b>	<b>3.01%</b>	<b>14.18%</b>

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION VI – CONTRIBUTIONS**

Table VI-8 below shows the estimated dollar amounts of the City's contributions assuming contributions are made throughout the fiscal year.

**Table VI-8**

Fiscal Year Ending 2021 Estimated City Contributions Dollar Contributions Throughout the Year						
	Fire			Police		
	Retirement	COLA	Total	Retirement	COLA	Total
Tier 1 UAL Payment	\$ 27,219	\$ 33,995	\$ 61,213	\$ 35,445	\$ 44,539	\$ 79,984
Tier 1 Normal Cost	\$ 14,979 21.03%	\$ 6,923 9.72%	\$ 21,902 30.75%	\$ 18,593 19.94%	\$ 8,260 8.86%	\$ 26,853 28.80%
Tier 1 Admin Expenses	\$ 1,184 1.66%	\$ 547 0.77%	\$ 1,732 2.43%	\$ 1,933 2.07%	\$ 862 0.93%	\$ 2,796 3.00%
Tier 2 Contribution	\$ 2,508 12.16%	\$ 695 3.37%	\$ 3,204 15.53%	\$ 6,521 11.17%	\$ 1,757 3.01%	\$ 8,279 14.18%
<b>Aggregate Contribution</b>	<b>\$ 45,891 49.97%</b>	<b>\$ 42,160 45.90%</b>	<b>\$ 88,051 95.87%</b>	<b>\$ 62,493 41.21%</b>	<b>\$ 55,419 36.55%</b>	<b>\$ 117,912 77.76%</b>

*Dollar amounts in thousands*

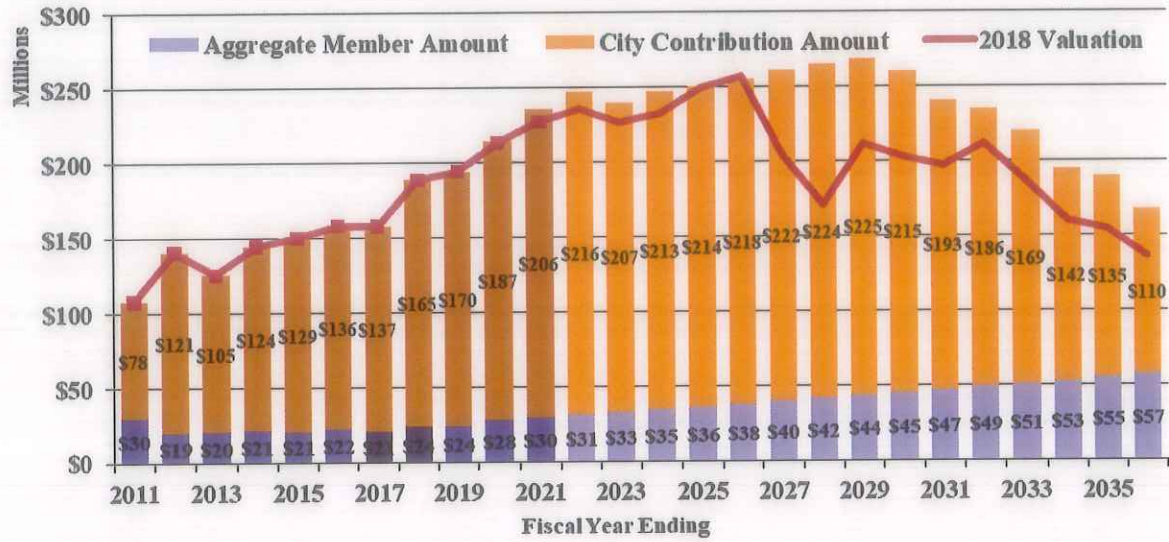
The chart on the next page shows historical and projected aggregate contribution amounts for the Plan compared to those projected in the prior valuation. The purple bars are member contribution amounts for Police and Fire for both Tier 1 and Tier 2. The gold bars are city contribution amounts for Police and Fire for both Tier 1 and Tier 2. The darker shaded bars represent historical amounts and the lighter shades represent projected amounts. The projected amounts assume that all assumptions are met. The red line represents the projection from the prior valuation.



CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT

SECTION VI – CONTRIBUTIONS

Historical and Projected Aggregate Contribution Amounts



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**SECTION VII – ACTUARIAL SECTION OF THE CAFR**

The Government Finance Officers Association (GFOA) maintains a checklist of items to be included in the System's Comprehensive Annual Financial Report (CAFR) in order to receive recognition for excellence in financial reporting. The schedules in this section are listed by the GFOA for inclusion in the Actuarial Section of the System's CAFR.

**Table VII-1**

Schedule of Funding Progress						
Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Liability (AL)	Unfunded Actuarial Liability	Funded Ratio	Covered Payroll	Unfunded AL as a % of Covered Payroll
6/30/2019	\$ 3,706,302	\$ 4,988,427	\$ 1,282,125	74.3%	\$ 235,818	543.7%
6/30/2018	3,596,590	4,696,428	1,099,838	76.6%	218,429	503.5%
6/30/2017	3,439,922	4,464,402	1,024,480	77.1%	203,816	502.6%
6/30/2016	3,303,550	4,355,990	1,052,440	75.8%	194,072	542.3%
6/30/2015	3,212,776	4,058,410	845,634	79.2%	184,733	457.8%
6/30/2014	3,025,101	3,813,825	788,724	79.3%	188,189	419.1%
6/30/2013	2,771,924	3,578,031	806,107	77.5%	184,645	436.6%
6/30/2012	2,703,539	3,397,792	694,253	79.6%	187,959	369.4%
6/30/2011	2,685,721	3,196,007	510,286	84.0%	190,726	267.5%
6/30/2010	2,576,705	3,230,456	653,751	79.8%	251,058	260.4%

*Amounts prior to June 30, 2011 calculated by prior actuary*

*Dollar amounts in thousands*



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**SECTION VII – ACTUARIAL SECTION OF THE CAFR**

**Table VII-2**

Schedule of Funded Liabilities by Type							
Actuarial Valuation Date	Actuarial Liability For			Reported Assets	Portion of Actuarial Liability Covered by Reported Assets		
	Active Member Contributions (A)	Retirees, Beneficiaries and Other Inactives (B)	Remaining Active Members' Liability (C)		(A)	(B)	(C)
6/30/2019	\$ 308,023	\$ 3,446,977	\$ 1,233,427	\$ 3,706,302	100%	99%	0%
6/30/2018	304,454	3,227,859	1,164,115	3,596,590	100%	100%	6%
6/30/2017	299,933	3,050,871	1,113,598	3,439,922	100%	100%	8%
6/30/2016	294,535	2,999,773	1,061,682	3,303,550	100%	100%	1%
6/30/2015	285,538	2,819,410	953,462	3,212,776	100%	100%	11%
6/30/2014	288,227	2,585,611	939,987	3,025,101	100%	100%	16%
6/30/2013	280,727	2,452,728	844,576	2,771,924	100%	100%	5%
6/30/2012	276,047	2,310,295	811,450	2,703,539	100%	100%	14%
6/30/2011	260,172	2,174,044	761,791	2,685,721	100%	100%	33%
6/30/2010	246,356	1,907,931	1,076,169	2,576,705	100%	100%	39%

*Amounts prior to June 30, 2011 calculated by prior actuary*

*Dollar amounts in thousands*

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**SECTION VII – ACTUARIAL SECTION OF THE CAFR**

In the exhibit below, non-recurring items include changes in assumptions and changes in plan provisions.

