City of Oceanside

Bartel Associates, LLC

CalPERS Actuarial Issues
June 30, 2011 Valuation

March 2013

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The City of Oceanside retained Bartel Associates to provide CalPERS related actuarial consulting services. This Executive Summary provides the City analysis of their CalPERS Miscellaneous and Safety pension plans and is designed to assist the City in evaluating their current funding situation. It may be helpful for the reader to first review the summary of basic definitions starting on page 23.

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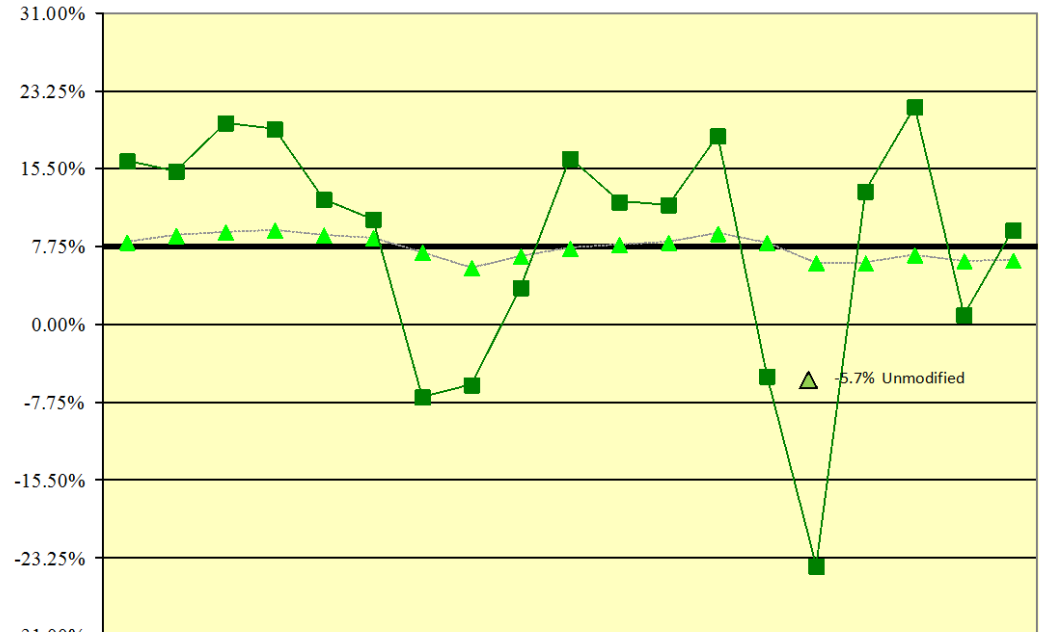
Study Highlights

- CalPERS investment losses during 2008/09 will either be paid for with higher contributions or future investment returns greater than currently anticipated. However, due to rate smoothing (including subsequent modifications), absent higher than expected investment returns, higher contribution rates will likely gradually materialize over several years.
- The City adopted a second tier for the Miscellaneous Plan. Employees hired after October 1, 2012 receive the 2% @ 60 benefit formula. New Miscellaneous Members (as defined by the California Public Employees Retirement Act of 2013 (PEPRA)) hired on or after January 1, 2013 will receive the 2.5% @ 67 benefit formula.
- New Safety Members (as defined by PEPRA) hired on or after January 1, 2013 will receive the 2.7% @ 57 benefit formula.
- The City's Miscellaneous plan has a June 30, 2011 Unfunded Actuarial Liability of $60.2 million. The Plan's projected June 30, 2013 Unfunded Actuarial Liability was approximately $67 million on an Actuarial Value basis ($107 million on a Market Value basis). This represents an 81% Actuarial Value funded ratio and a 70% Market Value funded ratio.

- The City's Safety plan is 86.6% funded on an Actuarial Value basis at June 30, 2011 with an Unfunded Actuarial Liability of $47.7 million. The Plan's projected June 30, 2013 Unfunded Actuarial Liability was approximately $56 million on an Actuarial Value basis ($107 million on a Market Value basis). This represents an 86% Actuarial Value funded ratio and a 73% Market Value funded ratio.

