



Classic Values, Innovative Advice

City of San José Police and Fire Department Retirement Plan

**Actuarial Valuation Report
as of June 30, 2015**

Produced by Cheiron

January 2016

TABLE OF CONTENTS

<i>Section</i>	<i>Page</i>
Letter of Transmittal	i
Section I Board Summary	1
Section II Certification	9
Section III Assets	10
Section IV Measures of Liability	14
Section V Contributions.....	20
Section VI Actuarial Section of the CAFR.....	27
 <i>Appendices</i>	
Appendix A Membership Information	29
Appendix B Actuarial Assumptions and Methods.....	35
Appendix C Summary of Plan Provisions.....	41
Appendix D Glossary of Terms.....	48

LETTER OF TRANSMITTAL

January 27, 2015

Board of Administration
City of San José Police and Fire Department Retirement Plan
1737 North 1st Street, Suite 580
San José, California 95112

Dear Members of the Board:

The purpose of this report is to present the June 30, 2015 actuarial valuation of the City of San José Police and Fire Department Retirement Plan ("Plan"). The report includes:

- Measures of funded status,
- Analysis of changes since the prior valuation,
- Development of City and member contribution rates for the fiscal year ending (FYE) June 30, 2017, and
- Historical and projected trends.

This report is for the use of the Board of Administration and its auditors in preparing financial reports in accordance with applicable laws and accounting requirements.

If you have any questions about the report or would like additional information, please let us know.

Sincerely,
Cheiron

A handwritten signature in blue ink that reads "William R. Hallmark".

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

A handwritten signature in blue ink that reads "Gene Kalwarski".

Gene Kalwarski, FSA, EA, FCA, MAAA
Principal Consulting Actuary

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

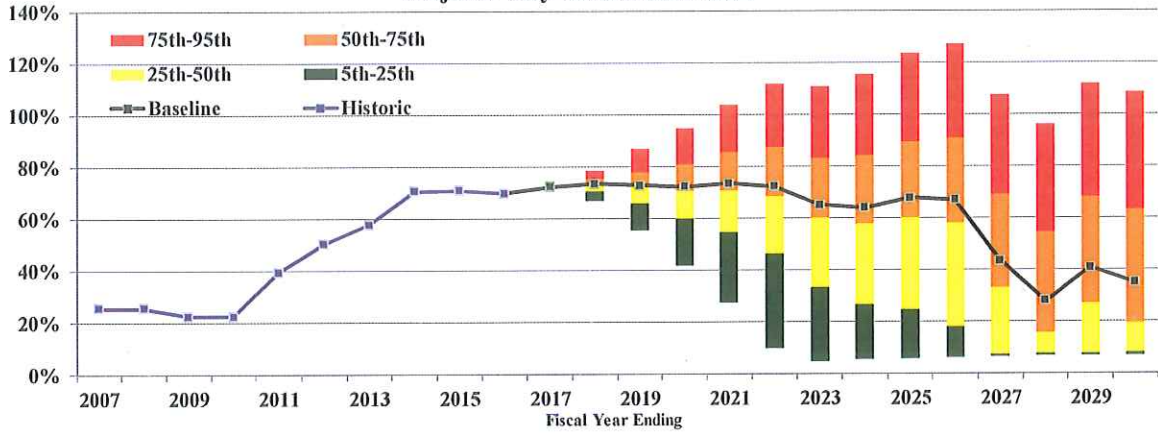
SECTION I - BOARD SUMMARY

The Dashboard

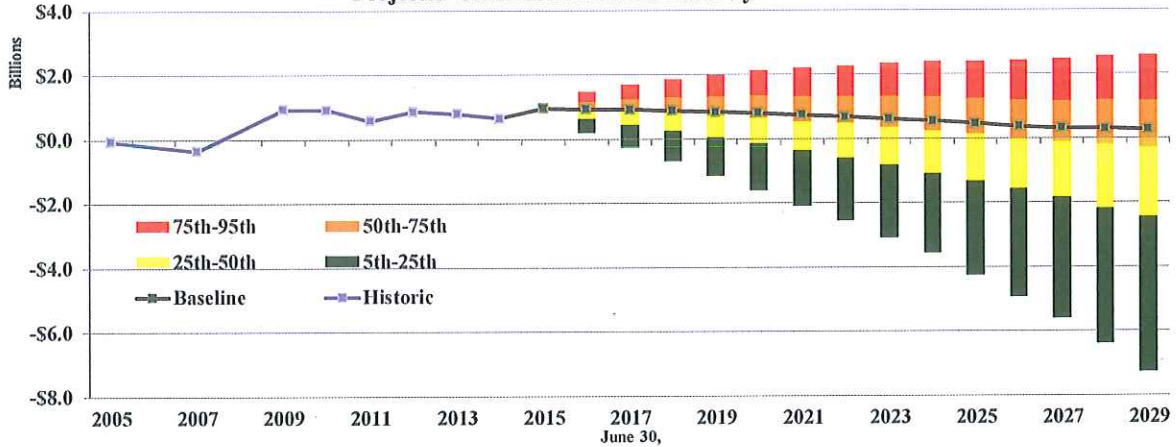
<u>Contributions</u>			Actuarial Liability	<u>Funding Status</u>		
	Fiscal Year Ending				Valuation Date	
	2017	2016		6/30/2015	6/30/2014	
Member Rate	10.81%	11.47%		Actuarial Liability (AL)	\$ 4,058	\$ 3,814
City Rate	72.33%	69.81%		Market Value of Assets (MVA)	3,110	3,168
City BOY Amount	\$ 133.4	\$ 131.1		Unfunded AL (UAL) - MVA	\$ 948	\$ 646
Normal Cost Rate	39.05%	39.59%		Funded Ratio - MVA	76.6%	83.1%
Interest on MVA UAL	34.74%	24.02%		Actuarial Value of Assets (AVA)	3,213	3,025
Additional UAL Rate	9.34%	17.67%		UAL - AVA	\$ 846	\$ 789
Total UAL Rate	44.08%	41.69%		Funded Ratio - AVA	79.2%	79.3%
Total Rate	83.13%	81.28%				

Amounts in Millions

Projected City Contribution Rates



Projected Unfunded Actuarial Liability



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION I - BOARD SUMMARY

Membership

As shown in Table I-1 below, total membership grew 0.5% from 2014 to 2015, but active membership decreased 4.7%. Tier 1 active membership decreased by about 120 members while Tier 2 active membership only increased by 42 members. Total payroll decreased 1.8% in aggregate, with Tier 1 payroll decreasing 4.9% and Tier 2 payroll increasing 60.2%.

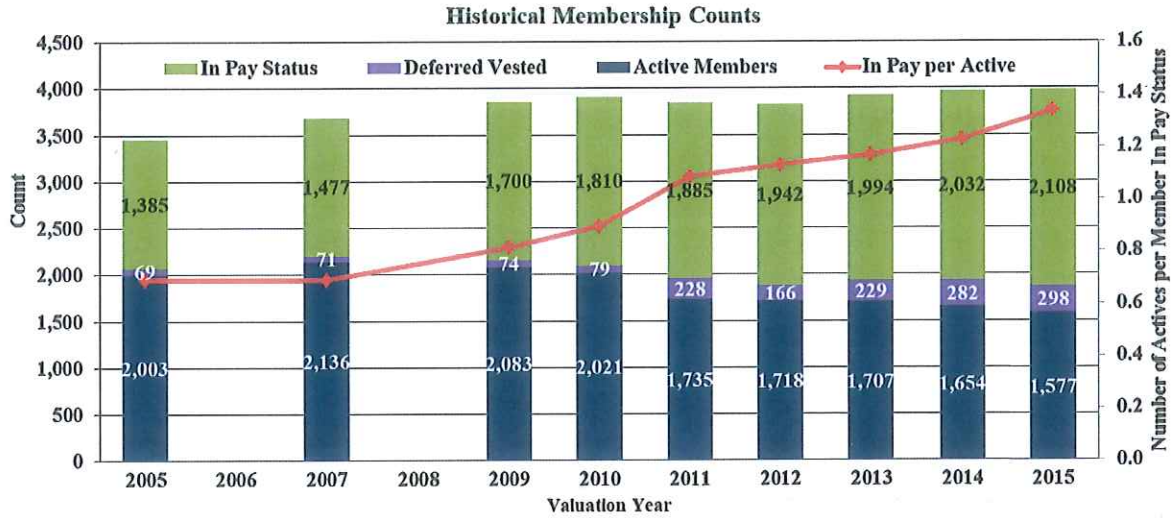
Table I-1 Total Membership			
	June 30, 2015	June 30, 2014	Change
Active Members			
Tier 1			
Fire	626	657	-4.7%
Police	<u>842</u>	<u>930</u>	<u>-9.5%</u>
Total	1,468	1,587	-7.5%
Tier 2			
Fire	22	0	N/A
Police	<u>87</u>	<u>67</u>	<u>29.9%</u>
Total	109	67	62.7%
Total Actives	1,577	1,654	-4.7%
Deferred Vested Members	298	282	5.7%
Members In Pay Status	<u>2,108</u>	<u>2,029</u>	<u>3.9%</u>
Total	3,983	3,965	0.5%
Active Member Payroll			
Tier 1	\$ 170,528	\$ 179,322	-4.9%
Tier 2	<u>14,205</u>	<u>8,867</u>	<u>60.2%</u>
Total	\$ 184,733	\$ 188,189	-1.8%

Dollar amounts in thousands

As shown in the chart on the following page, the number of active members has declined about 26% from 2,136 in 2007 to 1,577 in 2015. At the same time, the number of members in pay status has increased 43% from 1,477 in 2007 to 2,108 in 2015. As a result, the number of members in pay status that each active member has to support if there are actuarial losses has increased from approximately 0.7 in 2007 to 1.3 in 2015. This type of progression 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, contributions tend to become more volatile and sensitive to gains and losses. Future growth in the number of active members could stabilize or reverse this trend.

