City of Sausalito

BARTEL ASSOCIATES, LLC

CalPERS Actuarial Issues
June 30, 2009 Valuation

January 2011

CITY OF SAUSALITO
CALPERS ACTUARIAL ISSUES – JUNE 30, 2009 VALUATION
INTRODUCTION

The City of Sausalito retained Bartel Associates to provide actuarial consulting services. The following Executive Summary provides the City analysis of their CalPERS Miscellaneous and Safety pension plans. This analysis is designed to assist the City in evaluating their current funding situation.

It may be helpful to first review the summary of basic definitions starting on page 23.

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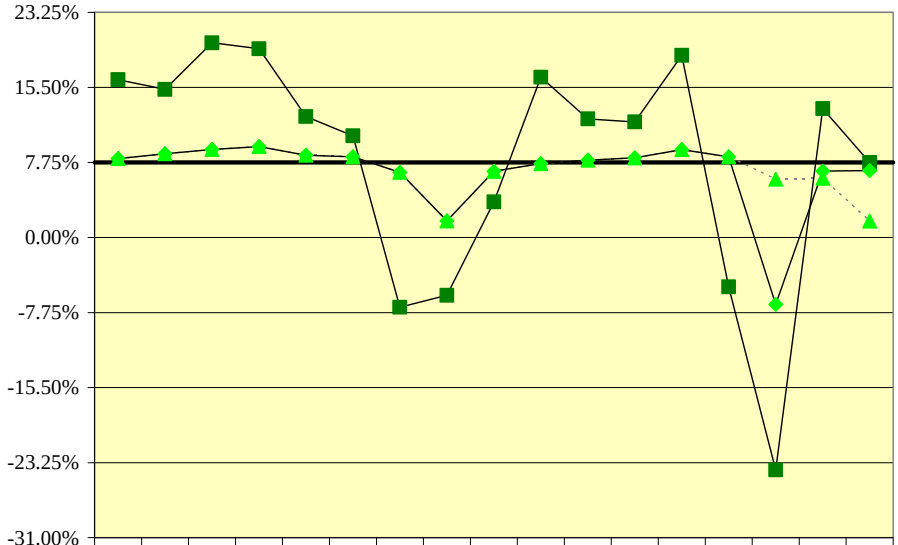
Study Highlights

- CalPERS investment losses during 2008/09 will significantly increase pension contributions. However, due to rate smoothing and subsequent modifications, these higher contribution rates will not materialize for several years.
- When considering a second tier benefit level, several things are important to understand that cost savings are:
  1. Limited to Normal Cost difference between the old and new tier and
  2. Very modest until the second tier payroll becomes dominant, and, even then will not solve very many budget problems.

  There are reasons to consider a second pension tier, such as implementing a more appropriate benefit level, or encouraging longer City service. However there are very minor short term financial benefits.
- The City can realize significant savings by paying off its "Side Fund" balances for each plan (Miscellaneous, Fire Safety & Police Safety) early because balances are charge 7.75%. For example the Police Safety Plan's $3.0 million June 30, 2011 Side Fund balance, if paid off at June 30, results in a $1.8 million cash savings. If the cash savings is discounted at 4%, then savings becomes $0.8 million. The Miscellaneous and Fire Safety Plans have similar (although smaller in magnitude) results.

CalPERS Historical Investment Return

The following chart illustrates CalPERS market and actuarial value investment returns over the past several years:



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
AVA Modified	8.2%	8.7%	9.1%	9.4%	8.5%	8.3%	6.7%	1.7%	6.8%	7.6%	8.0%	8.2%	9.1%	8.3%	6.0%	6.1%	1.7%
MVA Rate	16.3%	15.3%	20.1%	19.5%	12.5%	10.5%	-7.2%	-6.0%	3.7%	16.6%	12.3%	11.9%	18.8%	-5.1%	-24.0	13.3%	7.8%
AVA Unmodified	8.2%	8.7%	9.1%	9.4%	8.5%	8.3%	6.7%	1.7%	6.8%	7.6%	8.0%	8.2%	9.1%	8.3%	-6.9%	6.9%	6.9%

The 2010 return shown was reported by CalPERS press release. The 2011 return is assumed to be 7.75%. CalPERS' 10 year average annual return (from July 1, 2001 through June 30, 2010) is 3.4%, while their 20 year average annual return (from July 1, 1991 through June 30, 2010) is 7.8%.

The chart shows three lines, AVA Modified (Actuarial Value of Assets with CalPERS recent smoothing modification), MVA (Market Value of Assets) Rate and AVA Unmodified (Actuarial Value of Assets based on CalPERS smoothing method prior to recent asset smoothing modification). The MVA Rate is the investment return CalPERS' assets actually earned during the respective fiscal year ends, while the AVA shows the investment return as a smoothed rate reflecting asset gains and losses over a period of time, rather than immediately. The actuarial value of asset investment return directly affects City contribution rates.

The chart indicates a -24.0% June 30, 2009 year end investment return. This compares to an expected return of +7.75%, for a net loss of 31.8%. This loss would have had a significant impact on the City's 2011/12 Miscellaneous and Safety contribution rates. However, CalPERS smoothes asset gains and losses using a technique that generally recognizes one fifteenth of market asset gains or losses in a given year. In addition, the smoothing method does not allow the smoothed (actuarial) value to be less than 80% or more than 120% of the

market value (the 80-120% corridor). To mitigate the economic impact of the June 30, 2009 market decline, on June 13, 2009, CalPERS' Board approved a modification to the corridor, increasing it to 140% for the June 30, 2009 valuation and to 130% for June 30, 2010 valuation. The corridor will return to 120% for the June 30, 2011 and subsequent valuations. Complicating matters a bit is that each CalPERS valuation determines agency contribution rates two years later (for example, the June 30, 2009 valuation determines fiscal year 2011/12 contribution rates.)