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	2012	2013
AVA	8.2%	8.9%	9.2%	9.4%	8.9%	8.6%	7.2%	5.7%	6.8%	7.6%	8.0%	8.2%	9.1%	8.2%	6.2%	6.1%	7.0%	6.4%	6.4%
MVA	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%	21.7%	1.0%	9.5%

The 2012 return was 1.0% based on a July 16, 2012 CalPERS press release. The 2013 return is estimated using the actual rate of return through October 2012 of 4.1% then assuming a 7.5% annualized return through June 30, 2013.

CalPERS' 10 year average annual return (from July 1, 2003 through June 30, 2012) is 7.0%, while their 20 year average annual return (from July 1, 1993 through June 30, 2012) is 8.4%.

The above chart shows two lines, AVA (Actuarial Value of Assets with CalPERS recent smoothing modification) and MVA (Market Value of Assets) Rate. 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 AVA 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, 2011 valuation determines fiscal year 2013/14 contribution rates.)

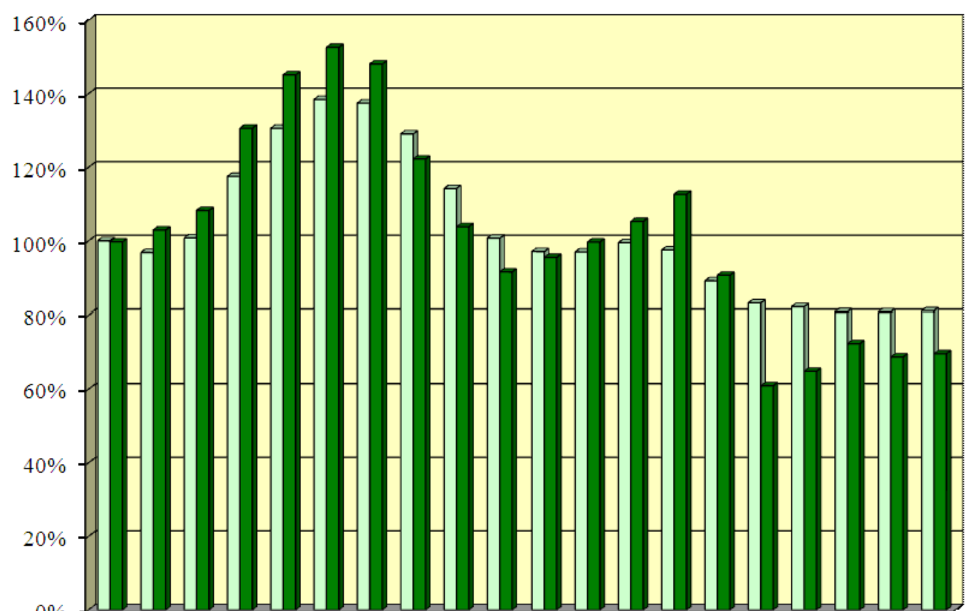
Miscellaneous Plan

The City provides 2.7% @ 55 benefit formula for Miscellaneous employees hired before October 11, 2012. Employees hired after October 11, 2012 the City provides 2.0% @ 60 with FAE3 benefit formula. Beginning January 1, 2013, the City will provide PEPRA benefits to all new members. Classic members (lateral moves) will receive 2.0% @ 60 formula.

Funded Status

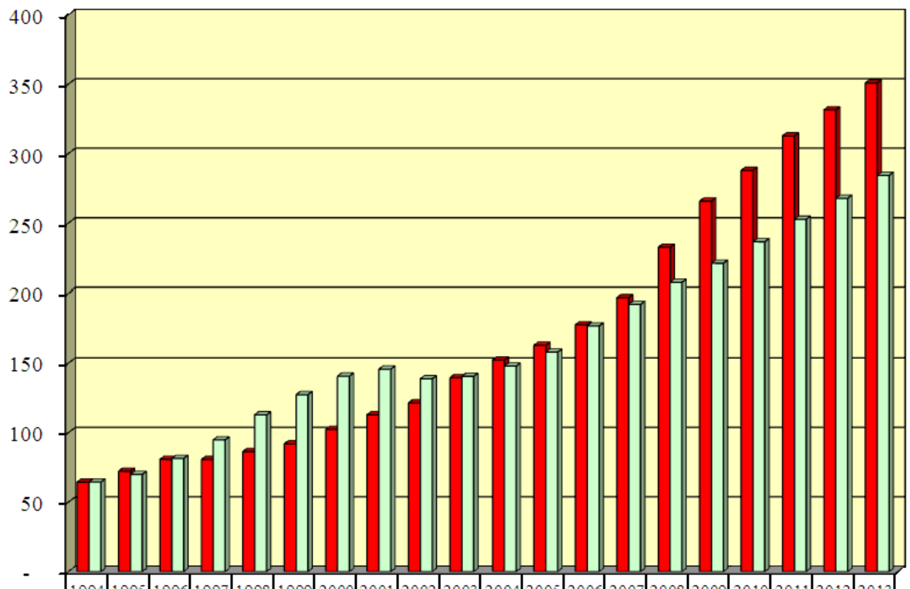
The following two charts show the City's Miscellaneous Plan funded status. The first chart displays the funded status as a percentage of Actuarial Value of Assets and Market Value of Assets. The second chart compares the Actuarial Accrued Liability to the Actuarial Value of Assets (amount in millions). Note that the June 30, 2012 and June 30, 2013 asset values are estimated.