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION I - BOARD SUMMARY



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, 2014 and 2015.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION I - BOARD SUMMARY

Table I-2 Summary of Aggregate Funded Status and Related Ratios			
	June 30, 2015	June 30, 2014	Change
1. Actuarial Liability			
a. Actives	\$ 1,239,000	\$ 1,228,215	0.9%
b. Deferred Vested	61,667	48,870	26.2%
c. In Pay Status	<u>2,757,743</u>	<u>2,536,741</u>	<u>8.7%</u>
d. Total	\$ 4,058,410	\$ 3,813,825	6.4%
2. Market Value of Assets (MVA)	\$ 3,110,064	\$ 3,168,171	-1.8%
3. Actuarial Value of Assets (AVA)	\$ 3,212,776	\$ 3,025,101	6.2%
4. UAL - MVA Basis (1.d. - 2.)	\$ 948,346	\$ 645,654	46.9%
5. UAL - AVA Basis (1.d. - 3.)	\$ 845,634	\$ 788,724	7.2%
6. Funding Ratio - MVA Basis (2. ÷ 1.d.)	76.6%	83.1%	-6.4%
7. Funding Ratio - AVA Basis (3. ÷ 1.d.)	79.2%	79.3%	-0.2%
8. Expected Payroll	\$ 184,733	\$ 188,189	-1.8%
9. Asset Leverage Ratio (2. ÷ 8.)	16.8	16.8	0.0%
10. Actuarial Liability Leverage Ratio (1.d. ÷ 8.)	22.0	20.3	8.4%
11. Interest on UAL - MVA Basis	\$ 64,176	\$ 43,692	46.9%
12. Interest Cost as Percent of Payroll (11. ÷ 8.)	34.7%	23.2%	11.5%

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 6.4% while the market value of assets decreased 1.8%. As a result, the unfunded actuarial liability measured on the market value of assets increased 46.9% from approximately \$645.7 million to \$948.3 million, and the funding ratio on an MVA basis decreased from 83.1% to 76.6%.

The asset smoothing method deferred 80% of the investment loss, resulting in a 6.2% increase in the actuarial value of assets and relatively stable funding ratios between 2014 and 2015. The market value of assets is smaller than the actuarial value, so if assumptions are 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 16.8 means that if the Plan experiences a 10% loss on assets compared to the discount rate of 7.0%, the loss would be equivalent to 168% of payroll. Interest payments on such a loss would be approximately 11.75% of payroll.

Interest payments on the current UAL are approximately 35% of payroll, increasing from 23% of payroll in the prior year due to the combination of the increased UAL and the lower payroll. As the Plan becomes better funded, the asset leverage ratio will increase, and if it was 100% funded,

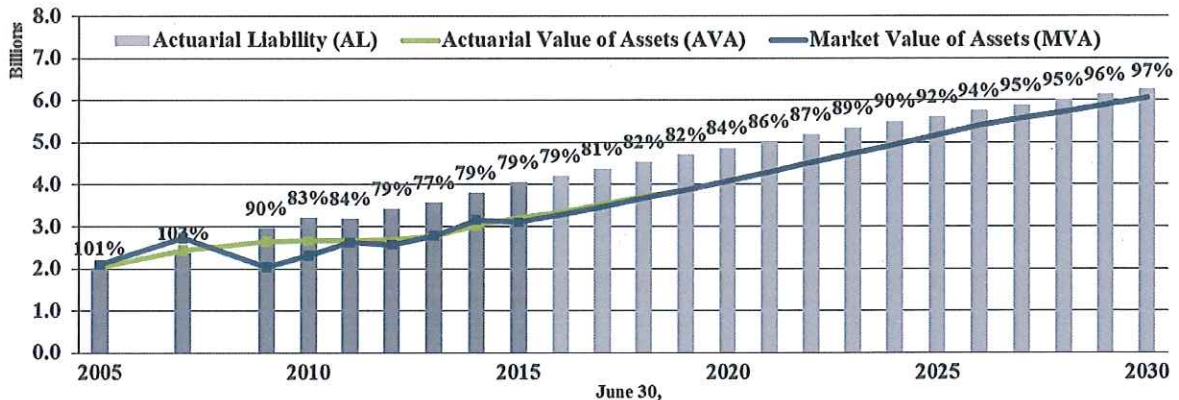
**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION I - BOARD SUMMARY

the leverage ratio would be 22.0. This leverage ratio is extremely high compared to other plans indicating that this plan is far more sensitive to investment gains and losses than other large public pension plans.

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 2005. The historical actuarial liability is shown in dark gray while the projected actuarial liability is shown in a lighter gray. From 2007 to 2013, (with the exception of 2011), the funding ratio declined primarily because the plan experienced lower than expected investment returns on the actuarial value of assets and reduced its assumption of future investment returns. If all assumptions are met in the future, the funded status is expected to reach 100% by 2035.

Historical and Projected Assets and Actuarial Liability



While the funded status is expected to improve, the stochastic projection shown at the bottom of the dashboard indicates a wide range of projected UAL depending on investment returns. In 2021, for example, the projected UAL ranges from over \$2 billion with about 5% percent probability to a surplus of over \$2 billion also with 5% probability.

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

Changes in UAL

The chart on the following page shows the historical changes to the UAL, including investment gains and losses, liability gains and losses, assumption changes and benefit changes. It is worth noting that 2007, 2014, and 2015 are the only years in the last 10 years in which there were investment gains on the actuarial value of assets. Only two years in the last ten, 2009 and 2014, experienced a liability loss. This year is also the eighth consecutive valuation in which assumption changes were adopted that increased the measure of liability. This year the assumption changes are based on our demographic experience study and do not include a reduction in the discount rate. Appendix B provides a summary of the assumptions and more

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION I - BOARD SUMMARY

detail on the changes, including the rationale for each change, can be found in the experience study report.

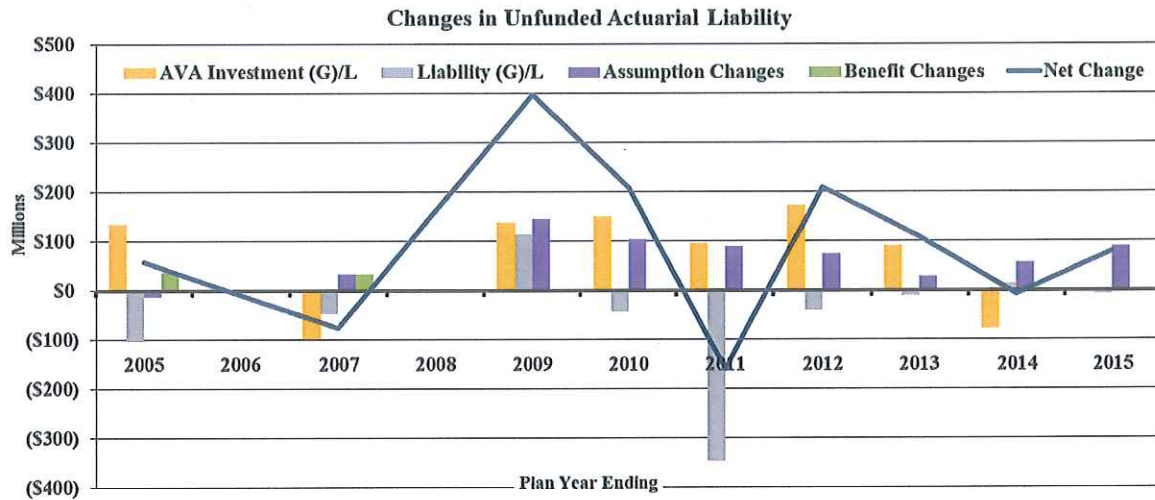


Table I-3 below shows the breakdown of the experience gains and losses incurred in the last year by source. In total, there was a gain of approximately \$10 million, mostly attributed to lower salary increases than anticipated offset by higher retirement rates than anticipated. On an actuarial liability of over \$4 billion, these gains are very small.

Table I-3 Sources of FYE 2015 Experience Gain or (Loss)		
Source		Amount
Investment experience	\$	2,806
Salary experience		15,208
Retirement experience		(8,718)
Other experience		801
Total	\$	10,097

Dollar amounts in thousands

Contribution Rates

Table I-4 on the next page summarizes the contribution rates and City contribution amounts for the fiscal years ending in 2016 and 2017. Tier 1 rates have increased significantly from 2016 to 2017, reflecting the assumption changes and the decrease in Tier 1 payroll. However, as a dollar amount, the City's Tier 1 contribution has only increased slightly. Tier 2 rates have decreased

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION I - BOARD SUMMARY

slightly largely due to the assumption changes. However, as Tier 2 grows, the dollar amount of Tier 2 contributions increases.

Table I-4 Summary of Contributions						
	Fiscal Year Ending 2017			Fiscal Year Ending 2016		
	Fire	Police	Total	Fire	Police	Total
Tier 1						
Member Rate	11.07%	10.59%	10.80%	11.83%	11.26%	11.50%
City Rate	<u>81.61%</u>	<u>80.40%</u>	<u>80.92%</u>	<u>74.95%</u>	<u>73.01%</u>	<u>73.82%</u>
Total Rate	92.68%	90.99%	91.72%	86.78%	84.27%	85.31%
Projected Payroll	\$ 72,350	\$ 94,977	\$ 167,328	\$ 75,923	\$ 105,928	\$ 181,851
City Contribution Amounts						
Beginning of Year	57,080	73,819	130,898	55,011	74,758	129,769
Throughout the Year	\$ 59,044	\$ 76,359	\$ 135,402	\$ 56,904	\$ 77,330	\$ 134,234
Tier 2						
Member Rate	10.61%	10.97%	10.89%	11.16%	11.27%	11.25%
City Rate	<u>10.61%</u>	<u>10.97%</u>	<u>10.89%</u>	<u>11.16%</u>	<u>11.27%</u>	<u>11.25%</u>
Total Rate	21.22%	21.94%	21.79%	22.32%	22.54%	22.51%
Projected Payroll	\$ 5,035	\$ 18,374	\$ 23,409	\$ 1,764	\$ 10,690	\$ 12,454
City Contribution Amounts						
Beginning of Year	516	1,949	2,465	190	1,165	1,355
Throughout the Year	\$ 534	\$ 2,016	\$ 2,550	\$ 197	\$ 1,205	\$ 1,402

Dollar amounts in thousands

As shown in the dashboard, projected City contribution rates are expected to remain relatively level in the short term before declining significantly when portions of the UAL are fully amortized. 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 5th to the 95th percentile in FYE 2022 (based on a valuation five years from now), is from 10% of payroll to 110% of payroll. Such a range is due to the combination of the size of the assets to payroll ratio and the standard deviation of the investment portfolio. The range of contribution rates could be narrowed somewhat by extending amortization periods, but that only controls short-term volatility. Fundamentally, the risk of very high contribution rates would need to be controlled through the plan's investments.