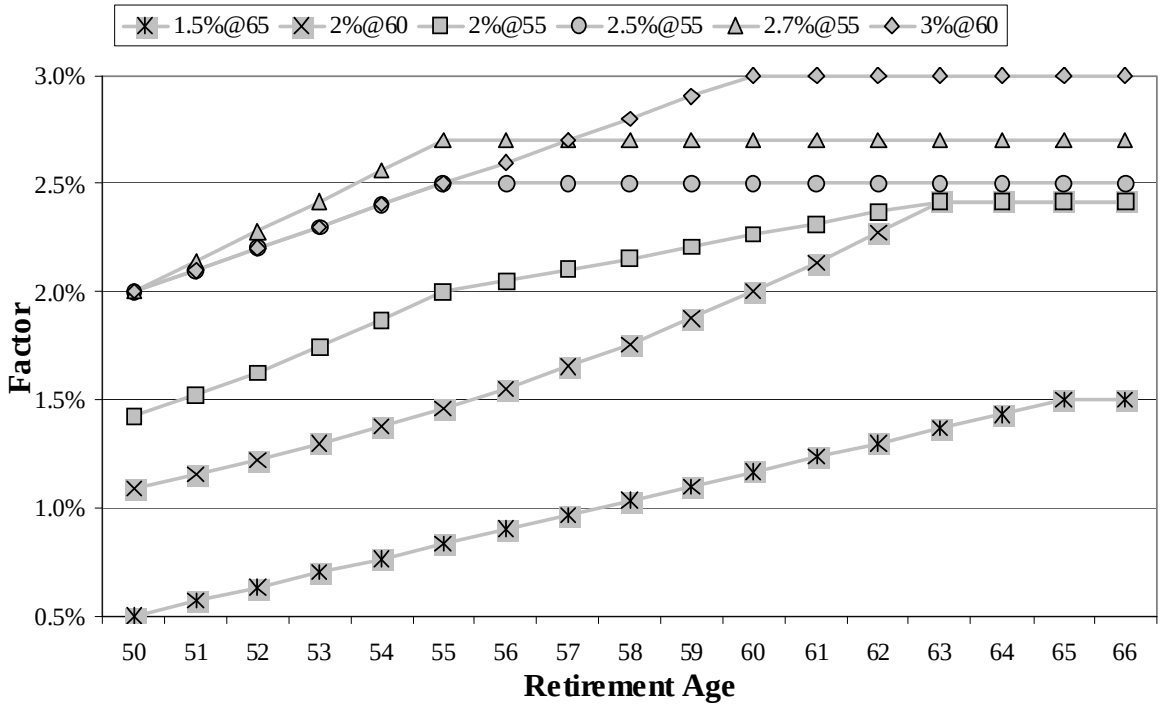
Implication of a Second Benefit Tier

For purposes of this report we have assumed employees hired on and after July 1, 2011 would be placed into a second tier (Tier 2) providing lower pension benefits. For current employees (Tier 1), benefits would remain the same. Contribution calculations would be then calculated on benefits depending on which tier they belong. However, it is important to note that moving new employees into a different benefit level has no impact on existing unfunded liabilities; it only impacts the level of benefit future employees would earn. This means that the amortization of any unfunded liability component of the contribution rate would remain the same for Tier 2 as it is for Tier 1, but the Normal Cost component of the contribution rate would be lower. As Tier 2 grows, and Tier 1 is closed, the cost for Tier 1 will decrease (as a dollar amount) and the replacement cost of the new Tier 2 participants would be less than if they had been in the current Tier 1 plan. This results in deceasing City contribution as a percent of payroll.

The following two pages show the CalPERS benefit factor comparison for Miscellaneous and Safety Plans.

Miscellaneous Plans

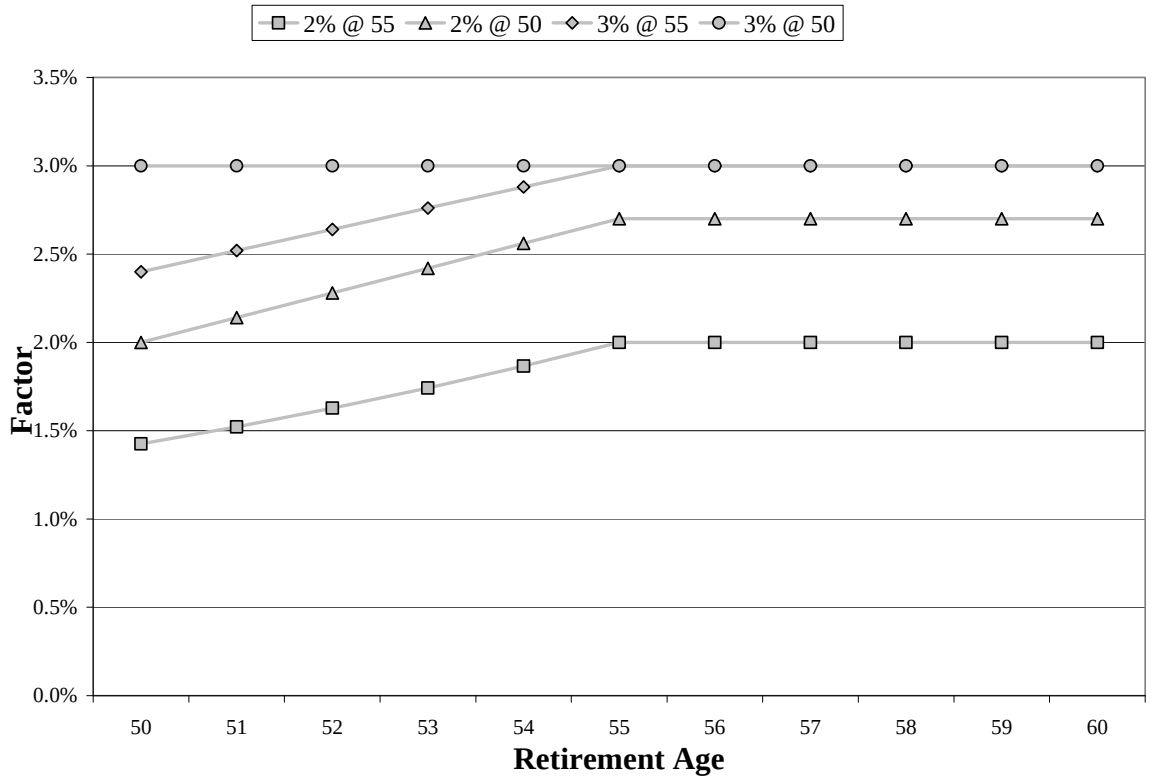
Benefit Factor Comparison



Age	1.5%@65	2%@60	2%@55	2.5%@55	2.7%@55	3%@60
50	0.500%	1.092%	1.426%	2.000%	2.000%	2.000%
51	0.567%	1.156%	1.522%	2.100%	2.140%	2.100%
52	0.633%	1.224%	1.628%	2.200%	2.280%	2.200%
53	0.700%	1.296%	1.742%	2.300%	2.420%	2.300%
54	0.767%	1.376%	1.866%	2.400%	2.560%	2.400%
55	0.833%	1.460%	2.000%	2.500%	2.700%	2.500%
56	0.900%	1.552%	2.052%	2.500%	2.700%	2.600%
57	0.967%	1.650%	2.104%	2.500%	2.700%	2.700%
58	1.033%	1.758%	2.156%	2.500%	2.700%	2.800%
59	1.100%	1.874%	2.210%	2.500%	2.700%	2.900%
60	1.167%	2.000%	2.262%	2.500%	2.700%	3.000%
61	1.233%	2.134%	2.314%	2.500%	2.700%	3.000%
62	1.300%	2.272%	2.366%	2.500%	2.700%	3.000%
63	1.367%	2.418%	2.418%	2.500%	2.700%	3.000%
64	1.433%	2.418%	2.418%	2.500%	2.700%	3.000%
65	1.500%	2.418%	2.418%	2.500%	2.700%	3.000%
	Member Contribution Rate					
	2%	7%	7%	8%	8%	8%