**Table VII-3**

Actuarial Valuation Date	Analysis of Financial Experience				
	Gain or (Loss) for Year(s) Ending on Valuation Date Due To:				
	Investment Income	Combined Liability Experience	Total Financial Experience	Non-Recurring Items	Total Experience
6/30/2019	\$ (116,232)	\$ (27,406)	\$ (143,638)	\$ (80,853)	\$ (224,491)
6/30/2018	(53,615)	13,448	(40,167)	(76,425)	(116,592)
6/30/2017	(50,882)	(57,971)	(108,853)	127,571	18,718
6/30/2016	(106,785)	(54,528)	(161,313)	(72,680)	(233,993)
6/30/2015	2,806	7,291	10,097	(90,004)	(79,907)
6/30/2014	78,462	(14,678)	63,784	(55,787)	7,997
6/30/2013	(92,499)	11,115	(81,384)	(28,233)	(109,618)
6/30/2012	(172,759)	39,432	(133,327)	(75,220)	(208,548)
6/30/2011	(96,473)	278,051	181,578	12,360	193,938
6/30/2010	(149,621)	43,880	(105,741)	(104,240)	(209,981)

*Amounts prior to June 30, 2011 calculated by prior actuary*

*Dollar amounts in thousands*



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Data Assumptions and Methods**

In preparing our data, we relied on information supplied by the San José Department of Retirement Services. This information includes, but is not limited to, plan provisions, employee data, and financial information. Our methodology for obtaining the data used for the valuation is based upon the following assumptions and practices:

- Records on the “Active” data file are considered to be Active if they do not have a reason for termination.
- Records on any of the data files are considered to be Inactive if they have a reason for termination of deferred vested or leave of absence/inactive.
- Records on the “Retiree” and “Beneficiary/QDRO” files are considered in pay status if they do not have a date of death, are not inactive, and have not withdrawn from the plan.
- Salary for the year commencing on the valuation date is defined as the greater of:
  - Annualized “compensation rate 2,” increased with one year of wage inflation and one half year of merit increase; and,
  - “Pensionable compensation” for the year ending on the valuation date, increased with one year of wage inflation and one year of merit increase.
- The annual benefit for deferred vested members is set to be the accrued benefit provided. If an accrued benefit is not provided, then an annual benefit is estimated at the later of their current age and assumed retirement age, using the benefit service provided and annualized “compensation rate 2.”
- We assume any member found in last year’s “Retiree” file and not in this year’s file is deceased without a beneficiary and should be removed from the valuation data.
- We assume all deceased members with payments continuing to a beneficiary have already been accounted for in the “Retiree” file.
- If a spouse continuance amount is not provided on a Tier 1 retiree or disabled member’s record, it is assumed to equal the member’s benefit, multiplied by 37.5%, and divided by the member’s benefit multiplier at retirement.

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Table A-1**

Active Member Data					
	June 30, 2019			June 30, 2018	
	Fire	Police	Total	Total	% Change
<b><u>Tier 1</u></b>					
Count	541	674	1,215	1,280	-5.1%
Average Current Age	45.6	45.7	45.6	45.2	1.0%
Average Eligibility Service	16.6	18.1	17.4	17.1	2.0%
Average Benefit Service	16.0	17.5	16.8	16.6	1.6%
Average Expected Pensionable Earnings	\$ 140,952	\$ 155,362	\$ 148,946	\$ 141,599	5.2%
<b><u>Tier 2</u></b>					
Count	121	365	486	358	35.8%
Average Current Age	32.8	30.2	30.8	30.7	0.5%
Average Eligibility Service	2.5	2.1	2.2	1.8	18.5%
Average Benefit Service	2.4	2.1	2.1	1.8	20.5%
Average Expected Pensionable Earnings	\$ 104,942	\$ 115,482	\$ 112,858	\$ 103,862	8.7%
<b><u>Total</u></b>					
Count	662	1,039	1,701	1,638.0	3.8%
Average Current Age	43.3	40.2	41.4	42.0	-1.5%
Average Eligibility Service	14.0	12.5	13.1	13.8	-5.0%
Average Benefit Service	13.5	12.1	12.6	13.3	-5.2%
Average Expected Pensionable Earnings	\$ 134,370	\$ 141,352	\$ 138,635	\$ 133,351	4.0%

**Table A-2**

Schedule of Active Member Data					
Valuation Year	Active Count	Annual Payroll	Monthly Average Pay	Percent Change in Average Pay	
2019	1,701	\$ 235,818,000	\$ 11,553	3.96%	
2018	1,638	218,429,000	11,113	1.02%	
2017	1,544	203,816,000	11,000	12.69%	
2016	1,577	184,733,000	9,762	2.96%	
2015	1,654	188,189,000	9,481	5.18%	
2014	1,707	184,645,000	9,014	-1.13%	
2013	1,718	187,959,000	9,117	-0.48%	
2012	1,735	190,726,000	9,161	-11.51%	
2011	2,021	251,058,000	10,352	1.39%	
2010	2,083	255,223,000	10,211	14.92%	



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Table A-3**

<b>Payee Member Data</b>				
	<b>June 30, 2019</b>		<b>June 30, 2018</b>	<b>%Change</b>
<b>Retired</b>				
Count	1,060		1,007	5.3%
Average Age	64.8		64.7	0.2%
Average Annual Benefit	\$ 113,456	\$	110,516	2.7%
<b>Service Disability</b>				
Count	885		888	-0.3%
Average Age	68.9		68.3	0.9%
Average Annual Benefit	\$ 98,085	\$	94,875	3.4%
<b>Non-Service Disability</b>				
Count	27		24	12.5%
Average Age	56.5		58	-2.8%
Average Annual Benefit	\$ 55,966	\$	53,669	4.3%
<b>Beneficiaries &amp; SADROs</b>				
Count	346		331	4.5%
Average Age	68.4		68.1	0.4%
Average Annual Benefit	\$ 45,442	\$	43,486	4.5%
<b>Total</b>				
Count	2,318		2,250	3.0%
Average Age	66.8		66.6	0.4%
Average Annual Benefit	\$ 96,766	\$	93,876	3.1%

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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APPENDIX A – MEMBERSHIP INFORMATION