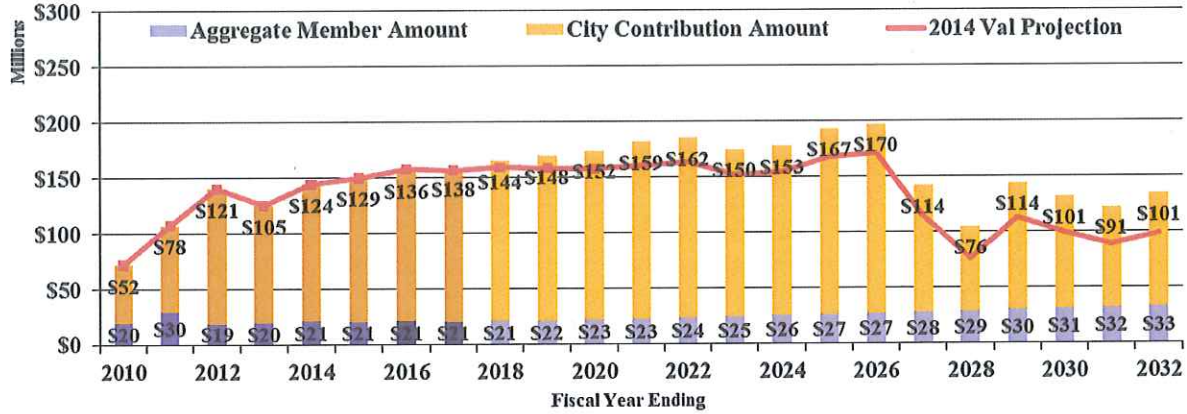
The chart on the following page shows historical and projected aggregate contribution amounts for the Plan compared to those projected in the prior valuation. The purple bars are member contribution amounts for Police and Fire for both Tier 1 and Tier 2. The gold bars are city contribution amounts for 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

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION I - BOARD SUMMARY

amounts assume that all assumptions are met. The red line represents the projection from the prior valuation.

Historical and Projected Aggregate Contribution Amounts



Since the last valuation, the investment losses and the assumption changes have increased projected City contribution amounts. There is a significant decrease in City contribution amounts projected between FYE 2026 and FYE 2028 due to the completion of payments on the amortization schedules for the 2009 and 2010 assumption changes and experience losses.

Section V of this report provides additional detail on the contribution rates and the amortization schedules.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION II - CERTIFICATION

The purpose of this report is to present the June 30, 2015 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 and wage inflation assumptions in this report were adopted by the Board of Administration with our input at the December 4, 2014 Board meeting. All other assumptions were adopted at the December 3, 2015 Board meeting based on recommendations from our experience study covering plan experience during the period from July 1, 2009 through June 30, 2015.

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.

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

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

Gene Kalwarski, FSA, EA, FCA, MAAA
Principal Consulting Actuary

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION III - 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 represents, as of the valuation date, the value of the assets if they were liquidated on that date. The actuarial value of assets is a value that smooths annual investment returns over multiple 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 III-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 III-1						
Change in Market Value of Assets						
	Fiscal Year Ending 2015				FYE 2014	
	Tier 1	Tier 2 Fire	Tier 2 Police	Total	Total	
Beginning Market Value	\$ 3,167,629	\$ 0	\$ 543	\$ 3,168,171	\$ 2,789,524	
Contributions						
Member	20,064	72	611	20,747	21,115	
City	128,596	72	611	129,279	123,583	
Total	\$ 148,659	\$ 144	\$ 1,222	\$ 150,025	\$ 144,698	
Net Investment Earnings	(27,680)	(1)	(9)	(27,690)	404,979	
Benefit Payments	176,196	0	56	176,252	167,398	
Administrative Expenses	4,065	25	100	4,191	3,631	
Market Value, End of Year	\$ 3,108,346	\$ 118	\$ 1,599	\$ 3,110,064	\$ 3,168,171	
Estimated Rate of Return	-0.9%	-0.9%	-0.9%	-0.9%	14.3%	
Estimated Return Net of Admin	-1.0%	-35.5%	-9.7%	-1.0%	14.1%	

Dollar amounts in thousands

The net investment earnings for the year ended June 30, 2015 represent approximately a -0.9% return on the market value of assets compared to an assumed return of 7.00%. For the year ended June 30, 2014, the net investment return was approximately 14.3% (7.125% was assumed). We understand that administrative expenses are allocated to each tier based on the total number of members in each tier. As a result, the estimated return net of administrative expenses varies greatly between the tiers. Our assumption for administrative expenses effectively allocates expenses between the tiers based on payroll.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION III - 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 (7.00% for 2014-15, 7.125% for 2013-14, 7.25% for 2012-13, and 7.50% for 2011-12) 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 III-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
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION III - ASSETS

Table III-2 Development of Actuarial Value of Assets					
	Fiscal Year Ending 2015				FYE 2014
	Tier 1	Tier 2 Fire	Tier 2 Police	Total	Total
Market Value of Assets (MVA)	\$ 3,108,346	\$ 118	\$ 1,599	\$ 3,110,064	\$ 3,168,171
<u>FYE 2015</u>					
Actual Earnings	(27,680)	(1)	(9)	(27,690)	\$ 404,979
Expected Earnings	220,647	4	75	220,725	202,301
Investment Gain or (Loss)	(248,327)	(5)	(84)	(248,415)	202,678
Deferred (80%)	(198,661)	(4)	(67)	(198,732)	\$ 162,142
<u>FYE 2014</u>					
Actual Earnings	\$ 404,941	\$ 0	\$ 37	\$ 404,979	\$ 248,258
Expected Earnings	202,283	0	18	202,301	192,935
Investment Gain or (Loss)	202,658	0	20	202,678	55,323
Deferred (60%)	\$ 121,595	\$ 0	\$ 12	\$ 121,607	\$ 33,194
<u>FYE 2013</u>					
Actual Earnings	\$ 248,258	\$ 0	\$ 0	\$ 248,258	\$ (33,877)
Expected Earnings	192,935	0	0	192,935	204,706
Investment Gain or (Loss)	55,323	0	0	55,323	(238,582)
Deferred (40%)	\$ 22,129	\$ 0	\$ 0	\$ 22,129	\$ (95,433)
<u>FYE 2012</u>					
Actual Earnings	\$ (33,877)	\$ 0	\$ 0	\$ (33,877)	\$ 393,250
Expected Earnings	204,706	0	0	204,706	177,415
Investment Gain or (Loss)	(238,582)	0	0	(238,582)	215,835
Deferred (20%)	\$ (47,716)	\$ 0	\$ 0	\$ (47,716)	\$ 43,167
Total Deferred Gain or (Loss)	\$ (102,653)	\$ (4)	\$ (56)	\$ (102,713)	\$ 143,070
Preliminary Actuarial Value of Assets	\$ 3,211,000	\$ 122	\$ 1,655	\$ 3,212,776	\$ 3,025,101
Minimum (80% of MVA)	\$ 2,486,677	\$ 95	\$ 1,279	\$ 2,488,051	\$ 2,534,537
Maximum (120% of MVA)	\$ 3,730,016	\$ 142	\$ 1,919	\$ 3,732,077	\$ 3,801,806
Actuarial Value of Assets	\$ 3,211,000	\$ 122	\$ 1,655	\$ 3,212,776	\$ 3,025,101
Ratio of Actuarial to Market	103.2%	103.1%	103.5%	103.3%	95.5%
Estimated Rate of Return	7.1%	5.3%	5.8%	7.1%	9.9%

Dollar amounts in thousands

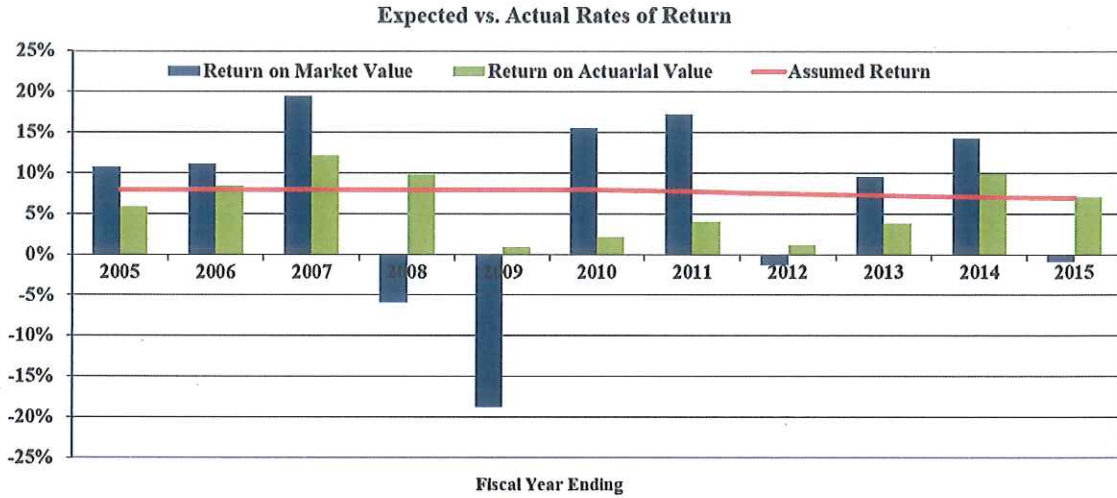
On the basis of the smoothed actuarial value of assets, the return for the year ending June 30, 2015 was approximately 7.1%, more than the assumed return of 7.00%, and more than the return on the market value of assets. The estimated rate of return varies by tier, reflecting the different

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION III - ASSETS

cash flows for each tier and the different effective dates of the tiers that affect the number of years included in the smoothing.

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. Because of the 5-year smoothing, the return on the actuarial value is less volatile than the return on the market value.



CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION IV - 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 IV-1 below shows the present value of future benefits as of June 30, 2015 and June 30, 2014 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 IV-1 Present Value of Future Benefits						
	Fire			Police		
	6/30/2015	6/30/2014	% Change	6/30/2015	6/30/2014	% Change
Tier 1						
Actives	\$ 734,054	\$ 791,297	-7.2%	\$ 1,016,441	\$ 1,133,390	-10.3%
Deferred Vested	9,228	7,379	25.1%	52,250	41,417	26.2%
In Pay Status	<u>1,037,714</u>	<u>966,059</u>	<u>7.4%</u>	<u>1,720,029</u>	<u>1,570,682</u>	<u>9.5%</u>
Total Tier 1	\$ 1,780,996	\$ 1,764,735	0.9%	\$ 2,788,720	\$ 2,745,489	1.6%
Tier 2						
Actives	\$ 4,551	\$ 0	N/A	\$ 18,960	\$ 19,543	-3.0%
Deferred Vested	0	0	N/A	188	73	157.1%
In Pay Status	<u>0</u>	<u>0</u>	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>N/A</u>
Total Tier 2	\$ 4,551	\$ 0	N/A	\$ 19,149	\$ 19,617	-2.4%
Total	\$ 1,785,547	\$ 1,764,735	1.2%	\$ 2,807,869	\$ 2,765,106	1.5%

Dollar amounts in thousands

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, as of entry age into the Plan, of each member's projected future benefits divided by the value, also at entry age, of the each member's expected future salary. 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 under the Entry Age actuarial cost method if all assumptions are met. In addition, administrative expenses are added to the EA normal cost rate to get the total normal cost rate.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION IV - MEASURES OF LIABILITY

Table IV-2 below shows the EA normal cost and Total normal cost rates as of June 30, 2015 and June 30, 2014 separately by Tier for Police and Fire. Fire Tier 2 members are new to the valuation this year. The rate for Fire Tier 2 as of June 30, 2014 is based on a hypothetical set of data consisting of Fire Tier 1 members hired in the last ten years (See the June 30, 2014 actuarial valuation report for a summary of the hypothetical data).