Safety Plans

Benefit Factor Comparison



Age	2% @ 55	2% @ 50	3% @ 55	3% @ 50
50	1.426%	2.00%	2.40%	3.00%
51	1.522%	2.14%	2.52%	3.00%
52	1.628%	2.28%	2.64%	3.00%
53	1.742%	2.42%	2.76%	3.00%
54	1.866%	2.56%	2.88%	3.00%
55	2.00%	2.70%	3.00%	3.00%
56	2.00%	2.70%	3.00%	3.00%
57	2.00%	2.70%	3.00%	3.00%
58	2.00%	2.70%	3.00%	3.00%
59	2.00%	2.70%	3.00%	3.00%
60	2.00%	2.70%	3.00%	3.00%
		Member Contribution Rate		
	8%	9%	9%	9%

The City's current benefit formula and 2011/12 contribution rates are:

	Miscellaneous	Police Safety	Fire Safety
● Benefit Formula	2.5% @ 55	3% @ 55	3% @ 55
● FAE	One Year (FAE1)	One Year (FAE1)	One Year (FAE1)
● PRSA	Yes	Yes	Yes
● COLA	2%	2%	2%
● EPMC	No	No	9%, by Resolution
● 11/12 ER Contribution			
➢ Normal Cost	8.7%	15.7%	15.7%
➢ Class 1 Ben.	1.5	2.7	2.7
➢ Pool Amort.	4.0	4.6	4.6
➢ Side Fund	1.3	15.5	8.5
➢ Subtotal	15.6	38.5	31.5
● EPMC	0.0	0.0	9.0
● PERS on PERS			
➢ Normal Cost	0.0	0.0	1.7
➢ Pool Amort.	0.0	0.0	0.4
➢ Side Fund	0.0	0.0	0.8
➢ EPMC	0.0	0.0	0.8
➢ Subtotal	0.0	0.0	3.6
● Total	15.6	38.5	44.2

Miscellaneous Alternative Formulas

Miscellaneous alternative Tier 2 benefits could be 2%@55 and 2%@60, both with 1 year final average earnings (FAE1) and Pre Retirement Survivor Allowance (PRSA). Each of these produces a cost savings for the City. The table below shows the Tier 2 Employer rates and net savings for the reduced Tier 2 benefits.

Formula	Miscellaneous		
	Current	2%@55	2%@60
➢ Normal Cost	8.7%	7.7%	6.6%
➢ FAE1 & PRSA	1.5	1.3	1.2
➢ Pool Amortization	4.0	1.9	1.1
➢ Subtotal	14.2	10.9	8.9
➢ EPMC	0.0	0.0	0.0
➢ Rates on EPMC	0.0	0.0	0.0
➢ Total	14.2	10.9	8.9
➢ Savings from current formula	n/a	3.3%	5.3%

The following table below shows estimated cost savings (000s omitted) for the Miscellaneous Plan in dollar amounts. It is split between the two alternative benefit levels (2%@55 and 2%@60) for Tier 2 participants.

Estimated Savings – Miscellaneous

	2% @ 55 Savings			2% @ 60 Savings		
Year	Employer Contr.	Employee Contr.	Total	Employer Contr.	Employee Contr.	Total
2011/12	$ 7	$ -	$ 7	$ 12	$ -	$ 12
2012/13	15	-	15	23	-	23
2013/14	22	-	22	35	-	35
2014/15	30	-	30	48	-	48
2015/16	39	-	39	61	-	61
2016/17	47	-	47	75	-	75
2017/18	56	-	56	88	-	88
2018/19	65	-	65	103	-	103
2019/20	74	-	74	117	-	117
2020/21	84	-	84	132	-	132
2021/22	94	-	94	147	-	147

The above savings are based on the following Miscellaneous payroll projections shown separately for current (Tier 1) participants and future (Tier 2) participants (000s omitted):

Payroll Projections - Miscellaneous

	Tier 1		Tier 2		Total	
Year	Counts	Payroll	Counts	Payroll	Counts	Payroll
2011/12	45	$ 3,257	3	$ 216	48	$ 3,474
2012/13	42	3,157	6	429	48	3,586
2013/14	40	3,051	8	652	48	3,703
2014/15	37	2,932	11	891	48	3,823
2015/16	34	2,809	14	1,139	48	3,948
2016/17	32	2,678	16	1,397	48	4,076
2017/18	29	2,558	19	1,651	48	4,208
2018/19	27	2,419	21	1,926	48	4,345
2019/20	25	2,294	23	2,193	48	4,486
2020/21	22	2,163	26	2,469	48	4,632
2021/22	20	2,028	28	2,754	48	4,783

Total payroll is expected to grow annually at 3.25% each year. A slower payroll growth results in lower cost savings while a more rapid payroll growth results in greater cost savings.

Police Safety Alternative Formulas

Safety alternative Tier 2 benefits could be 2%@50 and 2% @55, both retaining FAE1 and PRSA. Each of these produces a cost savings for the City. The table below shows the Tier 2 Employer rates and net savings for the reduced Tier 2 benefits.

Formula	Police Safety		
	Current	2%@50	2%@55
➢ Normal Cost	15.7%	14.0%	13.1%
➢ FAE1 & PRSA	2.7	2.2	1.9
➢ Pool Amortization	4.6	5.2	2.1
➢ Subtotal	23.0	21.4	17.1
➢ EPMC	0.0	0.0	0.0
➢ PERS on PERS	0.0	0.0	0.0
➢ Total	23.0	21.4	17.1
➢ Savings from current formula	n/a	1.6%	5.9%

The following table below shows estimated cost savings (000s omitted) for the Police Safety Plan in dollar amounts. It is split between the two alternative benefit levels (2%@50 and 2%@55) for Tier 2 participants.