Table A-4

Schedule Of Retirees and Beneficiaries Added to and Removed from Rolls										
Period	Beginning Annual		Added to Rolls Annual		Removed from Rolls Annual		End of Period Annual		% Increase in Annual Allowances*	Average Annual Allowances
	Count	Allowances	Count	Allowances	Count	Allowances	Count	Allowances		
2018-2019	2,250	\$ 211,220	122	\$ 17,005	54	\$ 3,922	2,318	\$ 224,303	6.2%	\$ 96,766
2017-2018	2,192	200,197	120	15,558	62	4,535	2,250	211,220	5.5%	93,876
2016-2017	2,149	190,897	87	11,816	44	2,516	2,192	200,197	4.9%	91,331
2015-2016	2,108	182,185	72	10,843	31	2,131	2,149	190,897	4.8%	88,831
2014-2015	2,032	170,872	115	13,700	39	2,387	2,108	182,185	6.6%	86,426
2013-2014	1,994	162,716	73	10,142	35	1,986	2,032	170,872	5.0%	84,091
2012-2013	1,942	154,381	91	10,259	39	1,924	1,994	162,716	5.4%	81,603
2011-2012	1,885	144,139	88	11,583	31	1,341	1,942	154,381	7.1%	79,496
2010-2011	1,810	131,014	133	15,384	58	2,259	1,885	144,139	10.0%	76,466
2009-2010	1,700	115,573	152	17,238	42	1,797	1,810	131,014	13.4%	72,383
2007-2009	1,477	90,061	276	27,537	53	2,025	1,700	115,573	28.3%	67,984
2005-2007	1,385	76,071	143	15,913	51	1,923	1,477	90,061	18.4%	60,976
2003-2005	1,271	62,314	161	15,619	47	1,862	1,385	76,071	22.1%	54,925

\* Years prior to 2009-2010 are increases over a two-year period, not an annual increase

Annual Allowances in Thousands

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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APPENDIX A – MEMBERSHIP INFORMATION

Table A-5

Inactive Member Data					
	June 30, 2019		June 30, 2018	%Change	
<b><u>Tier 1</u></b>					
<b>Terminated Vested / Reciprocal</b>					
Count	216		211	2.4%	
Average Age	44.8		44.4	0.9%	
Average Annual Benefit	\$	27,790	\$	28,013	-0.8%
Average Contribution Balance with Interest	\$	135,597	\$	133,155	1.8%
<b>Non-Vested Terminated</b>					
Count	31		43	-27.9%	
Average Age	39.9		38.1	4.7%	
Average Annual Benefit	\$	8,804	\$	10,279	-14.3%
Average Contribution Balance with Interest	\$	49,897	\$	58,897	-15.3%
<b>Total</b>					
Count	247		254	-2.8%	
Average Age	44.2		43.3	1.9%	
Average Annual Benefit	\$	25,475	\$	25,069	1.6%
Average Contribution Balance with Interest	\$	124,841	\$	120,583	3.5%
<b><u>Tier 2</u></b>					
<b>Terminated Vested / Reciprocal</b>					
Count	7		1	600.0%	
Average Age	31.3		28.0	11.7%	
Average Annual Benefit	\$	2,458	\$	546	349.9%
Average Contribution Balance with Interest	\$	13,939	\$	6,721	107.4%
<b>Non-Vested Terminated</b>					
Count	70		56	25.0%	
Average Age	34.0		33.6	1.2%	
Average Annual Benefit	\$	1,002	\$	819	22.3%
Average Contribution Balance with Interest	\$	5,911	\$	5,907	0.1%
<b>Total</b>					
Count	77		57	35.1%	
Average Age	33.8		33.5	0.8%	
Average Annual Benefit	\$	1,138	\$	814	39.8%
Average Contribution Balance with Interest	\$	6,641	\$	5,921	12.2%
<b><u>Total</u></b>					
Count	324		311	4.2%	
Average Age	41.7		41.5	0.4%	
Average Annual Benefit	\$	19,788	\$	20,609	-4.0%
Average Contribution Balance with Interest	\$	96,750	\$	99,568	-2.8%

*For inactive members, benefit is calculated using the assumptions and methods outlined in Appendix A if not provided in the data*



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Table A-6**

Distribution of Active Members as of June 30, 2019									
Age	Years of Benefit Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 and Up	
Under 25	24	9	0	0	0	0	0	0	33
25 to 29	72	108	9	0	0	0	0	0	189
30 to 34	35	125	56	10	0	0	0	0	226
35 to 39	14	52	75	100	7	0	0	0	248
40 to 44	6	21	39	110	82	14	0	0	272
45 to 49	4	4	12	56	104	162	11	0	353
50 to 54	1	1	2	24	55	167	46	3	299
55 to 59	0	2	1	2	15	36	18	1	75
60 to 64	0	0	0	0	3	2	1	0	6
65 to 69	0	0	0	0	0	0	0	0	0
70 and up	0	0	0	0	0	0	0	0	0
<b>Total Count</b>	<b>156</b>	<b>322</b>	<b>194</b>	<b>302</b>	<b>266</b>	<b>381</b>	<b>76</b>	<b>4</b>	<b>1,701</b>