Table IV-2 Entry Age Normal Cost By Group							
	Fire			Police			
	6/30/2015	6/30/2014	% Change	6/30/2015	6/30/2014	% Change	
Tier 1							
Retirement	\$ 16,021	\$ 17,689	-9.4%	\$ 18,307	\$ 26,444	-30.8%	
Termination	1,335	1,155	15.6%	4,968	3,139	58.2%	
Death	339	408	-16.9%	398	492	-19.1%	
Disability	9,560	10,769	-11.2%	11,808	10,339	14.2%	
Reciprocity	<u>161</u>	<u>175</u>	<u>-7.7%</u>	<u>700</u>	<u>524</u>	<u>33.6%</u>	
Total Tier 1 Normal Cost	\$ 27,416	\$ 30,195	-9.2%	\$ 36,182	\$ 40,938	-11.6%	
Expected Payroll	\$ 69,640	\$ 71,609	-2.7%	\$ 95,216	\$ 101,748	-6.4%	
Normal Cost Rate	39.38%	42.16%	-2.78%	38.01%	40.23%	-2.22%	
Administrative Expense Rate	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>	
Total Normal Cost Rate	41.28%	43.96%	-2.68%	39.91%	42.03%	-2.12%	
Tier 2							
Retirement	\$ 72	N/A	N/A	\$ 347	\$ 396	-12.3%	
Termination	18	N/A	N/A	241	114	110.7%	
Death	5	N/A	N/A	22	26	-14.1%	
Disability	<u>164</u>	<u>N/A</u>	<u>N/A</u>	<u>769</u>	<u>524</u>	<u>46.9%</u>	
Total Tier 2 Normal Cost	\$ 259	N/A	N/A	\$ 1,380	\$ 1,060	30.2%	
Expected Payroll	\$ 1,347	N/A	N/A	\$ 6,881	\$ 5,102	34.9%	
Normal Cost Rate	19.22%	20.52%	-1.30%	20.06%	20.76%	-0.70%	
Administrative Expense Rate	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>	
Total Normal Cost Rate	21.12%	22.32%	-1.20%	21.96%	22.56%	-0.60%	

Dollar amounts in thousands

Table IV-3 on the following page shows the impact of the assumption changes as of June 30, 2015 on the normal cost rate by Tier for Police and Fire members.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION IV - MEASURES OF LIABILITY

Table IV-3 Impact of Assumption Changes on Normal Cost						
	Fire			Police		
	New	Old	Change	New	Old	Change
Tier 1						
Normal Cost Rate	39.38%	42.45%	-3.07%	38.01%	40.75%	-2.74%
Administrative Expense Rate	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>
Total Normal Cost Rate	41.28%	44.25%	-2.97%	39.91%	42.55%	-2.64%
Tier 2						
Normal Cost Rate	19.22%	20.66%	-1.44%	20.06%	20.14%	-0.08%
Administrative Expense Rate	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>	<u>1.90%</u>	<u>1.80%</u>	<u>0.10%</u>
Total Normal Cost Rate	21.12%	22.46%	-1.34%	21.96%	21.94%	0.02%

Table IV-4 below shows the breakdown of the normal cost rate between the Retirement and COLA funds.

Table IV-4 Normal Cost Rate Breakdown						
	Fire			Police		
	Retirement	COLA	Total	Retirement	COLA	Total
Tier 1						
Normal Cost Rate	27.19%	12.19%	39.38%	26.31%	11.70%	38.01%
Administrative Expense Rate	<u>1.31%</u>	<u>0.59%</u>	<u>1.90%</u>	<u>1.31%</u>	<u>0.59%</u>	<u>1.90%</u>
Total Normal Cost Rate	28.50%	12.78%	41.28%	27.62%	12.29%	39.91%
Tier 2						
Normal Cost Rate	16.45%	2.77%	19.22%	17.17%	2.88%	20.05%
Administrative Expense Rate	<u>1.63%</u>	<u>0.27%</u>	<u>1.90%</u>	<u>1.63%</u>	<u>0.28%</u>	<u>1.90%</u>
Total Normal Cost Rate	18.08%	3.04%	21.12%	18.80%	3.16%	21.96%

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 IV-5 on the next page shows the actuarial liability as of June 30, 2015 and June 30, 2014 separately by Tier for Police and Fire. Fire Tier 2 members are new to the valuation this year, so this is the first year they have an actuarial liability.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION IV - MEASURES OF LIABILITY

Table IV-5 Actuarial Liability						
	Fire			Police		
	6/30/2015	6/30/2014	% Change	6/30/2015	6/30/2014	% Change
Tier 1						
Actives						
Retirement	\$ 338,643	\$ 316,519	7.0%	\$ 607,132	\$ 614,817	-1.2%
Termination	3,841	5,411	-29.0%	22,746	15,012	51.5%
Death	1,616	2,698	-40.1%	1,970	3,512	-43.9%
Disability	<u>134,609</u>	<u>135,729</u>	<u>-0.8%</u>	<u>126,832</u>	<u>134,095</u>	<u>-5.4%</u>
Total Actives	\$ 478,709	\$ 460,357	4.0%	\$ 758,680	\$ 767,437	-1.1%
Deferred Vested	\$ 9,228	\$ 7,379	25.1%	\$ 52,250	\$ 41,417	26.2%
In Pay Status						
Service Retirees	\$ 401,828	\$ 389,200	3.2%	\$ 1,105,462	\$ 1,020,454	8.3%
Beneficiaries	67,313	60,422	11.4%	63,949	54,289	17.8%
Disabled Retirees	<u>568,573</u>	<u>516,437</u>	<u>10.1%</u>	<u>550,618</u>	<u>495,939</u>	<u>11.0%</u>
Total In Pay Status	\$ 1,037,714	\$ 966,059	7.4%	\$ 1,720,029	\$ 1,570,682	9.5%
Tier 1 Actuarial Liability	\$ 1,525,651	\$ 1,433,795	6.4%	\$ 2,530,959	\$ 2,379,536	6.4%
Tier 2						
Actives						
Retirement	\$ 47	N/A	N/A	\$ 386	\$ 165	134.2%
Termination	19	N/A	N/A	413	78	427.0%
Death	2	N/A	N/A	13	7	79.8%
Disability	<u>107</u>	<u>N/A</u>	<u>N/A</u>	<u>624</u>	<u>170</u>	<u>266.2%</u>
Total Actives	\$ 175	N/A	N/A	\$ 1,436	\$ 421	241.2%
Deferred Vested	\$ 0	N/A	N/A	\$ 188	\$ 73	157.1%
Tier 2 Actuarial Liability	\$ 175	N/A	N/A	\$ 1,624	\$ 494	228.7%
Total Actuarial Liability	\$ 1,525,826	\$ 1,433,795	6.4%	\$ 2,532,584	\$ 2,380,030	6.4%

Dollar amounts in thousands

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION IV - MEASURES OF LIABILITY

Table IV-6 below shows the impact of the assumption changes on the actuarial liability by Tier for Police and Fire as of June 30, 2015.

Table IV-6 Impact of Assumption Changes on Actuarial Liability						
	Fire			Police		
	New	Old	Change	New	Old	Change
Tier 1						
Actives	\$ 478,709	\$ 467,240	2.5%	\$ 758,680	\$ 763,882	-0.7%
Deferred Vested	9,228	8,318	10.9%	52,250	47,595	9.8%
In Pay Status	<u>1,037,714</u>	<u>1,006,389</u>	<u>3.1%</u>	<u>1,720,029</u>	<u>1,673,173</u>	<u>2.8%</u>
Tier 1 Total	\$ 1,525,651	\$ 1,481,947	2.9%	\$ 2,530,959	\$ 2,484,649	1.9%
Tier 2						
Actives	\$ 175	\$ 168	4.5%	\$ 1,436	\$ 1,454	-1.2%
Deferred Vested	<u>0</u>	<u>0</u>	N/A	<u>188</u>	<u>188</u>	<u>0.0%</u>
Tier 2 Total	\$ 175	\$ 168	4.5%	\$ 1,624	\$ 1,642	-1.1%
Plan Total	\$ 1,525,826	\$ 1,482,115	2.9%	\$ 2,532,584	\$ 2,484,649	1.9%

Dollar amounts in thousands

Table IV-7 below shows the breakdown of the Actuarial Liability as of June 30, 2015 between the Retirement and COLA funds.

Table IV-7 Actuarial Liability Breakdown						
	Fire			Police		
	Retirement	COLA	Total	Retirement	COLA	Total
Tier 1						
Actives	\$ 328,567	\$ 150,141	\$ 478,709	\$ 514,857	\$ 243,823	\$ 758,680
Deferred Vested	5,699	3,530	9,228	32,742	19,508	52,250
In Pay Status	<u>563,091</u>	<u>474,623</u>	<u>1,037,714</u>	<u>939,847</u>	<u>780,182</u>	<u>1,720,029</u>
Tier 1 Total	\$ 897,357	\$ 628,294	\$ 1,525,651	\$ 1,487,446	\$ 1,043,513	\$ 2,530,959
Tier 2						
Actives	\$ 151	\$ 24	\$ 175	\$ 1,259	\$ 177	\$ 1,436
Deferred Vested	<u>0</u>	<u>0</u>	<u>0</u>	<u>188</u>	<u>0</u>	<u>188</u>
Tier 2 Total	\$ 151	\$ 24	\$ 175	\$ 1,447	\$ 177	\$ 1,624
Plan Total	\$ 897,508	\$ 628,318	\$ 1,525,826	\$ 1,488,893	\$ 1,043,691	\$ 2,532,584

Dollar amounts in thousands

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION IV - MEASURES OF LIABILITY

Analysis of Change in Unfunded Actuarial Liability (UAL)

The UAL of any retirement plan is expected to change at each subsequent valuation for a variety of reasons. In each valuation, we report on those elements of change in the UAL that have particular significance or could potentially affect the long-term financial outlook of a retirement plan. Table IV-8 below develops the expected UAL by Tier and identifies the primary sources for changes in the UAL since the last valuation.