Estimated Savings – Police Safety

	2% @ 50 Savings			2% @ 55 Savings		
Year	Employer Contr.	Employee Contr.	Total	Employer Contr.	Employee Contr.	Total
2011/12	$ 1	$ -	$ 1	$ 5	$ -	$ 5
2012/13	3	-	3	10	-	10
2013/14	4	-	4	15	-	15
2014/15	6	-	6	21	-	21
2015/16	7	-	7	27	-	27
2016/17	9	-	9	34	-	34
2017/18	11	-	11	40	-	40
2018/19	13	-	13	47	-	47
2019/20	15	-	15	53	-	53
2020/21	17	-	17	61	-	61
2021/22	19	-	19	69	-	69

The above savings are based on the following Police Safety payroll projections shown separately for current (Tier 1) participants and future (Tier 2) participants (000s omitted):

Payroll Projections – Police Safety

Year	Tier 1		Tier 2		Total	
	Counts	Payroll	Counts	Payroll	Counts	Payroll
2011/12	17	$ 1,883	1	$ 77	18	$ 1,960
2012/13	16	1,854	2	170	18	2,024
2013/14	16	1,830	2	259	18	2,090
2014/15	15	1,800	3	358	18	2,158
2015/16	14	1,767	4	461	18	2,228
2016/17	14	1,731	4	569	18	2,300
2017/18	13	1,698	5	677	18	2,375
2018/19	12	1,662	6	790	18	2,452
2019/20	12	1,630	6	902	18	2,532
2020/21	11	1,588	7	1,026	18	2,614
2021/22	10	1,527	8	1,172	18	2,699

Total payroll is expected to grow annually at 3.25% each year. A slower payroll growth results in lower cost savings while a more rapid payroll growth results in greater cost savings.

Fire Safety Alternative Formulas

Safety alternative Tier 2 benefits could be 2%@50 and 2% @55, both retaining FAE1 and PRSA benefits. Each of these produces a cost savings for the City. Because the City currently pays 9% employee contribution (EPMC) for Fire Safety employees, the savings are also calculated if the Tier 2 employees pay the full employee contributions. The table below shows the Tier 2 Employer rates and net savings for the reduced Tier 2 benefits.

Fire Safety Alternative Formulas		Tier 1 & Tier 2 with EPMC		Tier 1 with EPMC, Tier 2 without EPMC	
	Current	2%@50	2%@55	2%@50	2%@55
➢ Normal Cost	15.7%	14.0%	13.1%	14.0%	13.1%
➢ FAE1 & PRSA	2.7	2.2	1.9	2.2	1.9
➢ Pool Amortization	4.6	5.2	2.1	5.2	2.1
➢ Subtotal	23.0	21.4	17.1	21.4	17.1
➢ EPMC	9.0	9.0	8.0	0.0	0.0
➢ PERS on PERS	2.9	2.7	2.0	0.0	0.0
➢ Total	34.9	33.1	27.1	21.4	17.1
➢ Savings from current	n/a	1.8%	7.8%	13.5%	17.8%

formula					

The following two tables below show estimated cost savings (000s omitted) for the Fire Safety Plan in dollar amounts. It is split between the four alternative benefit levels (2%@50 and 2%@55, with and without EPMC) for Tier 2 participants. The estimated cost savings are broken down into employer contribution savings and employee contribution savings (savings on EPMC).

Estimated Savings - Fire Safety Tier 1 & Tier 2 with EPMC

	2%@50 Savings			2%@55 Savings		
Year	**Employer Contr.**	**Employee Contr.**	**Total**	**Employer Contr.**	**Employee Contr.**	**Total**
2011/12	$ 1	$ -	$ 1	$ 3	$ 1	$ 4
2012/13	2	-	2	7	1	8
2013/14	3	-	3	11	2	13
2014/15	4	-	4	15	2	17
2015/16	5	-	5	20	3	23
2016/17	7	-	7	25	4	29
2017/18	8	-	8	29	4	33
2018/19	9	-	9	34	5	39
2019/20	11	-	11	39	6	45
2020/21	12	-	12	44	7	51
2021/22	14	-	14	51	8	59

Tier 1 with EPMC, Tier2 without EPMC

	2%@50 Savings			2%@55 Savings		
Year	**Employer Contr.**	**Employee Contri.**	**Total**	**Employer Contr.**	**Employee Contr.**	**Total**
2011/12	$ 2	$ 5	$ 7	$ 5	$ 4	$ 9
2012/13	5	10	15	11	9	20
2013/14	8	15	23	17	14	31
2014/15	11	21	32	23	19	42
2015/16	14	28	42	30	24	54
2016/17	17	34	51	37	30	67
2017/18	20	40	60	44	36	80
2018/19	24	47	71	51	42	93
2019/20	27	54	81	58	48	106
2020/21	31	61	92	66	54	120
2021/22	35	70	105	76	62	138

The above savings are based on the following Fire Safety payroll projections shown separately for current (Tier 1) participants and future (Tier 2) participants (000s omitted):

Payroll Projections - Fire Safety
Both Tier 1 & Tier 2 with EPMC

	Tier 1		Tier 2		Total	
Year	Counts	Payroll	Counts	Payroll	Counts	Payroll
2011/12	14	$ 1,360	1	$ 55	15	$ 1,416
2012/13	14	1,339	1	123	15	1,462
2013/14	13	1,322	2	187	15	1,509
2014/15	13	1,300	2	258	15	1,558
2015/16	12	1,276	3	333	15	1,609
2016/17	11	1,250	4	411	15	1,661
2017/18	11	1,226	4	489	15	1,715
2018/19	10	1,200	5	571	15	1,771
2019/20	10	1,177	5	651	15	1,828
2020/21	9	1,147	6	741	15	1,888
2021/22	8	1,103	7	846	15	1,949

Payroll Projections - Fire Safety
Tier 1 with EPMC, Tier 2 without EPMC

	Tier 1		Tier 2		Total	
Year	Counts	Payroll	Counts	Payroll	Counts	Payroll
2011/12	14	$ 1,360	1	$ 51	15	$ 1,411
2012/13	14	1,339	1	113	15	1,452
2013/14	13	1,322	2	172	15	1,494
2014/15	13	1,300	2	237	15	1,537
2015/16	12	1,276	3	306	15	1,581
2016/17	11	1,250	4	377	15	1,627
2017/18	11	1,226	4	449	15	1,675
2018/19	10	1,200	5	523	15	1,724
2019/20	10	1,177	5	598	15	1,775
2020/21	9	1,147	6	680	15	1,827
2021/22	8	1,103	7	777	15	1,879

Total payroll is expected to grow annually at 3.25% each year. A slower payroll growth results in lower cost savings while a more rapid payroll growth results in greater cost savings.

Miscellaneous Plan

The City participates in CalPERS 2.5%@55 risk pool for Miscellaneous employees.

Contribution Rates

In October 2010, CalPERS completed its June 30, 2009 valuation cycle. The following table shows the contribution rates for the 2010/11 and 2011/12 fiscal years.