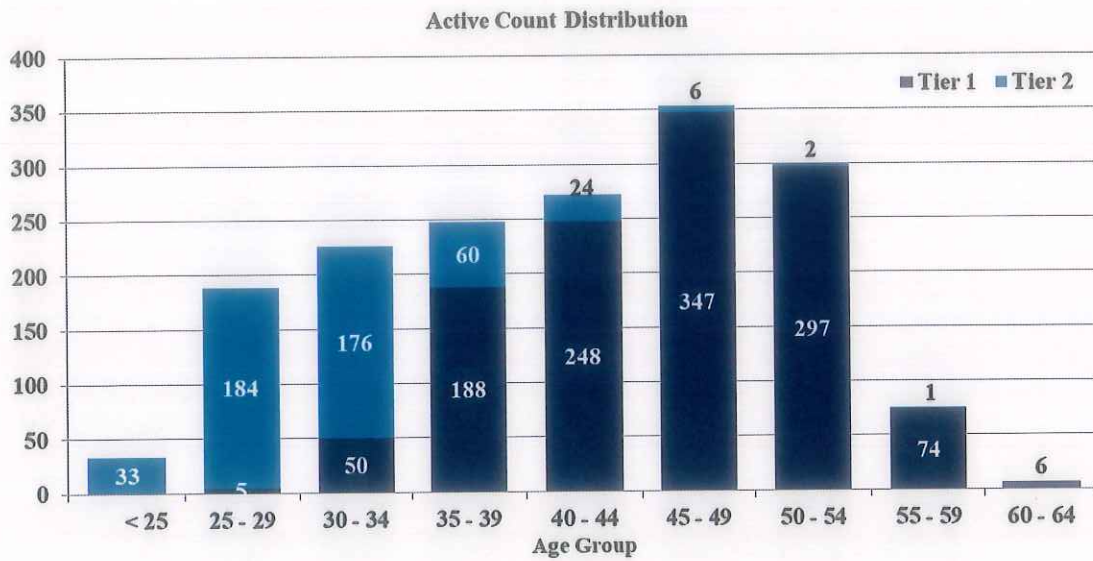
  

Distribution of Average Expected Salary as of June 30, 2019									
Age	Years of Benefit Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 and Up	
Under 25	\$103,799	\$110,446	\$0	\$0	\$0	\$0	\$0	\$0	\$105,612
25 to 29	102,715	113,854	137,451	0	0	0	0	0	110,734
30 to 34	104,131	115,691	138,932	140,531	0	0	0	0	120,758
35 to 39	101,048	118,417	136,831	145,149	160,194	0	0	0	134,964
40 to 44	92,443	116,496	135,855	141,636	153,916	165,105	0	0	142,691
45 to 49	112,910	128,424	136,011	139,860	146,572	158,569	191,598	0	151,470
50 to 54	151,735	108,969	124,207	143,466	146,610	156,402	169,465	172,483	155,344
55 to 59	0	127,830	121,337	158,923	141,086	149,699	149,547	147,326	147,193
60 to 64	0	0	0	0	133,961	150,624	170,519	0	145,608
65 to 69	0	0	0	0	0	0	0	0	0
70 and up	0	0	0	0	0	0	0	0	0
<b>Avg. Salary</b>	<b>\$ 103,230</b>	<b>\$ 115,634</b>	<b>\$ 137,009</b>	<b>\$ 142,694</b>	<b>\$ 148,751</b>	<b>\$ 156,980</b>	<b>\$ 167,965</b>	<b>\$ 166,194</b>	<b>\$ 138,635</b>

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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APPENDIX A – MEMBERSHIP INFORMATION

Chart A-1



CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT

APPENDIX A – MEMBERSHIP INFORMATION

Table A-7

Retirees and Disabled by Attained Age and Benefit Effective Date											
Benefit Effective	Age										Total
	Under 50	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 and up	
Pre-1999	0	0	7	7	17	84	167	134	44	20	480
PYE1999	0	0	0	1	1	24	21	4	0	0	51
PYE2000	0	0	1	0	2	22	18	4	0	0	47
PYE2001	0	0	2	2	4	34	10	1	0	0	53
PYE2002	0	0	2	2	11	23	9	0	0	0	47
PYE2003	1	0	3	1	25	32	8	1	0	0	71
PYE2004	0	0	0	2	19	20	4	0	0	0	45
PYE2005	0	1	3	1	42	20	7	1	0	0	75
PYE2006	0	0	0	6	14	14	2	0	0	0	36
PYE2007	0	2	1	15	33	10	2	0	0	0	63
PYE2008	2	2	0	19	31	8	0	0	0	0	62
PYE2009	0	2	4	53	66	23	3	0	0	0	151
PYE2010	1	1	7	83	37	6	0	0	0	0	135
PYE2011	3	4	37	54	12	1	1	0	0	0	112
PYE2012	5	3	31	21	7	1	0	0	0	0	68
PYE2013	6	7	28	9	3	1	0	0	0	0	54
PYE2014	7	3	30	12	1	0	0	0	0	0	53
PYE2015	8	15	59	11	2	1	0	0	0	0	96
PYE2016	6	26	20	4	0	0	0	0	0	0	56
PYE2017	10	25	29	4	0	0	0	0	0	0	68
PYE2018	7	34	23	3	1	0	0	0	0	0	68
PYE2019	3	48	28	1	0	1	0	0	0	0	81
<b>Total</b>	<b>59</b>	<b>173</b>	<b>315</b>	<b>311</b>	<b>328</b>	<b>325</b>	<b>252</b>	<b>145</b>	<b>44</b>	<b>20</b>	<b>1,972</b>
Average Age at Retirement/Disability				52.4							
Average Current Age				66.6							
Average Annual Pension				\$ 105,771							



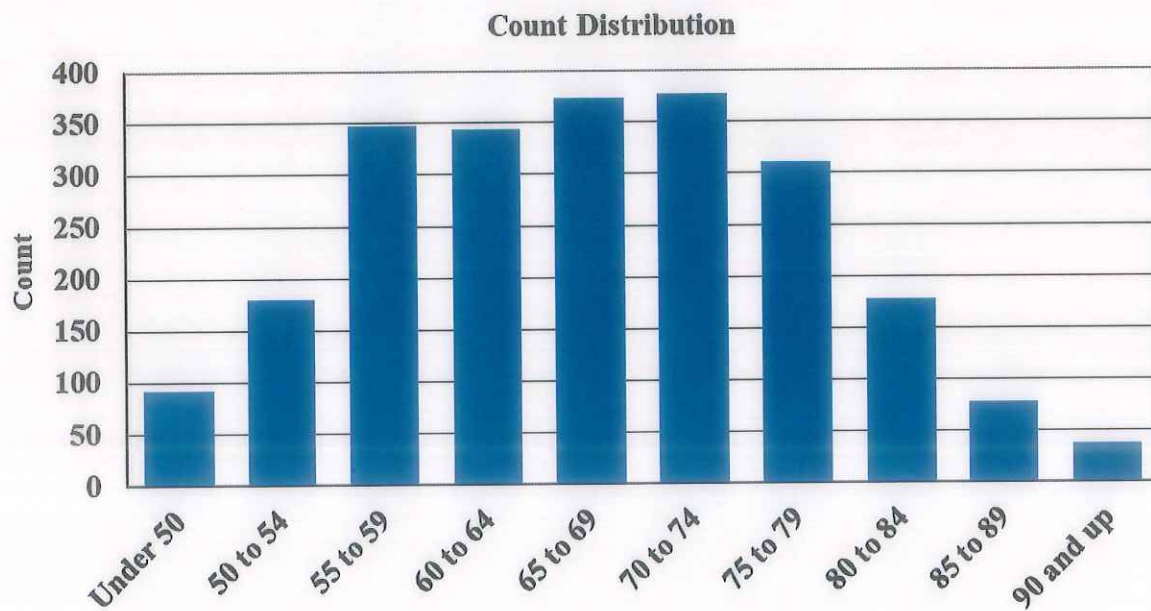
**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**APPENDIX A – MEMBERSHIP INFORMATION**

**Table A-8**

<b>Distribution of Retirees, Disabled Members, and Beneficiaries as of June 30, 2019</b>			
<b>Age</b>	<b>Count</b>	<b>Annual Benefit</b>	
Under 50	92	\$	4,836,737
50 to 54	180		17,043,554
55 to 59	347		33,811,986
60 to 64	344		39,407,596
65 to 69	374		42,809,609
70 to 74	377		38,998,414
75 to 79	311		26,683,433
80 to 84	178		14,016,345
85 to 89	78		4,771,643
90 and up	<u>37</u>		<u>1,923,706</u>
<b>Total</b>	<b>2,318</b>	\$	<b>224,303,022</b>