Table IV-8 Development of Experience Gain or (Loss)				
	Tier 1	Tier 2 Fire	Tier 2 Police	Total
Unfunded actuarial liability, 6/30/2014	\$ 788,757	\$ 0	\$ (33)	\$ 788,724
Interest	55,213	0	(2)	55,211
Expected unfunded actuarial liability payment with interest	(78,211)	0	3	(78,209)
Change in assumptions	90,014	7	(18)	90,004
Expected unfunded actuarial liability, 6/30/2015	\$ 855,773	\$ 7	\$ (50)	\$ 855,730
Actual unfunded actuarial liability	845,611	53	(31)	845,633
Experience Gain or (Loss)	\$ 10,162	\$ (46)	\$ (20)	\$ 10,097
Portion due to investment experience				\$ 2,806
Portion due to salary experience				15,208
Portion due to retirement experience				(8,718)
Portion due to other experience				801
Total				\$ 10,097

Dollar amounts in thousands

There were no Fire Tier 2 members in the June 30, 2014 data. The experience gain for Tier 2 Fire is attributable to the different demographic characteristics and turnover of the actual Tier 2 Fire hires compared to what had been expected based on the hypothetical data used to set the Tier 2 Fire normal cost rate.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION V - CONTRIBUTIONS

Under the contribution allocation procedure employed by the Plan, there are two components to the total contribution: the normal cost, including assumed administrative expenses, and the unfunded actuarial liability contribution. The normal cost rate was developed in Section IV. This section develops the UAL contribution rate and divides the contributions between the members and the City.

Table V-1 Tier 1 UAL Amortization Bases						
Source	Date	Outstanding Balance		Remaining Period	Amortization Payment	
		Retirement	COLA		Retirement	COLA
Members						
Ben Improvement (All)	6/30/1996	\$ (688)	\$ 1,049	2.0	\$ (374)	\$ 571
Rate Increase Delay (Police)	12/17/2006	123	48	6.5	22	9
Total Members		\$ (565)	\$ 1,096		\$ (352)	\$ 580
City						
UAAL	6/30/2003	\$ 2,317	\$ (3,533)	2.0	\$ 1,262	\$ (1,924)
Experience Loss	6/30/2005	(58,265)	88,845	6.0	(11,339)	17,290
Ben Improvement (Police)	6/30/2005	18,057	6,992	6.0	3,514	1,361
Ben Improvement (Fire)	6/30/2007	19,001	7,223	8.0	2,870	1,091
Experience Gain	6/30/2007	(75,543)	(33,908)	8.0	(11,409)	(5,121)
Assumption Change	6/30/2007	16,556	8,889	8.0	2,501	1,343
Experience Loss	6/30/2009	136,445	72,389	10.0	17,052	9,047
Assumption Change	6/30/2009	80,221	44,425	10.0	10,026	5,552
Experience Loss	6/30/2010	92,005	49,680	11.0	10,629	5,740
Assumption Change	6/30/2010	59,094	33,677	11.0	6,827	3,891
Experience Gain	6/30/2011	(140,197)	(88,694)	12.0	(15,096)	(9,550)
Assumption Change	6/30/2011	22,435	31,937	16.0	1,934	2,754
Experience Loss	6/30/2012	81,746	44,007	13.0	8,261	4,447
SRBR Elimination	6/30/2012	(30,668)	0	13.0	(3,099)	0
Assumption Change	6/30/2012	57,337	48,839	17.0	4,728	4,028
Experience Loss	6/30/2013	49,529	29,044	14.0	4,724	2,770
Assumption Change	6/30/2013	6,470	21,545	18.0	512	1,705
Experience Gain	6/30/2014	(44,507)	(18,214)	15.0	(4,027)	(1,648)
Assumption Change	6/30/2014	28,234	27,361	19.0	2,151	2,084
Experience Gain	6/30/2015	(10,538)	376	16.0	(909)	32
Assumption Change	6/30/2015	6,948	83,066	20.0	511	6,107
7/1 UAL Payment		31,012	43,445			
Total City		\$ 347,690	\$ 497,390		\$ 31,622	\$ 50,997
Total Tier 1		\$ 347,125	\$ 498,486		\$ 31,270	\$ 51,576

Dollar amounts in thousands

Table V-1 above shows the outstanding balance, remaining period and amortization payments for each component of the Tier 1 UAL as of June 30, 2015. Each component is amortized from the valuation date in which it was first recognized as a level percent of expected payroll with

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION V - CONTRIBUTIONS

payroll assumed to increase 3.25% each year. The City is responsible for all components except the 1996 benefit improvement and the contribution rate increase delay for Police in 2006. Table V-2 below shows the division of the Tier 1 UAL payments between Police and Fire and between the members and the City.

Table V-2 Tier 1 UAL Amortization Base Payments						
Source	Fire			Police		
	Retirement	COLA	Total	Retirement	COLA	Total
Members						
1996 Ben Improvement (All)	\$ (162)	\$ 247	\$ 85	\$ (213)	\$ 324	\$ 112
2006 Rate Increase Delay (Police)	0	0	0	22	9	31
Total Members	\$ (162)	\$ 247	\$ 85	\$ (190)	\$ 333	\$ 143
City						
2003 UAAL	\$ 545	\$ (832)	\$ (286)	\$ 716	\$ (1,092)	\$ (376)
2005 Experience Loss	(4,903)	7,476	2,573	(6,436)	9,814	3,378
2005 Ben Improvement (Police)	0	0	0	3,514	1,361	4,875
2007 Ben Improvement (Fire)	2,870	1,091	3,961	0	0	0
2007 Experience Gain	(4,933)	(2,214)	(7,148)	(6,476)	(2,907)	(9,383)
2007 Assumption Change	1,081	580	1,662	1,419	762	2,181
2009 Experience Loss	7,373	3,912	11,285	9,679	5,135	14,814
2009 Assumption Change	4,335	2,401	6,736	5,691	3,151	8,842
2010 Experience Loss	4,596	2,482	7,078	6,033	3,258	9,291
2010 Assumption Change	2,952	1,682	4,634	3,875	2,208	6,084
2011 Experience Gain	(6,527)	(4,129)	(10,657)	(8,569)	(5,421)	(13,990)
2011 Assumption Change	836	1,191	2,027	1,098	1,563	2,661
2012 Experience Loss	3,572	1,923	5,495	4,689	2,524	7,213
2012 SRBR Elimination	(1,340)	0	(1,340)	(1,759)	0	(1,759)
2012 Assumption Change	2,044	1,741	3,786	2,684	2,286	4,970
2013 Experience Loss	2,043	1,198	3,241	2,682	1,573	4,254
2013 Assumption Change	221	737	959	291	968	1,258
2014 Experience Gain	(1,741)	(713)	(2,454)	(2,286)	(936)	(3,222)
2014 Assumption Change	930	901	1,831	1,221	1,183	2,404
2015 Experience Gain	(393)	14	(379)	(516)	18	(497)
2015 Assumption Change	221	2,641	2,861	290	3,466	3,756
Total City	\$ 13,783	\$ 22,081	\$ 35,864	\$ 17,840	\$ 28,915	\$ 46,755
Total Tier 1	\$ 13,621	\$ 22,328	\$ 35,949	\$ 17,650	\$ 29,248	\$ 46,898

Dollar amounts in thousands

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

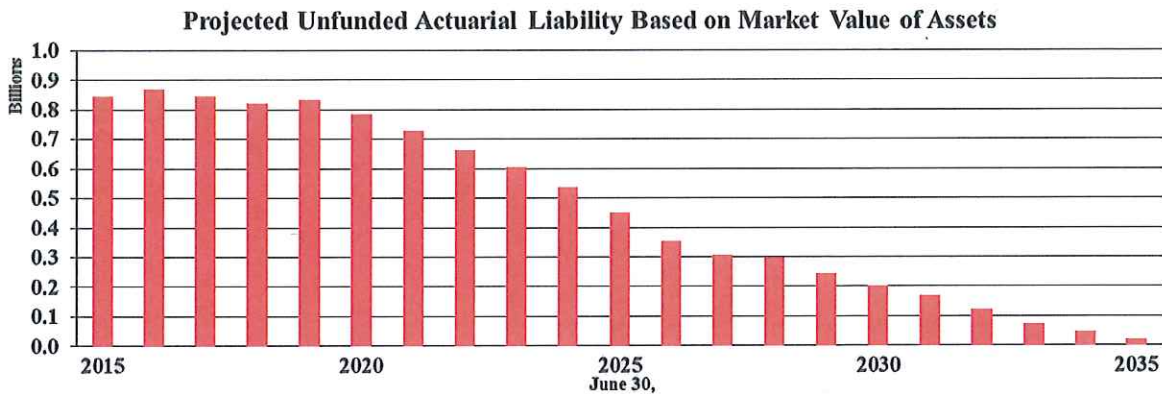
SECTION V - CONTRIBUTIONS

Table V-3 below shows the outstanding balance, remaining period, and amortization payments for each component of the Tier 2 UAL as of June 30, 2015. Each component is amortized from the valuation date in which it was first recognized. All components of the Tier 2 UAL are split evenly between the members and the City.

Table V-3 Tier 2 UAL Amortization Bases						
Source	Date	Outstanding Balance		Remaining Period	Amortization Payment	
		Retirement	COLA		Retirement	COLA
Fire - Members and City						
Experience Gain	6/30/2015	\$ 36	\$ 10	16.0	\$ 3	\$ 1
Assumption Change	6/30/2015	5	2	20.0	0	0
Total Tier 2 Fire		\$ 41	\$ 12		\$ 3	\$ 1
Police - Members and City						
Experience Gain	6/30/2014	\$ (8)	\$ (20)	15.0	\$ (1)	\$ (2)
Assumption Change	6/30/2014	(4)	(0)	19.0	(0)	(0)
Experience Gain	6/30/2015	31	(11)	16.0	3	(1)
Assumption Change	6/30/2015	(16)	(2)	20.0	(1)	(0)
Total Tier 2 Police		\$ 3	\$ (33)		\$ 0	\$ (3)

Dollar amounts in thousands

The chart below shows the projected aggregate balance of the UAL based on the market 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
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION V - CONTRIBUTIONS

In addition to the UAL payments shown above, Tier 1 members pay 3/11ths of the EA 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. Table V-4 below shows the contribution rates for the 2016-17 fiscal year for members and the City by Tier split between Police and Fire groups.