	6/30/08 2010/2011	6/30/09 2011/2012
■ Employer Contribution Required		
● Normal Cost		
➢ Pool Rate	8.5%	8.7%
➢ FAE1 & PRSA	1.5%	1.5%
➢ Subtotal	10.0%	10.2%
● Amortization Bases		
➢ Risk Pool's Payment on Bases	1.2%	4.1%
➢ Amortization of Side Fund	1.5%	1.3%
➢ Subtotal	2.7%	5.4%
● **Total Employer Contribution**	**12.7%**	**15.6%**

Side Fund

A "side fund" was set up when the City's Miscellaneous Plan joined CalPERS' 2.5% @ 55 Risk Pool at June 30, 2003. The side fund's purpose was to account for the difference between the City plan's funded status and the Risk Pool when risk pools were established (June 30, 2003). Side fund payment are calculated as a level percentage of payroll based on a 7.75% interest rate and a 3.25% aggregate payroll increase. The City's Miscellaneous Plan June 30, 2011 side fund balance is $429,991 and expected 2011/12 payment are $46,525. However, actual 2011/12 side fund amounts paid will be based on a contribution rate (1.3%) times actual 2011/12 payroll. Any difference between expected and actual payments will go to the pool. Overpayments or underpayments do not decrease or increase the side fund's outstanding balance. CalPERS adjusts side fund contribution rate each year based on amortization payment and City projected payroll. There are 12 years of payment remaining.

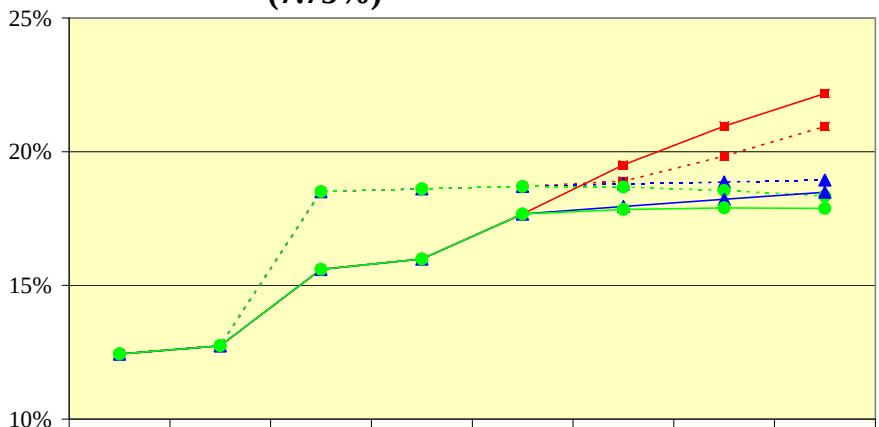
The City can realize significant savings by paying off its Side Fund balance for the Miscellaneous Plan early because balances are charge 7.75%. The Miscellaneous Plan's $430 thousand June 30, 2012 Side Fund balance, if paid off at June 30, results in a $240 thousand cash savings. If the cash savings is discounted at 4%, then savings becomes $117 thousand.

Projected Contribution Rates

CalPERS' actual investment return will significantly impact future City contribution rates. The following chart shows the City's projected contribution rates assuming future (beyond June 30, 2011) investment returns will average 0.4% - 4.3%, 7.75% and 11.8% - 15.3% (the

75th, 50th and 25th confidence limits[1]) respectively. The projections use an estimated June 30, 2011 return of 7.75%. This assumes no future benefit increases or Tier 2 implementation to the City's retirement plans.

Investment Return Varies
(7.75%)

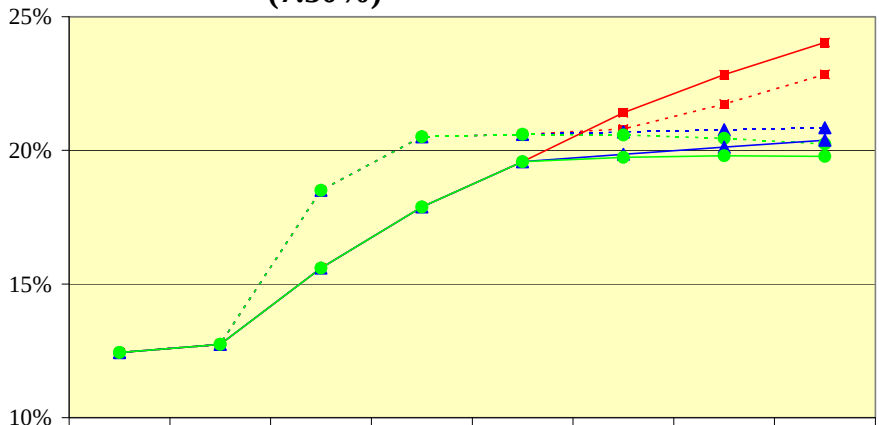


	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
UnMod AVA, Poor IR	12.4%	12.7%	18.5%	18.6%	18.7%	18.9%	19.8%	20.9%
UnMod AVA, Exp IR	12.4%	12.7%	18.5%	18.6%	18.7%	18.8%	18.9%	18.9%
UnMod AVA, Good IR	12.4%	12.7%	18.5%	18.6%	18.7%	18.7%	18.6%	18.3%
Mod AVA, Poor IR	12.4%	12.7%	15.6%	16.0%	17.7%	19.5%	21.0%	22.2%
Mod AVA, Exp IR	12.4%	12.7%	15.6%	16.0%	17.7%	17.9%	18.2%	18.5%
Mod AVA, Good IR	12.4%	12.7%	15.6%	16.0%	17.7%	17.8%	17.9%	17.9%

The graph above projects future contribution rates under both CalPERS' modified and unmodified asset smoothing methods. As mentioned in Page 2 of this report, last year CalPERS' Board approved a modification to increase the corridor used in the actuarial value assets to 140% for the June 30, 2009 valuation and to 130% for the June 30, 2010 valuation. As illustrated above, the June 30, 2009 asset loss is deferred for several years under the modified asset smoothing method. This will give the economy time to recover while allowing the City proper time to plan for the increases contribution rates. However, it will also likely result in higher contributions in future years.