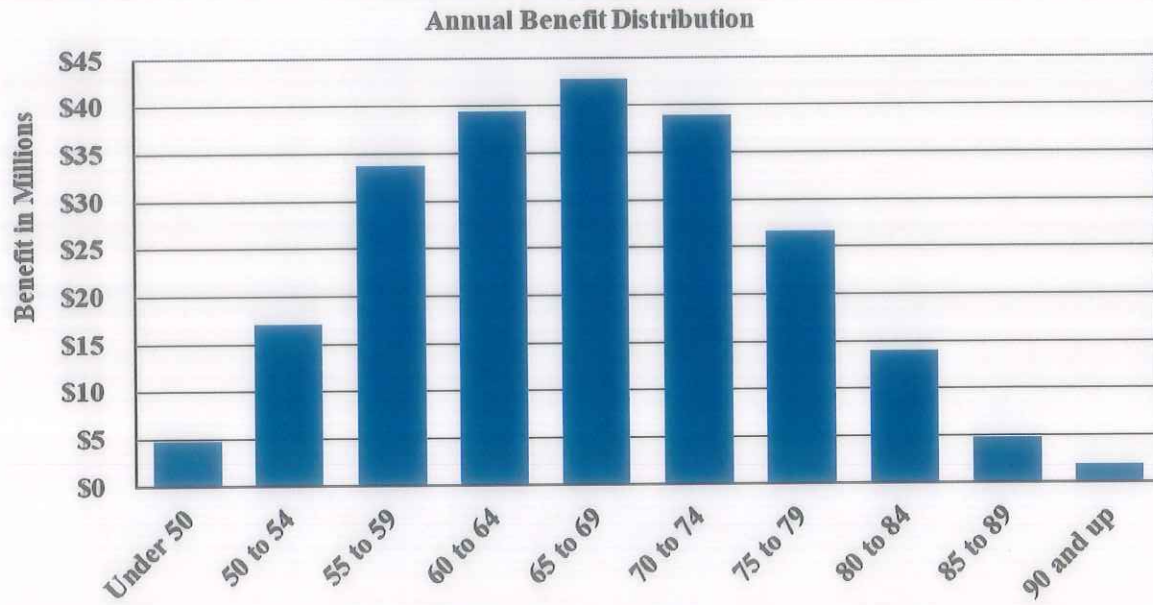
**Chart A-2**



CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT

APPENDIX A – MEMBERSHIP INFORMATION

Chart A-3



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**APPENDIX A – MEMBERSHIP INFORMATION**

**Table A-9**

Changes in Plan Membership							
TIER 1							
	Actives	Vested Terminations / Reciprocals	Non-Vested Terminations	Retirees	In-Pay Disabilities	Beneficiaries / SADRO	Total
<b>June 30, 2018</b>	<b>1,280</b>	<b>224</b>	<b>43</b>	<b>1,007</b>	<b>912</b>	<b>331</b>	<b>3,797</b>
New Entrants	9	0	0	0	0	0	9
Rehires	11	(7)	(1)	0	0	0	3
Non-Vested Terminations	(2)	0	2	0	0	0	0
Vested Deferrals	(7)	7	0	0	0	0	0
Transfers	(2)	14	(12)	0	0	0	0
Return of Contributions	0	0	(2)	0	0	0	(2)
Disabilities	(6)	(1)	(1)	(10)	18	0	0
Retirements	(67)	(8)	0	75	0	2	2
Deaths	(1)	0	0	(12)	(18)	18	(13)
Beneficiary Deaths	0	0	0	0	0	(8)	(8)
Benefits Expiring	0	0	0	0	0	(1)	(1)
Adjustments	0	(4)	2	0	0	4	2
<b>June 30, 2019</b>	<b>1,215</b>	<b>225</b>	<b>31</b>	<b>1,060</b>	<b>912</b>	<b>346</b>	<b>3,789</b>
TIER 2							
<b>June 30, 2018</b>	<b>358</b>	<b>1</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>415</b>
New Entrants	139	0	13	0	0	0	152
Rehires	1	0	(1)	0	0	0	0
Non-Vested Terminations	(12)	0	11	0	0	0	(1)
Vested Deferrals	0	0	0	0	0	0	0
Transfers	0	6	(6)	0	0	0	0
Return of Contributions	0	0	(1)	0	0	0	(1)
Disabilities	0	0	0	0	0	0	0
Retirements	0	0	0	0	0	0	0
Deaths	0	0	0	0	0	0	0
Beneficiary Deaths	0	0	0	0	0	0	0
Benefits Expiring	0	0	0	0	0	0	0
Adjustments	0	0	(2)	0	0	0	(2)
<b>June 30, 2019</b>	<b>486</b>	<b>7</b>	<b>70</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>563</b>
TOTAL							
<b>June 30, 2018</b>	<b>1,638</b>	<b>225</b>	<b>99</b>	<b>1,007</b>	<b>912</b>	<b>331</b>	<b>4,212</b>
New Entrants	148	0	14	0	0	0	162
Rehires	12	(7)	(4)	0	0	0	1
Non-Vested Terminations	(14)	0	14	0	0	0	0
Vested Deferrals	(7)	7	0	0	0	0	0
Transfers	(2)	20	(18)	0	0	0	0
Return of Contributions	0	0	(3)	0	0	0	(3)
Disabilities	(6)	(1)	(1)	(10)	18	0	0
Retirements	(67)	(8)	0	75	0	0	0
Deaths	(1)	0	0	(12)	(18)	23	(8)
Beneficiary Deaths	0	0	0	0	0	(8)	(8)
Benefits Expiring	0	0	0	0	0	(6)	(6)
Adjustments	0	(4)	0	0	0	6	2
<b>June 30, 2019</b>	<b>1,701</b>	<b>232</b>	<b>101</b>	<b>1,060</b>	<b>912</b>	<b>346</b>	<b>4,352</b>



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**A. Actuarial Assumptions**

The discount rate used in this report was adopted by the Board of Administration with our input at the November 1, 2018 Board meeting. All other assumptions were adopted at the November 7, 2019 Board meeting based on recommendations from our experience study covering plan experience through June 30, 2019. Please refer to the experience study for the rationale for each of the assumptions.

**1. Discount Rate**

6.75% net of investment expenses. The long-term expected return on assets based on Meketa's capital market assumptions for a 10-year time horizon is 7.2%. The Board applied a margin for adverse deviation to improve the probability of achieving the discount rate.

**2. Price Inflation**

2.50% per annum.

**3. Wage Inflation**

3.25% per annum (0.75% real wage growth).

**4. Merit Salary Increase Rate**

The following merit component is added to wage inflation, based on an individual member's years of service:

**Table B-1**

Merit Salary Increases	
Years of Service	Merit/ Longevity
0	6.50%
1	6.25
2	5.75
3	5.25
4	4.50
5	3.75
6	2.75
7	1.75
8	1.25
9	1.00
10	0.75
11+	0.50

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**5. Rates of Retirement**

Rates of retirement are based on age and service according to the following Tables B-2, B-3, and B-4. Tier 1 rates only apply when the member is eligible for unreduced benefits.