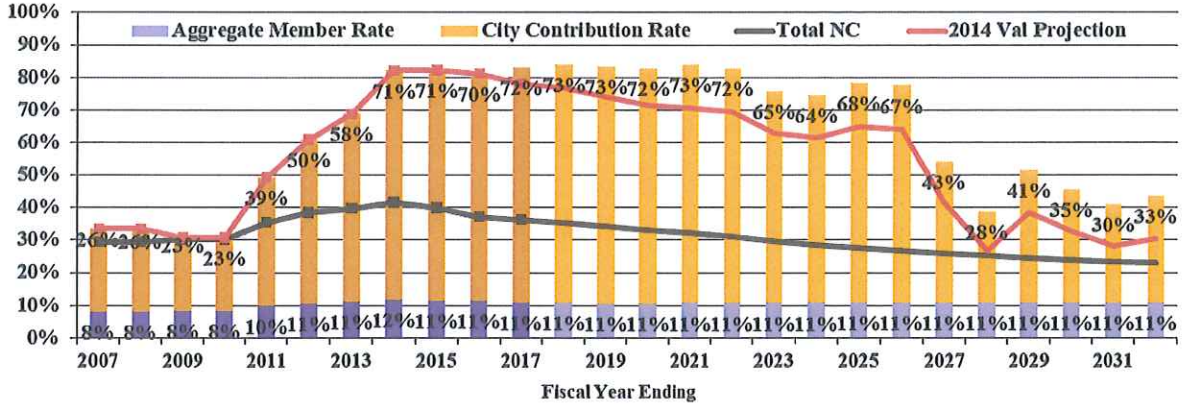
Table V-4 Fiscal Year 2016-17 Contribution Rates						
	Fire			Police		
	Retirement	COLA	Total	Retirement	COLA	Total
Tier 1 - Members						
Normal Cost	7.55%	3.40%	10.95%	7.20%	3.23%	10.43%
UAL	<u>-0.23%</u>	<u>0.35%</u>	<u>0.12%</u>	<u>-0.21%</u>	<u>0.37%</u>	<u>0.16%</u>
Total	7.32%	3.75%	11.07%	6.99%	3.60%	10.59%
Tier 1 - City						
Normal Cost	20.95%	9.38%	30.33%	20.42%	9.06%	29.48%
UAL	<u>19.71%</u>	<u>31.57%</u>	<u>51.28%</u>	<u>19.43%</u>	<u>31.49%</u>	<u>50.92%</u>
Total	40.66%	40.95%	81.61%	39.85%	40.55%	80.40%
Tier 2 - Members						
Normal Cost	9.04%	1.52%	10.56%	9.40%	1.58%	10.98%
UAL	<u>0.04%</u>	<u>0.01%</u>	<u>0.05%</u>	<u>0.00%</u>	<u>-0.01%</u>	<u>-0.01%</u>
Total	9.08%	1.53%	10.61%	9.40%	1.57%	10.97%
Tier 2 - City						
Normal Cost	9.04%	1.52%	10.56%	9.40%	1.58%	10.98%
UAL	<u>0.04%</u>	<u>0.01%</u>	<u>0.05%</u>	<u>0.00%</u>	<u>-0.01%</u>	<u>-0.01%</u>
Total	9.08%	1.53%	10.61%	9.40%	1.57%	10.97%

The chart on the next page 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 chart in the dashboard shows potential variations from these projections for stochastically generated investment returns. The black line shows the weighted average normal cost rate. All contribution rates above this rate represent payments toward the UAL. The red line represents the projection from the prior valuation.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
 JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION V - CONTRIBUTIONS

Historical and Projected Aggregate Contribution Rates



The normal cost rate is projected to decline as Tier 1 members terminate employment or retire and are replaced by Tier 2 members who have a significantly lower normal cost rate. Since the last valuation, the investment losses and the assumption changes have increased projected City contribution rates. There is a significant decrease in City contribution rates projected between FYE 2026 and FYE 2028 due to the completion of payments on the amortization schedules for the 2009 and 2010 assumption changes and experience losses.

Table V-5 on the following page shows the estimated dollar amounts of the City’s contributions assuming contributions are made at the beginning of the fiscal year. To the extent the City’s contributions are made after the beginning of the fiscal year, the amounts should be increased at the assumed valuation interest rate (7.0% for 2016-17).



CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION V - CONTRIBUTIONS

Table V-5						
Fiscal Year 2015-16 Estimated City Contribution Amounts						
Beginning of Year						
	Fire			Police		
	Retirement	COLA	Total	Retirement	COLA	Total
Tier 1						
Normal Cost	\$ 14,653	\$ 6,563	\$ 21,216	\$ 18,753	\$ 8,311	\$ 27,064
UAL	<u>13,783</u>	<u>22,081</u>	<u>35,864</u>	<u>17,840</u>	<u>28,915</u>	<u>46,755</u>
Total	\$ 28,436	\$ 28,644	\$ 57,080	\$ 36,593	\$ 37,226	\$ 73,819
Tier 2						
Normal Cost	\$ 440	\$ 74	\$ 514	\$ 1,670	\$ 281	\$ 281
UAL	<u>2</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>(2)</u>	<u>(2)</u>
Total	\$ 442	\$ 74	\$ 516	\$ 1,670	\$ 279	\$ 279
Total						
Normal Cost	\$ 15,093	\$ 6,637	\$ 21,730	\$ 20,423	\$ 8,591	\$ 27,344
UAL	<u>13,785</u>	<u>22,082</u>	<u>35,866</u>	<u>17,840</u>	<u>28,914</u>	<u>46,753</u>
Total	\$ 28,878	\$ 28,718	\$ 57,596	\$ 38,263	\$ 37,505	\$ 74,098

Dollar amounts in thousands

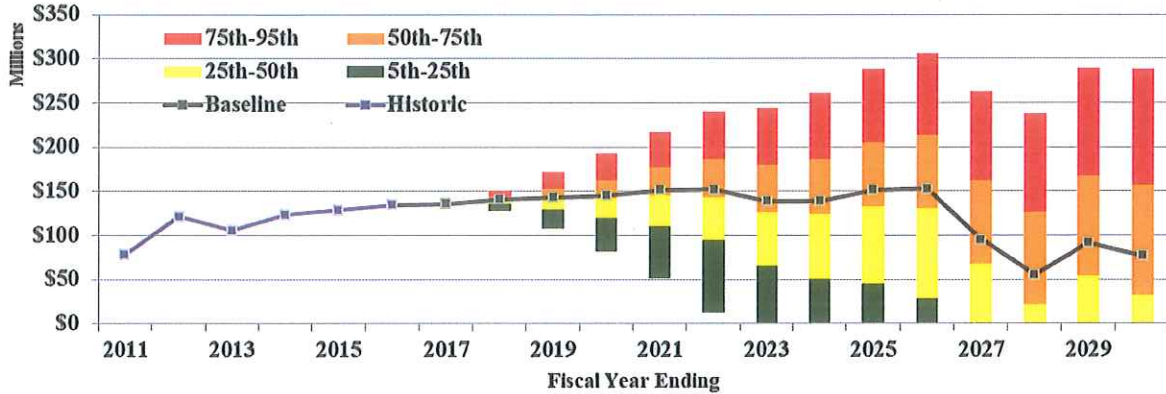
If experience has taught us anything, it is that there is a significant level of uncertainty in projections of the future. The largest source of uncertainty is the projection of investment returns. In order to better understand the potential impact of investment returns on the Plan, we have included some stochastic projections in the dashboard and in this section of the report. The stochastic projections are based on NEPC's long-term capital market assumptions for the Plan's investment portfolio, including a 7.7% geometric return and a 12.8% 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 black line represents the projected amounts if all valuation assumptions are met, including a 7.00% investment return each and every year. The colored bars represent different percentile ranges of the 10,000 projections. For example, the red range represents the 75th through 95th percentile of the City contribution amount for each year in the 10,000 trials. Based on the assumed distribution of investment returns, there is a 5% chance the result will be worse than the red range and a 5% chance that the result will be better than the green range.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
 JUNE 30, 2015 ACTUARIAL VALUATION REPORT

SECTION V - CONTRIBUTIONS

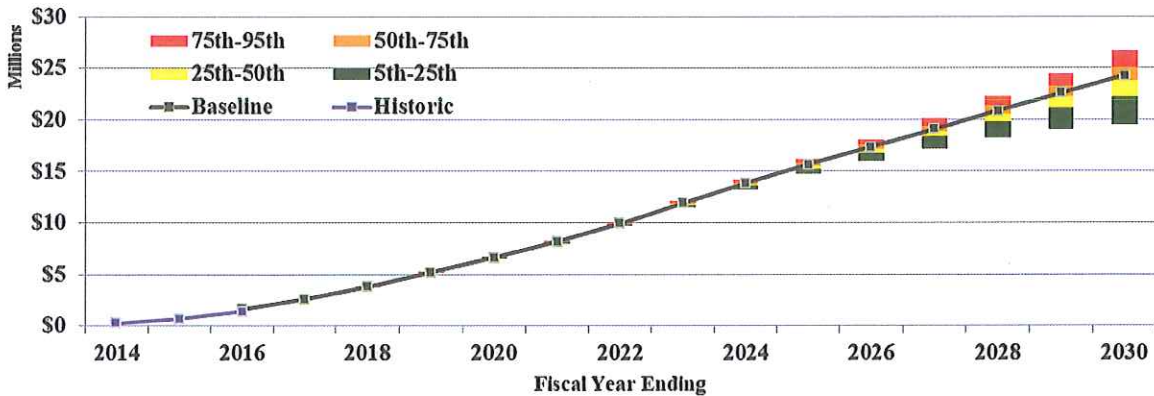
Historical and Stochastically Projected Tier 1 City Contribution Amounts



The chart shows a very wide range of potential City contribution amounts depending on actual investment returns. The range between the 5th and 95th percentile for FYE 2022 (based on the 2020 actuarial valuation) is from a contribution of \$12 million to a contribution of \$240 million. This range is largely driven by the standard deviation of the investment portfolio.

The chart below 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.