[1] Investment Return will exceed the confidence limit by the given probability

Investment Return Varies
(7.50%)



	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
UnMod AVA, Poor IR	12.4%	12.7%	18.5%	20.5%	20.6%	20.8%	21.7%	22.8%
UnMod AVA, Exp IR	12.4%	12.7%	18.5%	20.5%	20.6%	20.7%	20.8%	20.8%
UnMod AVA, Good IR	12.4%	12.7%	18.5%	20.5%	20.6%	20.6%	20.5%	20.2%
Mod AVA, Poor IR	12.4%	12.7%	15.6%	17.9%	19.6%	21.4%	22.8%	24.0%
Mod AVA, Exp IR	12.4%	12.7%	15.6%	17.9%	19.6%	19.8%	20.1%	20.4%
Mod AVA, Good IR	12.4%	12.7%	15.6%	17.9%	19.6%	19.7%	19.8%	19.8%

The graph above includes an estimated 1.9% increase in contributions beginning with the 2012/13 contribution rate. The 1.9% is the estimated impact due to the anticipate 0.25% decrease in discount rate.

Police Safety Plan

The City participates in CalPERS 3%@55 risk pool for Police Safety employees.

Contribution Rates

In October 2010, CalPERS completed its June 30, 2009 valuation cycle. The following table shows the Police Safety Plan's contribution rates for the 2010/11 and 2011/12 fiscal years.

	6/30/08 2010/2011	6/30/09 2011/2012
■ Employer Contribution Required		
● Normal Cost		
➢ Pool Rate	13.3%	15.7%
➢ FAE1 & PRSA	2.6%	2.7%
➢ Subtotal	15.9%	18.4%
● Amortization Bases		
➢ Risk Pool's Payment on Bases	2.3%	4.6%
➢ Amortization of Side Fund	14.8%	15.5%
➢ Subtotal	17.1%	20.1%
● **Total Employer Contribution**	**33.0%**	**38.5%**

Side Fund

A "side fund" was set up when the City's Police Safety Plan joined the 3% @ 55 Risk Pool at June 30, 2003. The side fund's purpose was to account for the difference between the City plan's funded status and the Risk Pool when risk pools were established (June 30, 2003). Side fund payment are calculated as a level percentage of payroll based on a 7.75% interest rate and a 3.25% aggregate payroll increase. The City's Police Safety Plan June 30, 2011 side fund balance is $2,988,638 and expected 2011/12 payment are $304,357. However, actual 2011/12 side fund amounts paid will be based on a contribution rate (15.5%) times actual 2011/12 payroll. Any difference between expected and actual payments will go to the pool. Overpayments or underpayments do not decrease or increase the side fund's outstanding balance. CalPERS adjusts side fund contribution rate each year based on amortization payment and City projected payroll. There are 13 years of payment remaining.

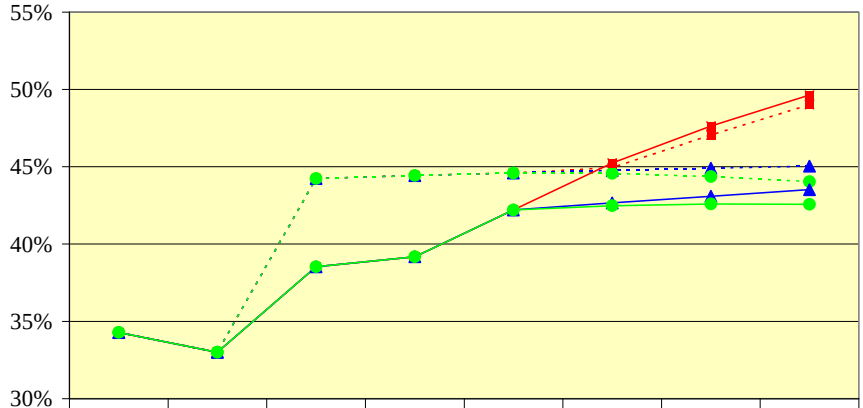
The City can realize significant savings by paying off its Side Fund balance for the Police Safety Plan early because balances are charge 7.75%. The Police Safety Plan's $3.0 million June 30, 2011 Side Fund balance, if paid off at June 30, results in a $1.8 million cash savings. If the cash savings is discounted at 4%, then savings becomes $0.8 million.

Projected Contribution Rates

CalPERS' actual investment return will significantly impact future City contribution rates. The following chart shows the City's projected contribution rates assuming future (beyond June 30, 2011) investment returns will average 0.4% - 4.3%, 7.75% and 11.8% - 15.3% (the

75th, 50th and 25th confidence limits[2]) respectively. The projections use an estimated 7.75% June 30, 2011 return. This assumes no future benefit increases or Tier 2 implementation to the City's retirement plans.

Investment Return Varies
(7.75%)

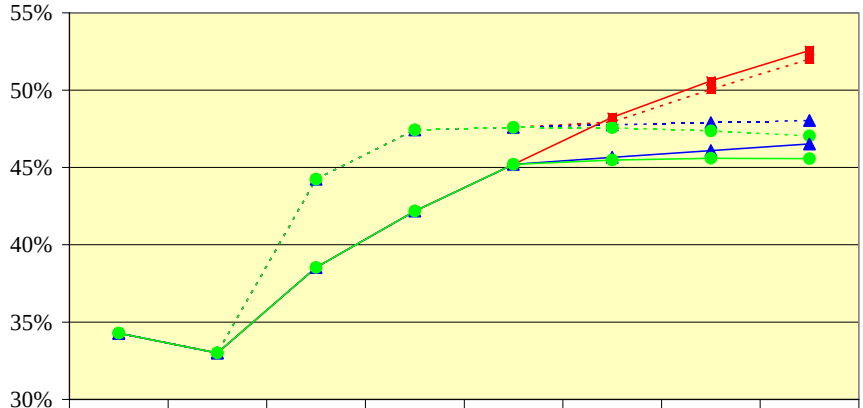


	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
UnMod AVA, Poor IR	34.3%	33.0%	44.2%	44.4%	44.6%	44.9%	47.1%	49.0%
UnMod AVA, Exp IR	34.3%	33.0%	44.2%	44.4%	44.6%	44.8%	44.9%	45.0%
UnMod AVA, Good IR	34.3%	33.0%	44.2%	44.4%	44.6%	44.6%	44.4%	44.0%
Mod AVA, Poor IR	34.3%	33.0%	38.5%	39.2%	42.2%	45.2%	47.6%	49.6%
Mod AVA, Exp IR	34.3%	33.0%	38.5%	39.2%	42.2%	42.7%	43.1%	43.5%
Mod AVA, Good IR	34.3%	33.0%	38.5%	39.2%	42.2%	42.5%	42.6%	42.6%

The graph above projects future contribution rates under both CalPERS' modified and unmodified asset smoothing methods. As mentioned in Page 2 of this report, last year CalPERS' Board approved a modification to increase the corridor used in the actuarial value assets to 140% for the June 30, 2009 valuation and to 130% for the June 30, 2010 valuation. As illustrated above, the June 30, 2009 asset loss is deferred for several years under the modified asset smoothing method. This will give the economy time to recover while allowing the City proper time to plan for the increases contribution rates. However, it will also likely result in higher contributions in future years.