**Table B-2**

<b>Tier 1 Rates of Retirement by Age and Service</b>				
	<b>Police</b>		<b>Fire</b>	
<b>Age</b>	<b>&lt;30 Years</b>	<b>30+ Years</b>	<b>&lt;30 Years</b>	<b>30+ Years</b>
50	55.0%	100.0%	35.0%	100.0%
51	45.0	100.0	35.0	100.0
52	40.0	100.0	35.0	100.0
53	30.0	100.0	35.0	100.0
54	30.0	100.0	35.0	100.0
55	30.0	100.0	30.0	100.0
56	30.0	100.0	25.0	100.0
57	30.0	100.0	20.0	100.0
58 – 61	50.0	100.0	27.5	100.0
62+	100.0	100.0	100.0	100.0

**Table B-3**

<b>Tier 2 Rates of Retirement by Age and Service</b>				
	<b>Police</b>			
<b>Age</b>	<b>5 – 19 Years</b>	<b>20 – 24 Years</b>	<b>25 – 29 Years</b>	<b>30+ Years</b>
50 – 56	2.0%	2.0%	2.0%	5.0%
57 – 59	7.5	10.0	20.0	100.0
60 – 61	10.0	20.0	35.0	100.0
62 – 64	25.0	50.0	75.0	100.0
65+	100.0	100.0	100.0	100.0

**Table B-4**

<b>Tier 2 Rates of Retirement by Age and Service</b>				
	<b>Fire</b>			
<b>Age</b>	<b>5 – 19 Years</b>	<b>20 – 24 Years</b>	<b>25 – 29 Years</b>	<b>30+ Years</b>
50 – 56	1.0%	1.0%	1.0%	2.5%
57 – 59	5.0	7.5	15.0	100.0
60 – 61	7.5	15.0	25.0	100.0
62 – 64	20.0	35.0	50.0	100.0
65+	100.0	100.0	100.0	100.0

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

Tier 1 vested terminated members are assumed to retire at age 50 if they have 25 or more years of service or at age 55 if they have less than 25 years of service. Tier 2 vested terminated members are assumed to retire at age 60.

**6. Rates of Termination**

Rates of termination are shown in Table B-5 below.

**Table B-5**

Rates of Termination		
Service	Police	Fire
0	13.75%	8.50%
1	11.75	4.00
2	10.00	2.75
3	8.50	1.75
4	7.50	1.25
5	6.75	1.00
6	6.00	0.90
7	5.50	0.80
8	5.00	0.70
9	4.75	0.60
10	4.50	0.50
11	4.25	0.50
12	3.75	0.50
13	3.25	0.50
14	2.75	0.50
15	2.25	0.50
16	1.75	0.50
17	1.50	0.50
18	1.25	0.50
19+	1.00	0.50

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

75% of terminating employees are assumed to subsequently work for a reciprocal employer and receive 3.25% pay increases per year.

**7. Rates of Disability**

For Police, disability rates are equal to the CalPERS police industrial and non-industrial rates for public agencies multiplied by 90% for ages under 50 and 140% for ages 50 and older. For Fire, disability rates are equal to the CalPERS fire industrial and non-industrial rates for public agencies multiplied by 90% for ages under 50 and 180% for ages 50 and older. Sample disability rates of active participants are provided in Table B-6.



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**Table B-6**

<b>Rates of Disability at Selected Ages</b>		
<b>Age</b>	<b>Police</b>	<b>Fire</b>
25	0.16%	0.03%
30	0.45	0.08
35	0.74	0.15
40	1.03	0.28
45	1.32	0.50
50	2.70	5.08
55	6.88	7.54
60	8.71	10.77
65	10.47	14.84

100% of disabilities are assumed to be duty related.

**8. Rates of Mortality**

Mortality rates for actives, retirees, beneficiaries, terminated vested, and reciprocals are based on the sex-distinct employee and annuitant mortality tables shown below. Future mortality improvements are reflected by applying the SOA MP-2019 projection scale on a generational basis from the base year of 2010 (2009 for beneficiary tables).

**Table B-7**

<b>Category</b>	<b>Base Mortality Tables</b>	
	<b>Male</b>	<b>Female</b>
<b>Healthy Retirees</b>	1.002 times the 2010 Public Safety Above Median Income Mortality Table (Pub(s)-2010(A)) for Healthy Retirees	1.002 times the 2010 Public Safety Above Median Income Mortality Table (Pub(s)-2010(A)) for Healthy Retirees
<b>Disabled Retiree</b>	0.915 times the Public Safety Mortality Table (PubS-2010) for Disabled Retirees	0.915 times the Public Safety Mortality Table (PubS-2010) for Disabled Retirees
<b>Beneficiaries</b>	0.948 times the CalPERS 2009 Healthy Annuitant Mortality Table	1.048 times the CalPERS 2009 Healthy Annuitant Mortality Table
<b>Healthy Non-Annuitant</b>	0.979 times the 2010 Public Safety Above Median Income Mortality Table (Pub(s)-2010(A)) for Healthy Employees	0.979 times the 2010 Public Safety Above Median Income Mortality Table (Pub(s)-2010(A)) for Healthy Employees

It is assumed that 50% of active deaths are service related.

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
JUNE 30, 2019 ACTUARIAL VALUATION REPORT**

**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**9. Family Composition**

Percentage married is shown in the following Table B-8. Women are assumed to be three years younger than men.

**Table B-8**

Percentage Married	
Gender	Percentage
Males	85%
Females	85%

**10. Administrative Expenses**

For FYE 2020, administrative expenses are assumed to equal \$1,275 per member and are assumed to increase at the wage inflation assumption of 3.25% per annum. Historically, the administrative expenses were assumed to reduce the investment return assumption by 10 basis points which resulted in a higher normal cost. To maintain the same historic division of Tier 1 member and City contributions for administrative expenses for this valuation, members were allocated a portion of the administrative expenses equal to 3/11ths of the difference in normal cost that a 10 basis point reduction in the investment return assumption would cause. Tier 2 members pay 50 percent of administrative expenses.

**11. Changes Since Last Valuation**

New demographic assumptions were adopted by the Board at the meeting on November 7, 2019. A full detail of the changes can be found in the report on the experience study.



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS**

**B. Contribution Allocation Procedure**

The contribution allocation procedure primarily consists of an actuarial cost method, an asset smoothing method, and an amortization method as described below. All components of the contribution allocation procedure were established prior to the June 30, 2011 actuarial valuation except as specifically noted below.

**1. Actuarial Cost Method**

The Entry Age actuarial cost method was used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement. The Actuarial Liability is the difference between the Present Value of Future Benefits and the present value of future normal cost. The Unfunded Actuarial Liability is the difference between the Actuarial Liability and the Actuarial Value of Assets.