Historical and Stochastically Projected Tier 2 City Contribution Amounts



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION VI - 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 VI-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
6/30/2015	\$ 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%
6/30/2009	2,569,569	2,963,482	393,913	86.7%	255,223	154.3%
6/30/2007	2,365,790	2,372,386	6,596	99.7%	227,734	2.9%
6/30/2005	1,983,090	2,027,432	44,342	97.8%	210,018	21.1%

Amounts prior to June 30, 2011 calculated by prior actuary

Dollar amounts in thousands

The Government Finance Officers Association has named the exhibit on the next page, the Solvency Test. It should be noted, however, that it doesn’t test the solvency of the plan in the sense understood by financial economists that a 100 percent ratio would mean that there were sufficient assets to settle the obligation on the valuation date. Instead, a 100 percent ratio only means that assets are expected to be sufficient if all assumptions are met in the future, including the expected rate of return on investments.

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

SECTION VI - ACTUARIAL SECTION OF THE CAFR

Table VI-2 Solvency Test							
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)
6/30/2015	\$ 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%
6/30/2009	243,302	1,630,914	1,089,266	2,569,569	100%	100%	64%
6/30/2007	227,191	1,240,126	905,069	2,365,790	100%	100%	99%
6/30/2005	194,008	1,062,247	771,177	1,983,090	100%	100%	94%

Amounts prior to June 30, 2011 calculated by prior actuary

Dollar amounts in thousands

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

Table VI-3 Analysis of Financial Experience						
Actuarial Valuation Date	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	
6/30/2015	\$ 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)	
6/30/2009	(138,383)	(113,495)	(251,878)	(145,351)	(397,229)	
6/30/2007	97,135	47,735	144,870	(93,343)	51,527	
6/30/2005	(136,013)	101,668	(34,345)	(12,960)	(47,305)	

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, 2015 ACTUARIAL VALUATION REPORT**

APPENDIX A - MEMBERSHIP INFORMATION

Table A-1 City of San José Police and Fire Department Retirement Plan Active Member Data						
	June 30, 2015			June 30, 2014		% Change
	Tier 1	Tier 2	Total	Total		
Total						
Count	1,468	109	1,577	1,654		-4.7%
Average Current Age	43.1	29.5	42.2	42.0		0.5%
Average Vesting Service	15.1	1.4	14.2	14.1		0.7%
Expected Pensionable Earnings						
Total	\$ 175,598,927	\$ 9,134,136	\$ 184,733,063	\$ 188,188,712		-1.8%
Average	\$ 119,618	\$ 83,799	\$ 117,142	\$ 113,778		3.0%

As of June 30, 2014, there are no Tier 2 Fire members. For determining the Fire Tier 2 normal cost, a hypothetical data set was used based on Fire members hired within the last 10 years (Count = 266 and average age at hire = 30.0).

Table A-2 City of San José Police and Fire Department Retirement Plan Non-Active Member Data						
	Count			Average Age		
	June 30, 2015	June 30, 2014	%Change	June 30, 2015	June 30, 2014	%Change
Total						
Retired & Disabled	1,827	1,757	4.0%	65.4	65.2	0.3%
Beneficiaries	281	275	2.2%	66.5	65.2	2.0%
Payee Total	2,108	2,032	3.7%	65.5	65.2	0.5%
Deferred Vesteds	298	282	5.7%	40.4	40.4	0.0%

Table A-3 City of San José Police and Fire Department Retirement Plan Non-Active Member Data						
	Total Annual Benefit*			Average Annual Benefit*		
	June 30, 2015	June 30, 2014	%Change	June 30, 2015	June 30, 2014	%Change
Total						
Retired & Disabled	\$ 171,194,802	\$ 160,681,838	6.5%	\$ 93,703	\$ 91,452	2.5%
Beneficiaries	10,990,283	10,189,737	7.9%	39,111	37,054	5.6%
Payee Total	\$ 182,185,085	\$ 170,871,575	6.6%	\$ 86,426	\$ 84,090	2.8%
Deferred Vesteds**	\$ 3,608,869	\$ 3,268,472	10.4%	\$ 12,110	\$ 11,590	4.5%

* Benefits provided in June 30 valuation data.

** For Deferred Vesteds, benefit is calculated based on the data, assumptions and methods outlined in Appendix B.

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

APPENDIX A - MEMBERSHIP INFORMATION

Table A-4

**City of San José Police and Fire Department Retirement Plan
Distribution of Active Members as of June 30, 2015**

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	6	2	-	-	-	-	-	-	8
25 to 29	33	60	4	-	-	-	-	-	97
30 to 34	13	63	101	1	-	-	-	-	178
35 to 39	9	44	109	80	15	-	-	-	257
40 to 44	2	10	62	92	165	10	-	-	341
45 to 49	-	4	27	45	209	147	14	-	446
50 to 54	1	1	4	16	63	105	30	-	220
55 to 59	-	-	-	2	12	8	5	-	27
60 to 64	-	-	-	-	2	-	1	-	3
65 to 69	-	-	-	-	-	-	-	-	-
70 and up	-	-	-	-	-	-	-	-	-
Total Count	64	184	307	236	466	270	50	-	1,577

Table A-5

**City of San José Police and Fire Department Retirement Plan
Distribution of Active Members as of June 30, 2015**

Age	Average Expected Salary 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	\$ 81,111	\$ 100,683	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 86,004
25 to 29	82,744	95,765	108,954	-	-	-	-	-	91,879
30 to 34	81,395	109,372	115,911	128,470	-	-	-	-	111,146
35 to 39	85,464	113,251	114,757	120,991	121,303	-	-	-	115,796
40 to 44	144,016	108,184	113,771	116,877	124,054	131,491	-	-	120,118
45 to 49	-	117,111	115,286	117,787	122,764	130,204	143,091	-	124,849
50 to 54	83,253	180,975	115,234	115,557	121,073	129,823	145,535	-	128,178
55 to 59	-	-	-	110,442	119,051	124,064	136,585	-	123,146
60 to 64	-	-	-	-	117,101	-	133,787	-	122,663
65 to 69	-	-	-	-	-	-	-	-	-
70 and up	-	-	-	-	-	-	-	-	-
Avg. Salary	\$ 84,622	\$ 106,261	\$ 114,915	\$ 118,350	\$ 122,826	\$ 129,922	\$ 143,721	\$ -	\$ 119,010

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

APPENDIX A - MEMBERSHIP INFORMATION

Table A-6

**City of San José Police and Fire Department Retirement Plan
Retirees and Disabled by Attained Age and Benefit Effective Date
As of June 30, 2015**

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-1995	-	3	6	6	20	66	126	68	42	9	346
PYE 1995	-	-	1	1	4	37	16	2	-	-	61
PYE 1996	-	1	1	-	4	20	16	1	-	-	43
PYE 1997	-	1	-	2	14	34	9	3	-	-	63
PYE 1998	-	1	-	2	30	26	9	-	-	-	68
PYE 1999	-	-	-	2	19	29	5	-	-	-	55
PYE 2000	-	-	1	1	23	19	3	1	-	-	48
PYE 2001	-	1	3	4	31	13	2	1	-	-	55
PYE 2002	-	2	1	6	27	13	-	-	-	-	49
PYE 2003	1	3	1	15	43	11	1	-	-	-	75
PYE 2004	-	-	1	17	20	8	-	-	-	-	46
PYE 2005	1	2	1	33	31	7	1	-	-	-	76
PYE 2006	-	-	1	18	13	5	-	-	-	-	37
PYE 2007	2	1	10	34	16	2	-	-	-	-	65
PYE 2008	4	-	13	29	15	1	-	-	-	-	62
PYE 2009	1	4	40	68	38	2	1	-	-	-	154
PYE 2010	2	1	77	46	11	-	-	-	-	-	137
PYE 2011	6	17	65	23	2	-	1	-	-	-	114
PYE 2012	8	26	27	7	2	-	-	-	-	-	70
PYE 2013	11	27	12	4	1	-	-	-	-	-	55
PYE 2014	9	27	17	1	-	-	-	-	-	-	54
PYE 2015	11	57	22	3	1	-	-	-	-	-	94
Total	56	174	300	322	365	293	190	76	42	9	1,827

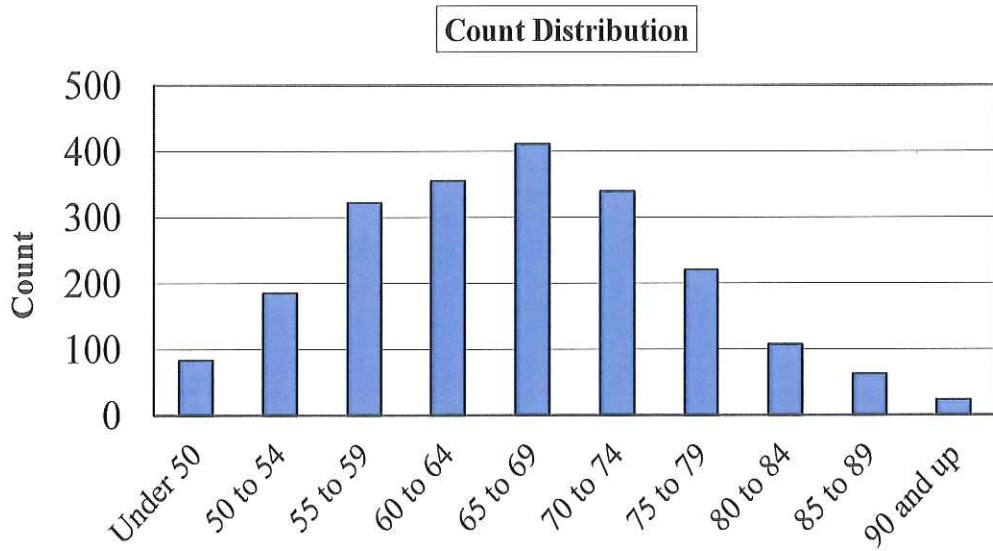
Average Age at Retirement/Disability 52.5
Average Current Age 65.4
Average Annual Pension \$ 93,703

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
 JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX A - MEMBERSHIP INFORMATION

Table A-7 City of San José Police and Fire Department Retirement Plan Distribution of Retirees, Disabled Members, and Beneficiaries as of June 30, 2015	
Age	Count
Under 50	83
50 to 54	185
55 to 59	322
60 to 64	355
65 to 69	411
70 to 74	339
75 to 79	220
80 to 84	107
85 to 89	62
90 and up	<u>23</u>
Total	2,107