[2] Investment Return will exceed the confidence limit by the given probability

Investment Return Varies
(7.50%)



	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
UnMod AVA, Poor IR	34.3%	33.0%	44.2%	47.4%	47.6%	47.9%	50.1%	52.0%
UnMod AVA, Exp IR	34.3%	33.0%	44.2%	47.4%	47.6%	47.8%	47.9%	48.0%
UnMod AVA, Good IR	34.3%	33.0%	44.2%	47.4%	47.6%	47.6%	47.4%	47.0%
Mod AVA, Poor IR	34.3%	33.0%	38.5%	42.2%	45.2%	48.2%	50.6%	52.6%
Mod AVA, Exp IR	34.3%	33.0%	38.5%	42.2%	45.2%	45.7%	46.1%	46.5%
Mod AVA, Good IR	34.3%	33.0%	38.5%	42.2%	45.2%	45.5%	45.6%	45.6%

The graph above includes an estimated 3.0% increase in contributions beginning with the 2012/13 contribution rate. The 3.0% is the estimated impact due to the anticipate 0.25% decrease in discount rate.

Fire Safety Plan
The City participates in CalPERS 3%@55 risk pool for Fire Safety employees.

Contribution Rates
In October 2010, CalPERS completed its June 30, 2009 valuation cycle. The following table shows the Fire Safety Plan's contribution rates for the 2010/11 and 2011/12 fiscal years.

	6/30/08 2010/2011	6/30/09 2011/2012
■ Employer Contribution Required		
● Normal Cost		
➢ Pool Rate	13.3%	15.7%
➢ FAE1 & PRSA	2.6%	2.7%
➢ Subtotal	15.9%	18.4%
● Amortization Bases		
➢ Risk Pool's Payment on Bases	2.3%	4.6%
➢ Amortization of Side Fund	8.9%	8.5%
➢ Subtotal	11.2%	13.1%
● **Total Employer Contribution**	**27.1%**	**31.5%**

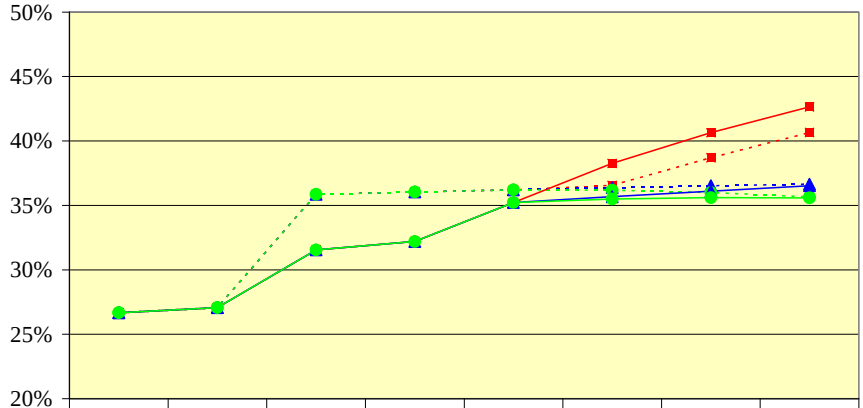
Side Fund
A "side fund" was set up when the City's Fire Safety Plan joined the 3% @ 55 Risk Pool at June 30, 2003. The side fund's purpose was to account for the difference between the City plan's funded status and the Risk Pool when risk pools were established (June 30, 2003). Side fund payments are calculated as a level percentage of payroll based on a 7.75% interest rate and a 3.25% aggregate payroll increase. The City's Fire Safety Plan June 30, 2011 side fund balance is $1,379,795 and expected 2011/12 payment are $120,918. However, actual 2011/12 side fund amounts paid will be based on a contribution rate (8.5%) times actual 2011/12 payroll. Any difference between expected and actual payments will go to the pool. Overpayments or underpayments do not decrease or increase the side fund's outstanding balance. CalPERS adjusts side fund contribution rate each year based on amortization payment and City projected payroll. There are 16 years of payment remaining.

The City can realize significant savings by paying off its Side Fund balance for the Fire Safety Plan early because balances are charge 7.75%. The Fire Safety Plan's $1.4 million June 30, 2011 Side Fund balance, if paid off at June 30, results in a $1.1 million cash savings. If the cash savings is discounted at 4%, then savings becomes $0.5 million.

Projected Contribution Rates
CalPERS' actual investment return will significantly impact future City contribution rates. The following chart shows the City's projected contribution rates assuming future (beyond June 30, 2010) investment returns will average 0.4% - 4.3%, 7.75% and 11.8% - 15.3% (the

75th, 50th and 25th confidence limits[3]) respectively. The projections use an estimated 7.75% June 30, 2010 return. This assumes no future benefit increases or Tier 2 implementation to the City's retirement plans.

Investment Return Varies (7.75%)

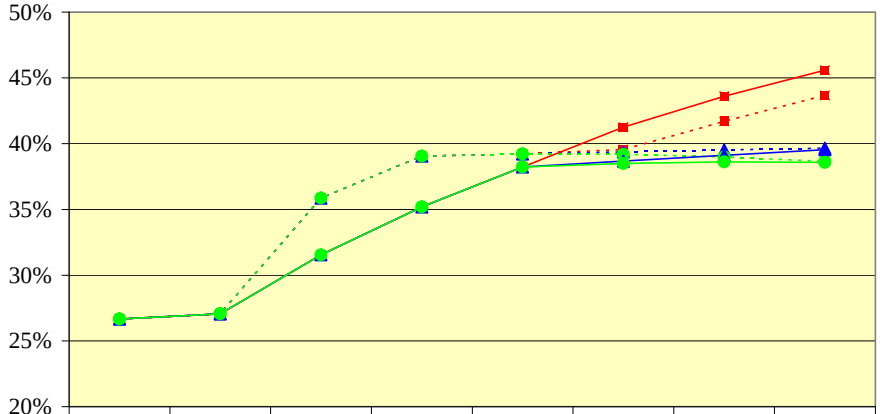


	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
UnMod AVA, Poor IR	26.7%	27.1%	35.9%	36.0%	36.2%	36.6%	38.7%	40.7%
UnMod AVA, Exp IR	26.7%	27.1%	35.9%	36.0%	36.2%	36.4%	36.5%	36.7%
UnMod AVA, Good IR	26.7%	27.1%	35.9%	36.0%	36.2%	36.2%	36.0%	35.7%
Mod AVA, Poor IR	26.7%	27.1%	31.5%	32.2%	35.2%	38.3%	40.6%	42.7%
Mod AVA, Exp IR	26.7%	27.1%	31.5%	32.2%	35.2%	35.7%	36.1%	36.5%
Mod AVA, Good IR	26.7%	27.1%	31.5%	32.2%	35.2%	35.5%	35.6%	35.6%

The graph above projects future contribution rates under both CalPERS' modified and unmodified asset smoothing methods. As mentioned in Page 2 of this report, last year CalPERS' Board approved a modification to increase the corridor used in the actuarial value assets to 140% for the June 30, 2009 valuation and to 130% for the June 30, 2010 valuation. As illustrated above, the June 30, 2009 asset loss is deferred for several years under the modified asset smoothing method. This will give the economy time to recover while allowing the City proper time to plan for the increases contribution rates. However, it will also likely result in higher contributions in future years.