Having assets equal to Actuarial Liability should be viewed as a target. While this is an appropriate measuring stick, it is expected that assets will move above and sometimes below the actuarial liability. The funded ratio is subject to annual fluctuations based on numerous factors including asset and actuarial (non-asset) gains and losses, and will only become a concern if the plan is consistently under-funded or runs the risk of not being able to pay benefits.



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Funded Ratio - AVA	100%	97%	101%	118%	131%	138%	137%	129%	114%	101%	97%	97%	100%	98%	89%	83%	82%	81%	81%	81%
Funded Ratio - MVA	100%	103%	108%	131%	145%	153%	148%	122%	104%	92%	96%	100%	105%	113%	91%	61%	65%	72%	69%	70%

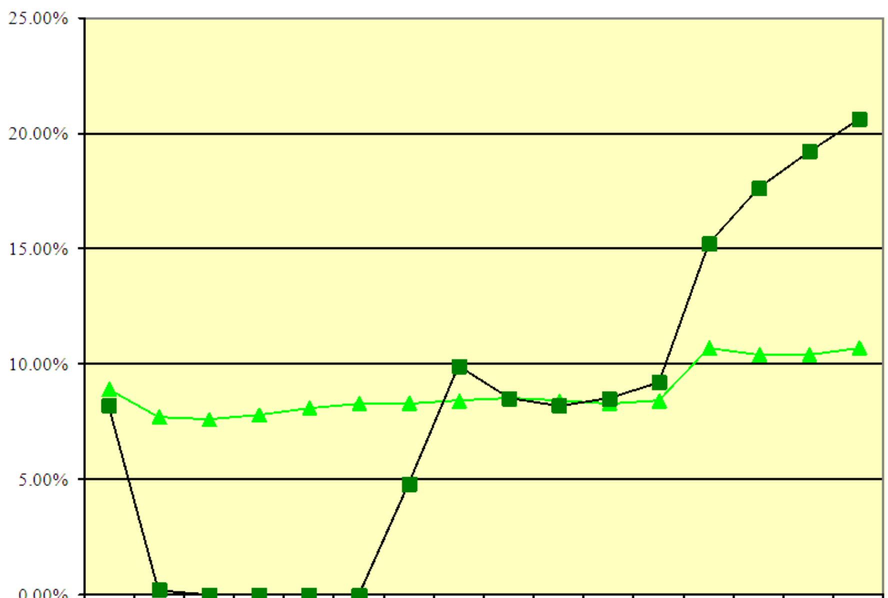
It is of note that some believe that, because the Actuarial Value of Assets determines contribution rates, the funded ratio on this basis is most important. However, the funded ratio on a Market Value of Assets best represents how well funded the plan is and, when compared to the Actuarial Value of Assets funded ratio, is a better indication of where contribution rates are likely to go. The following chart shows the plan's historical Actuarial Value of Assets and Actuarial Accrued Liability.



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Actuarial Liability	64	72	81	81	86	92	102	113	121	140	152	163	178	197	233	266	288	313	331	351
Actuarial Asset Value	64	70	81	95	113	127	141	146	139	141	148	158	177	192	207	221	237	253	268	284

Contribution Rates

The following chart shows historical contribution rates for the City's Miscellaneous Plan over the past several years.