Chart A-1

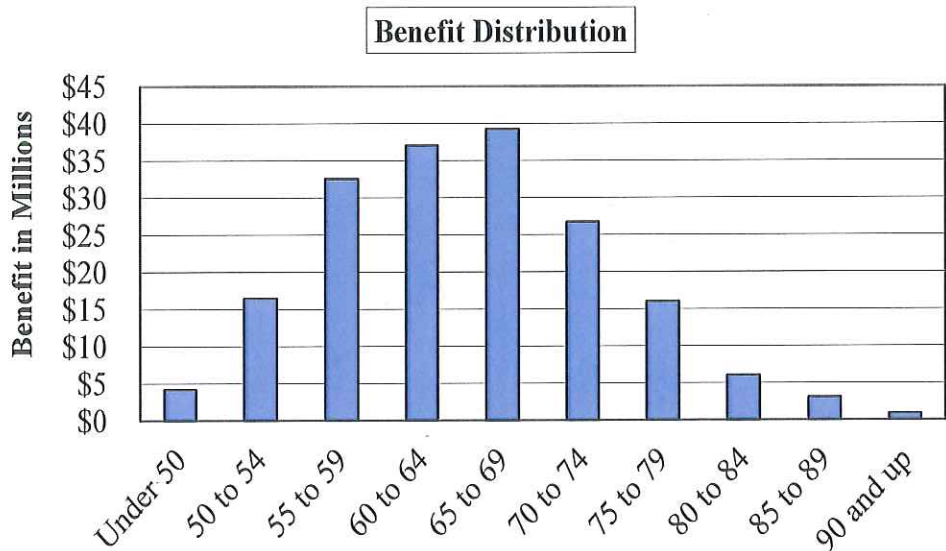


CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
 JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX A - MEMBERSHIP INFORMATION

Table A-8 City of San José Police and Fire Department Retirement Plan Distribution of Retirees, Disabled Members, and Beneficiaries as of June 30, 2015	
Age	Annual Benefit
Under 50	\$ 4,204,521
50 to 54	16,457,493
55 to 59	32,545,113
60 to 64	37,038,639
65 to 69	39,233,195
70 to 74	26,701,761
75 to 79	16,013,576
80 to 84	6,042,371
85 to 89	3,095,110
90 and up	853,307
Total	\$ 182,185,085

Chart A-2



**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

APPENDIX A - MEMBERSHIP INFORMATION

Table A-9						
City of San José Police and Fire Department Retirement Plan						
Change in Plan Membership						
	Actives	Deferred		Disabilities	Beneficiaries	Total
		Vesteds	Retirees			
June 30, 2014	1,654	282	880	877	275	3,968
New Entrants	59	0	0	0	0	59
Rehires	7	(1)	0	0	0	6
Vested Deferrals	(43)	43	0	0	0	0
Return of Contributions	(12)	(5)	0	0	0	(17)
Disabilities	(24)	0	(25)	49	0	0
Retirements	(62)	(7)	69	0	0	0
Deaths	(2)	0	(13)	(11)	20	(6)
Beneficiary Deaths	0	0	0	0	(5)	(5)
Miscellaneous Adjustments	0	(14)	1	0	(9)	(22)
June 30, 2015	1,577	298	912	915	281	3,983

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

The discount rate and wage inflation assumptions shown below were adopted by the Board of Administration with our input at the December 4, 2014 Board meeting. All other assumptions were adopted at the December 3, 2015 Board meeting based on recommendations from our experience study covering plan experience during the period from July 1, 2009 through June 30, 2015. Please refer to the experience study for the rationale for each of the assumptions.

1. Discount Rate

7.00% net of investment expenses. The long-term expected return on assets based on NEPC's capital market assumptions for a 30-year time horizon is 7.7%. The Board applied a margin for adverse deviation to improve the probability of achieving the discount rate.

2. Wage Inflation

3.25% per annum.

3. Price Inflation

3.00% per annum.

4. Salary Increase Rate

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

Table B-1	
Salary Merit Increases	
Years of Service	Merit/ Longevity
0	6.75%
1	6.00
2	5.25
3	4.50
4	3.75
5	3.25
6	2.75
7	2.25
8	1.75
9	1.25
10+	1.00

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

5. Family Composition

Percentage married is shown in the following Table B-2. Women are assumed to be three years younger than men.

Table B-2 Percentage Married	
Gender	Percentage
Males	85%
Females	85%

6. Rates of Termination

Sample rates of termination are shown in the following Table B-3.

Table B-3 Rates of Termination		
Service	Police	Fire
0	13.75%	20.00%
1	11.75	20.00
2	9.85	3.50
3	8.35	2.00
4	7.00	1.30
5	5.75	1.10
6	4.60	1.00
7	3.80	0.90
8	3.10	0.80
9	2.65	0.70
10	2.20	0.60
11	2.00	0.50
12	1.85	0.50
13	1.70	0.50
14	1.65	0.50
15+	1.60	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

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

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-4.

Age	Police	Fire
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 on the next page. Future mortality improvements are reflected by applying the SOA MP-2015 projection scale on a generational basis from the base year of 2009.

Category	Base Mortality Tables	
	Male	Female
Healthy Annuitant	0.948 times the CalPERS 2009 Healthy Annuitant Mortality Table (Male), projected using Scale MP-2015 on a generational basis	1.048 times the CalPERS 2009 Healthy Annuitant Mortality Table (Female), projected using Scale MP-2015 on a generational basis
Healthy Non-Annuitant	0.948 times the CalPERS 2009 Employee Mortality Table (Male), projected using Scale MP-2015 on a generational basis	1.048 times the CalPERS 2009 Employee Mortality Table (Female), projected using Scale MP-2015 on a generational basis
Disabled Annuitant	0.903 times the CalPERS 2009 Industrial Disability Mortality Table (Male), projected using Scale MP-2015 on a generational basis	0.903 times the CalPERS 2009 Industrial Disability Mortality Table (Male), projected using Scale MP-2015 on a generational basis

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

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

9. Rates of Retirement

Rates of retirement are based on age and service according to the following Table B-5.

Table B-5 Rates of Retirement by Age						
Age	Police			Fire		
	Tier 1	Tier 2 <30 Years	Tier 2 30+ Years	Tier 1	Tier 2 <30 Years	Tier 2 30+ Years
50	60.00%	0.00%	0.00%	35.00%	0.00%	0.00%
51 - 55	50.00	0.00	0.00	35.00	0.00	0.00
56 - 59	40.00	0.00	0.00	27.50	0.00	0.00
60 - 61	50.00	50.00	100.00	27.50	25.00	50.00
62 - 64	100.00	50.00	100.00	100.00	25.00	50.00
65 - 69	100.00	50.00	100.00	100.00	35.00	100.00
70+	100.00	100.00	100.00	100.00	100.00	100.00

These retirement rates apply only to those eligible for unreduced benefits.

Tier 1 vested terminated members are assumed to retire at age 55 and Tier 2 vested terminated members are assumed to retire at age 60.

10. Administrative Expenses

1.90% of valuation payroll is added to normal cost. The administrative expenses are assumed to increase with wage inflation. 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 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.

11. Changes Since Last Valuation

The following assumptions were changed as a result of the demographic experience study.

- Base mortality tables were updated and generational improvements in mortality were applied using projection scale MP-2015.
- Merit salary scale was decreased across all years of service.
- Tier 1 retirement rates were generally increased across the board.
- Termination rates were increased across the board for Police members. For Fire members, there were large increases for the first two years of service.
- Disability rates were changed.
- The administrative expense assumption was increased from 1.80% of payroll to 1.90% of payroll.

**CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

Please refer to the experience study report for more detail, including the rationale for each assumption change.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

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 (7.00% for 2014-15, 7.125% for 2013-14, 7.25% for 2012-13, and 7.50% for 2011-12) 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 as a level percentage of pay assuming 3.25% annual growth in payroll over a 16-year period beginning with the valuation date in which they first arise. Changes in methods and assumptions are amortized as a level percentage of pay assuming 3.25% annual growth in payroll over a 20-year period (16 years for changes prior to June 30, 2011) beginning with the valuation date on which they are effective.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

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.

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.

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.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX C - SUMMARY OF PLAN PROVISIONS
TIER 1

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.

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.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX C - SUMMARY OF PLAN PROVISIONS
TIER 1

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 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.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX C - SUMMARY OF PLAN PROVISIONS
TIER 1

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%.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX C - SUMMARY OF PLAN PROVISIONS
TIER 2

1. Membership Requirement

Any police officer who is hired, rehired or reinstated by the City on or after August 4, 2013, or any fire fighter who is hired, rehired or reinstated by the City on or after January 2, 2015.

2. Final Compensation

The average annual compensation earnable during the highest three consecutive years of service. Final compensation only includes base pay, excluding premium pay and any other additional compensation.

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.

5. Unreduced Service Retirement

Eligibility

Age 60 with ten years of service.

Benefit – Member

2.0% of Final Compensation for each year of credited service attributable to Tier 2 plus the applicable Tier 1 multiplier for each year of credited service attributable to Tier 1, subject to a maximum of 65% of Final Compensation.

Benefit - Survivor

Single life annuity.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX C - SUMMARY OF PLAN PROVISIONS
TIER 2

6. Early Service Retirement

Eligibility

Age 50 with ten years of service.

Benefit - Member

Reduced benefit actuarially equivalent to the unreduced service retirement benefits commencing at age 60. The early retirement reduction is applied to the benefit after the application of the maximum of 65% of final compensation.

7. Service-Connected Disability Retirement

Eligibility

No age or service requirement.

Benefit - Member

Monthly benefit equivalent to 50% of Final Compensation.

8. Non-Service Connected Disability Retirement

Eligibility

Five years of service.

Benefit - Member

2.0% of Final Compensation for each year of credited service attributable to Tier 2 plus the applicable Tier 1 multiplier for each year of credited service attributable to Tier 1, subject to a minimum of 20% of Final Compensation and a maximum of 50% of Final Compensation.

9. Death Before Retirement

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

Monthly benefit equal to the greater of:

- 10% of Final Compensation or
- 2% of Final Compensation for each year of service up to a maximum of 30% of Final Compensation

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

APPENDIX C - SUMMARY OF PLAN PROVISIONS
TIER 2

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:

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

10. Withdrawal Benefits

Less than ten Years of Service

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

Ten 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

Annuity benefits are paid in the form of a life annuity or an actuarially equivalent annuity with 50%, 75% or 100% continuance to a survivor.

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 1.5%. The first COLA after retirement shall be prorated based on the number of months retired.

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
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

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.

CITY OF SAN JOSÉ POLICE AND FIRE DEPARTMENT RETIREMENT PLAN
JUNE 30, 2015 ACTUARIAL VALUATION REPORT

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.