[3] Investment Return will exceed the confidence limit by the given probability

Investment Return Varies
(7.50%)



	09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
UnMod AVA, Poor IR	26.7%	27.1%	35.9%	39.0%	39.2%	39.6%	41.7%	43.7%
UnMod AVA, Exp IR	26.7%	27.1%	35.9%	39.0%	39.2%	39.4%	39.5%	39.7%
UnMod AVA, Good IR	26.7%	27.1%	35.9%	39.0%	39.2%	39.2%	39.0%	38.7%
Mod AVA, Poor IR	26.7%	27.1%	31.5%	35.2%	38.2%	41.3%	43.6%	45.6%
Mod AVA, Exp IR	26.7%	27.1%	31.5%	35.2%	38.2%	38.7%	39.1%	39.5%
Mod AVA, Good IR	26.7%	27.1%	31.5%	35.2%	38.2%	38.5%	38.6%	38.6%

The graph above includes an estimated 3.0% increase in contributions beginning with the 2012/13 contribution rate. The 3.0% is the estimated impact due to the anticipated 0.25% decrease in discount rate.

Study Conclusions

- CalPERS investment losses will significantly increase pension contributions. However, due to rate smoothing and subsequent modifications, these higher contribution rates will not materialize for several years.
- When considering a second tier benefit level, several things are important to understand that cost savings are:
  3. Limited to Normal Cost difference between the old and new tier and
  4. Very modest until the second tier payroll becomes dominant, and, even then will not solve very many budget problems.

  There are reasons to consider a second pension tier, such as implementing a more appropriate benefit level, or encouraging longer City service.. However there are very minor short term financial benefits.
- The City can realize significant savings by paying off its "Side Fund" balances for each plan (Miscellaneous, Fire Safety & Police Safety) early because balances are charge 7.75%. For example the Police Safety Plan's $3.0 million June 30, 2011 Side Fund balance, if paid off at June 30, results in a $1.8 million cash savings. If the cash savings is discounted at 4%, then savings becomes $0.9 million. The Miscellaneous and Fire Safety Plans have similar (although smaller in magnitude) results.

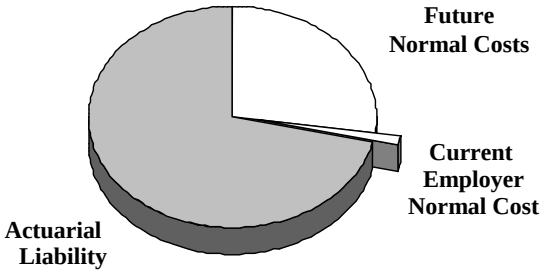
Understanding these terms makes it easier to understand the City's CalPERS actuarial information.

Present Value of Benefits: When CalPERS (or any actuary) prepares a pension valuation, they first gather participant data (including active employees, former employees not in payment status, participants and beneficiaries in payment status) at the valuation date (for example June 30, 2009). Using this data and some actuarial assumptions, they project future benefit payments. (The assumptions predict, among other things, when people will retire, terminate, die or become disabled, as well as what salary increases, inflation and investment return might be.) Those future benefit payments are discounted, using expected future investment return, back to the valuation date. This discounted present value is the plan's present value of benefits. It represents the amount the plan needs as of the valuation date to pay all future benefits – if all assumptions are met and no future contributions (employee or employer) are made.

Actuarial Liability: This represents the portion of the present value of benefits that participants have earned (on an actuarial, not actual, basis) through the valuation date.

Current Employer Normal Cost: The total normal cost represents the portion of the present value of benefits expected to be earned (on an actuarial, not actual, basis) in the coming year. The current employer normal cost represents the employer's portion of the total normal cost – that is, the total normal cost offset by employee contributions.

Present Value of Benefits



The above chart shows the Present Value of Benefits as the sum of Actuarial Liability, Current Normal Cost, and Future Normal Costs. Once these amounts are calculated, the actuary compares actuarial assets to the Actuarial Liability. When assets equal liabilities, a plan is considered on track for funding. When assets are greater than liabilities, the plan has excess assets; when assets are less than liabilities, the plan has an unfunded liability.

Contribution Rate: CalPERS does not require an agency to make up any shortfall (unfunded liability) immediately, nor do they allow an immediate credit for any excess assets. Instead,

the difference is amortized over time. An agency's contribution rate is nothing more complicated than the current employer normal cost, plus the amortized unfunded liability or less the amortized excess assets. Simply put, this contribution is the value of employer benefits earned during the year plus something to move the plan toward being on track for funding. There is a two-year delay from the valuation date to the contribution effective date. For example, the June 30, 2009 valuation generates an agency's 2011/12 fiscal year contribution. CalPERS instituted this delay a few years ago to ensure public agencies would have contribution rates as they begin their budgeting process for each fiscal year.

Fresh Start: When CalPERS prepares a valuation and determines an agency's contribution rate, it's usually in layers, such as gains/losses or plan changes, with each layer (base) adding up to the contribution rate. But if that calculation results in a zero contribution rate, CalPERS combines it into one base and tells the agency it will have a zero contribution for a fixed period. That combination is called a "fresh start." An agency with a fresh start will know it; the actuarial report will show a single base (labeled *fresh start*).

Super-Funded: A plan is super-funded when actuarial assets are greater than the present value of benefits. Referring to the above circle chart a plan has excess assets when assets exceed the Actuarial Liability and a super-surplus when asset exceed the Present Value of Benefit. When a plan is Super-Funded, the super-surplus (actuarial assets over present value of benefits) may be used to pay employee contributions. However, any super-surplus use must occur in the fiscal year for which the valuation report's contribution rate was calculated. For example, a plan super-funded in the June 30, 2009 valuation can use super-surplus to pay 2011/12 fiscal year employee contributions.

Employer Paid Member Contribution (EPMC): Each employee contributes towards his or her retirement based on the retirement formula. If employer chooses to pick up a portion or entire contribution for employees, the portion of member contribution that paid by employer is called Employer Paid Member Contribution.