**2. Asset Valuation Method**

For the purposes of determining the employer's contribution, we use an Actuarial Value of Assets. The asset smoothing method dampens the volatility in asset values that could occur because of the fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process. Assets are assumed to be used exclusively for the provision of retirement benefits and expenses.

The Actuarial Value of Assets is calculated by recognizing the deviation of actual investment returns compared to the expected return (6.875% for FYE's 2017 and 2018, 7.00% for FYE's 2015 and 2016, and 7.125% for FYE 2014) over a five-year period. The dollar amount of the expected return on the Market Value of Assets is determined using the actual contributions and benefit payments during the year. Any difference between this amount and the actual net investment earnings is considered a gain or loss.

Finally, the Actuarial Value of Assets is restricted to a corridor between 80 percent and 120 percent of the Market Value of Assets.

**3. Amortization Method**

Actuarial gains and losses and plan changes are amortized over a 15-year period (16 years for gains and losses prior to June 30, 2016) beginning with the valuation date in which they first arise. Changes in methods and assumptions are amortized over a 20-year period (16 years for changes prior to June 30, 2011) beginning with the valuation date on which they are effective. Amortization payments are assumed to increase 2.50% each year. As shown in Section VI, some prior amortization periods were adjusted to smooth the pattern of future contributions.



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**APPENDIX C – SUMMARY OF PLAN PROVISIONS  
TIER 1**

**1. Membership Requirement**

Participation in the plan is immediate upon the first day of employment with the City of San José as a police officer or fire fighter except for the following:

- Independent contractors,
- Person in City service principally for training or educational purposes,
- Auxiliary or voluntary police officers or fire fighters,
- Part-time or non-salaried employees, and
- Employees receiving credit in any other retirement or pension system.

Persons eligible for Tier 1 membership include:

- Any police officer hired prior to August 4, 2013 or any firefighter hired prior to January 2, 2015.
- Any person who was a member of this plan as an employee of the police department prior to August 4, 2013, and terminated employment with the city, and returned to employment with the city in a position covered by this plan on or after August 4, 2013.
- Any person who was a member of this plan as an employee of the fire department prior to January 2, 2015, and terminated employment with the city, and returned to employment with the city in a position covered by this plan on or after January 2, 2015.
- Any person accepting employment in the police department or fire department of the city on or after January 1, 2013, who is otherwise eligible for this plan and who was an active member in another California public retirement system with which this plan has reciprocity under Part 16, and who has a break in service of less than six months from that covered employment and employment with the city.

**2. Final Compensation**

The highest twelve consecutive months of compensation in covered employment. However, in determining Final Compensation, no compensation in the last 12 months of employment that exceeds 108% of compensation during the 12 months immediately preceding the last 12 month shall be considered. Compensation excludes overtime pay and expense allowances.

**3. Credited Service**

Years of service in covered employment plus service purchased for military leave of absence, Federated service, and unpaid leaves of absence.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS  
TIER 1**

**4. Contributions**

**a. Member:**

The amount needed to fund 3/11ths of normal cost calculated under the Entry Age actuarial cost method plus the amortization payment on the February 4, 1996 benefit improvement. For Police members, there is an additional amortization payment for member contributions not made for the last 6 months of 2006.

**b. Employer:**

The Employer contributes the remaining amounts necessary to fund the Plan in accordance with the Board's funding policy.

**5. Service Retirement**

**Eligibility**

Age 55 with 20 years of service, age 50 with 25 years of service, age 70 with no service requirement, or any age with 30 years of service. Reduced benefits are also available at age 50 with 20 years of service.

**Benefit**

**Police:** 2.5% of Final Compensation for each year of credited service up to 20 years plus 4.0% of Final Compensation for each year of credited service in excess of 20, subject to a maximum of 90% of Final Compensation.

**Fire:** For members with less than 20 years of service, 2.5% of Final Compensation for each year of credited service. For members with 20 or more years of service, 3.0% of Final Compensation for each year of service, subject to a maximum of 90% of Final compensation.

**6. Service Connected Disability Retirement**

**Eligibility**

No age or service requirement.

**Benefit**

**Police:** 50% of Final Compensation plus 4.0% of Final Compensation for each year of credited service in excess of 20, subject to a maximum of 90% of Final Compensation.



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**APPENDIX C – SUMMARY OF PLAN PROVISIONS**  
**TIER 1**

Fire: For members with less than 20 years of service, 50% of Final Compensation. For members with 20 or more years of service, 3.0% of Final Compensation for each year of service, subject to a maximum of 90% of Final Compensation.

**7. Non-Service Connected Disability Retirement**

**Eligibility**

Two years of service.

**Benefit**

For members with less than 20 years of service, 32% of Final Compensation plus 1% of Final Compensation for each year of service in excess of two. For members with 20 or more years of service, the benefit amount equals the amount that would be calculated under the service retirement formula.

**8. Non-Service-Connected Death**

*Less than 2 Years of Service:*

Lump sum benefit equal to the greater of accumulated employee contributions with interest or \$1,000.

*Disabled retirees or members ineligible for service retirement:*

Spouse receives 24% of Final Compensation plus 0.75% of Final Compensation for each year of service in excess of two, subject to a maximum of 37.5% of Final Compensation. If a member has eligible dependent children, an additional benefit is payable as follows:

- 1 Child: 25% of Final Compensation
- 2 Children: 37.5% of Final Compensation
- 3+ Children: 50% of Final Compensation

The total benefit payable to a family is limited to 75% of Final Compensation.

If a member does not have a spouse or eligible dependent children, a lump sum benefit equal to the greater of accumulated employee contributions with interest or \$1,000.

*Service retirees or members eligible for service retirement:*

Spouse receives the greater of 37.5% of Final Compensation or 50% of the member's service retirement benefit, subject to a maximum of 42.5% of Final Compensation for Police and 45% of Final Compensation for Fire. Eligible dependent children will receive the same benefit as defined under the non-service-connected death for disabled retirees or



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**APPENDIX C – SUMMARY OF PLAN PROVISIONS  
TIER 1**

members ineligible for service retirement. The total benefit payable to a family is limited to 75% of Final Compensation.

**9. Service-Connected Death**

Spouse receives the greater of 37.5% of Final Compensation or 50% of the member's service retirement benefit, subject to a maximum of 42.5% of Final Compensation for Police and 45% of Final Compensation for Fire. If a member has eligible dependent children, an additional benefit of 25% of Final Compensation is payable for each eligible dependent child. The total benefit payable to a family is limited to 75% of Final Compensation.

**10. Termination Benefits**

*Less than 10 Years of Service:*

Lump sum benefit equal to the accumulated employee contributions with interest at 2% per annum.

*10 or more years of credited service:*

The amount of the service retirement benefit, payable at the later of age 55 or 20 years from date of membership.