	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14
ER NC	8.9%	7.7%	7.6%	7.8%	8.1%	8.3%	8.3%	8.4%	8.5%	8.4%	8.3%	8.4%	10.7%	10.4%	10.4%	10.7%
Total ER Cont Rate	8.2%	0.2%	0.0%	0.0%	0.0%	0.0%	4.8%	9.9%	8.5%	8.2%	8.5%	9.2%	15.2%	17.6%	19.2%	20.6%

The years in the above table reflect CalPERS valuation dates, which determine the City's contribution rates two years later. For example 2011 reflects CalPERS June 30, 2011 valuation which determines the City's 2013/14 contribution rates.

Projected Contribution Rates

CalPERS' actual investment return will significantly impact future City contribution rates. The following charts shows the City's projected contribution rates assuming future (beyond June 30, 2013) investment returns will average 0.2% - 3.4%, 7.5% and 11.6% - 15.1% (the 75th, 50th and 25th confidence limits[1]) respectively.

The graphs below projects future contribution rates under CalPERS' modified asset smoothing methods. As mentioned on Page 2 of this report, in June 2009, 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.

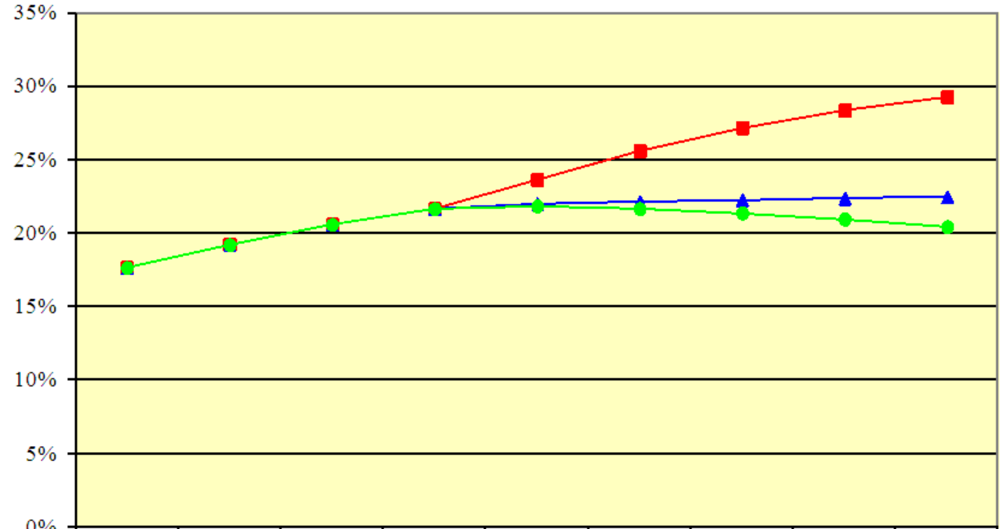
Beginning with the June 30, 2011 valuation, CalPERS changed their discount rate and aggregate pay growth assumptions to 7.5% and 3.00% respectively. The graph below projects contribution rates with the new future discount rate. The impact of the assumption changes are assumed to phase in over two years. The City could request CalPERS not phase in the assumption changes, resulting in higher first year costs but lower costs for the next 19 years.

The second graph projects contribution rates with the new PEPRA benefits effective January 1, 2013 for new members.

The projection is based on the following new hire assumptions: Assumes 50% of 2013 new hires will be Classic Member (laterals) with Tier 2 2%@60 benefit and 50% will be New Members with PEPRA benefits. Assumes Classic Members will decrease from 50% to 0% of new hires over 20 years. It is important to note these projections do not include any actuarial method or assumption changes.

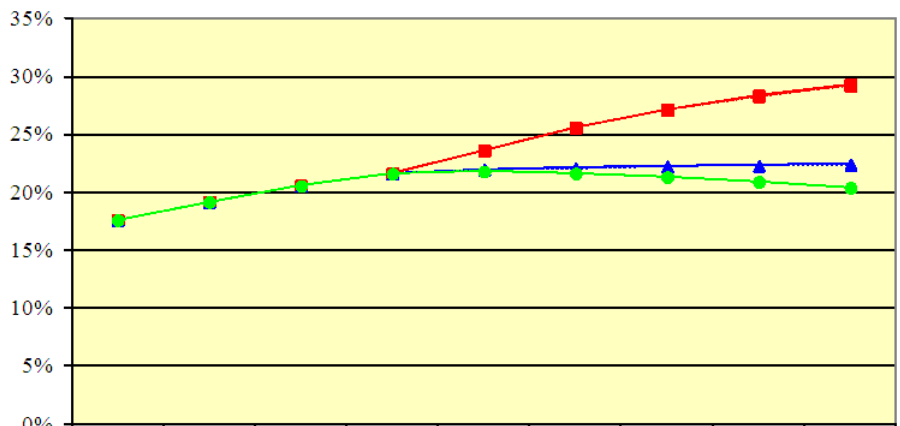
[1] Investment Return will exceed the confidence limit by the given probability