**11. Post-retirement Cost-of-Living Benefit**

Benefits are increased every February 1 by 3.0%.

**12. Changes Since Last Valuation**

None.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS  
TIER 2**

**1. Membership Requirement**

Any police officer who is hired by the City on or after August 4, 2013, or any fire fighter who is hired by the City on or after January 2, 2015, and who does not meet the eligibility requirements for Tier 1.

**2. Final Compensation**

The highest average monthly compensation of the member during any thirty-six consecutive months of covered employment. Compensation excludes overtime pay and expense allowances.

**3. Credited Service**

One year of service credit is given for 2,080 or more hours of city service rendered in any calendar year. A partial year (fraction with the numerator equal to the hours worked, and the denominator equal to 2,080) is given for each calendar year with less than 2,080 hours worked.

**4. Member Contributions**

50% of total Tier 2 contributions to the pension plan, including, but not limited to administrative expenses, normal cost, and Unfunded Actuarial Liability. Increases in members' Unfunded Actuarial Liability contribution are limited to one-third of one percent of compensation each year. Contributions cannot be less than 50% of normal cost.

**5. Unreduced Service Retirement**

**Eligibility**

Age 57 with five years of service.

**Benefit – Member**

2.4% of Final Compensation for each year of credited service up to 20 years, plus 3.0% of Final Compensation for each year of credited service between 20 years and 25 years, plus 3.4% of Final Compensation for each year of credited service in excess of 25 years, subject to a maximum of 80% of Final Compensation.

**Benefit – Survivor**

50% joint and survivor annuity.

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APPENDIX C – SUMMARY OF PLAN PROVISIONS  
TIER 2

**6. Early Service Retirement**

**Eligibility**

Age 50 with five years of service.

**Benefit – Member**

Reduced 7% per year for each year between age 57 and the member's age at retirement.

**7. Service-Connected Disability Retirement**

**Eligibility**

No age or service requirement.

**Benefit – Member**

The greater of:

- Monthly benefit equivalent to 50% of Final Compensation,
- The service retirement benefit, if eligible for service retirement,
- A service retirement benefit actuarially reduced from age 50, if not eligible for service retirement.

**8. Non-Service Connected Disability Retirement**

**Eligibility**

Five years of service.

**Benefit – Member**

1.8% of Final Compensation for each year of credited service if less than age 50, or the service pension benefit if older than age 50.



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APPENDIX C – SUMMARY OF PLAN PROVISIONS  
TIER 2

**9. Death Before Retirement**

**If death occurs before retirement eligibility is reached and after two years of service**

Monthly benefit equal to 24% of Final Compensation plus 0.75% of Final Compensation for each year of service in excess of two, up to a maximum of 37.5% of Final Compensation

**If death occurs after retirement eligibility is reached**

Benefit equivalent to what the employee would have received if retired at the time of death.

**Employees killed in the line of duty**

Monthly benefit equal to the greater of:

- 37.5% of Final Compensation or
- 50% of what the employee would have received if retired at the time of death.

**10. Withdrawal Benefits**

**Less than five years of credited service**

Lump sum benefit equal to the accumulated employee contributions with interest.

**Five or more years of credited service**

The amount of the service retirement benefit, actuarially reduced for early retirement, and payable when retirement eligibility is reached.

**11. Benefit Forms**

Retiree may choose an optional settlement at retirement that reduces their allowance to provide a higher survivorship allowance to their spouse/domestic partner.

**12. Post-retirement Cost-of-Living Benefit**

Benefits are increased every April 1 by the change in the December CPI-U for San José-San Francisco-Oakland, subject to a cap of 2.0%. The first COLA after retirement shall be prorated based on the number of months retired.

**13. Changes Since Last Valuation**

There have been no changes in plan provisions since the last valuation.

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**APPENDIX C – SUMMARY OF PLAN PROVISIONS  
TIER 2**

**Note:** The summary of major plan provisions is designed to outline principal plan benefits. If the Department of Retirement Services should find the plan summary not in accordance with the actual provisions, the actuary should immediately be alerted so the proper provisions are valued.

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN  
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**APPENDIX D – GLOSSARY OF TERMS**

**1. Actuarial Liability**

The Actuarial Liability is the difference between the present value of future benefits and the present value of total future normal costs. This is also referred to by some actuaries as the “accrued liability” or “actuarial accrued liability.” The Actuarial Liability represents the amount of assets a plan should have as of a valuation date according to the actuarial cost method.

**2. Actuarial Assumptions**

Estimates of future experience with respect to rates of mortality, disability, turnover, retirement rate or rates of investment income, and salary increases. Demographic actuarial assumptions (rates of mortality, disability, turnover, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (price inflation, wage inflation, and investment income) are generally based on expectations for the future that may differ from the Plan’s past experience.

**3. Actuarial Cost Method**

A mathematical budgeting procedure for allocating the dollar amount of the present value of future benefits between future normal cost and Actuarial Liability.

**4. Actuarial Gain (Loss)**

The difference between actual experience and the anticipated experience based on the actuarial assumptions during the period between two actuarial valuation dates.

**5. Actuarial Present Value**

The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at the discount rate and by probabilities of payment.

**6. Actuarially Determined Contribution**

The payment to the Plan as determined by the actuary using a contribution allocation procedure. It may or may not be the actual amount contributed to the Plan.

**7. Amortization Method**

A method for determining the amount, timing, and pattern of payment of the Unfunded Actuarial Liability.



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**APPENDIX D – GLOSSARY OF TERMS**

**8. Asset Valuation Method**

The method used to develop the Actuarial Value of Assets from the Market Value of Assets typically by smoothing investment returns above or below the assumed rate of return over a period of time.

**9. Contribution Allocation Procedure**

A procedure typically using an actuarial cost method, an asset valuation method, and an amortization method to develop the Actuarially Determined Contribution.

**10. Discount Rate**

The rate of interest used to discount future benefit payments to determine the actuarial present value. For purposes of determining an Actuarially Determined Contribution, the discount rate is typically based on the long-term expected return on assets.

**11. Funded Status or Funding Ratio**

Either the Market or Actuarial Value of Assets divided by the Actuarial Liability. For purposes of this report, the Funded Status represents the proportion of the actual assets as of the valuation date compared to the assets expected by the actuarial cost method. These measures are for contribution budgeting purposes and are not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

**12. Normal Cost**

The portion of the present value of future benefits allocated to the current year by the actuarial cost method.

**13. Present Value of Future Benefits**

The actuarial present value of all benefits both earned as of the valuation date and expected to be earned in the future by current plan members based on current plan provisions and actuarial assumptions.

**14. Unfunded Actuarial Liability (UAL)**

The Unfunded Actuarial Liability is the difference between Actuarial Liability and either the Market or the Actuarial Value of Assets. This value is sometimes referred to as "unfunded actuarial accrued liability." It represents the difference between the actual assets and the amount of assets expected by the actuarial cost method as of the valuation date.



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