Investment Return Varies
Tier 1 + Tier 2



	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
Poor IR	17.6%	19.2%	20.6%	21.6%	23.6%	25.6%	27.2%	28.4%	29.3%
Exp IR	17.6%	19.2%	20.6%	21.6%	22.0%	22.1%	22.3%	22.4%	22.5%
Good IR	17.6%	19.2%	20.6%	21.6%	21.8%	21.7%	21.4%	20.9%	20.4%

Investment Return Varies
Tier 1 +Tier 2 + PEPRA



	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
T1+T2 - Poor IR	17.6%	19.2%	20.6%	21.6%	23.6%	25.6%	27.2%	28.4%	29.3%
T1+T2 - Exp IR	17.6%	19.2%	20.6%	21.6%	22.0%	22.1%	22.3%	22.4%	22.5%
T1+T2 - Good IR	17.6%	19.2%	20.6%	21.6%	21.8%	21.7%	21.4%	20.9%	20.4%
All - Poor IR	17.6%	19.2%	20.6%	21.6%	23.6%	25.6%	27.2%	28.3%	29.3%
All - Exp IR	17.6%	19.2%	20.6%	21.6%	22.0%	22.1%	22.2%	22.3%	22.4%
All - Good IR	17.6%	19.2%	20.6%	21.6%	21.8%	21.6%	21.3%	20.9%	20.4%

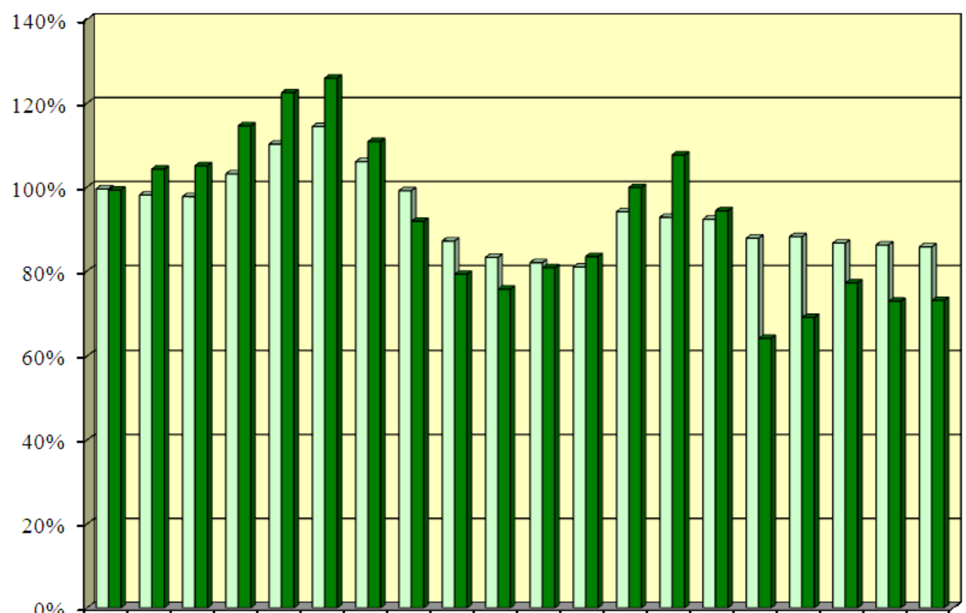
Safety Plan

The City provides the 3.0% @ 50 benefit formula for Safety employees for employees hired before January 1, 2013. After January 1, 2013 the City provides the 2.7% @ 57 PEPRA benefits for new members, Classic members (lateral moves) will receive the 3.0% @ 50 benefit formula.

Funded Status

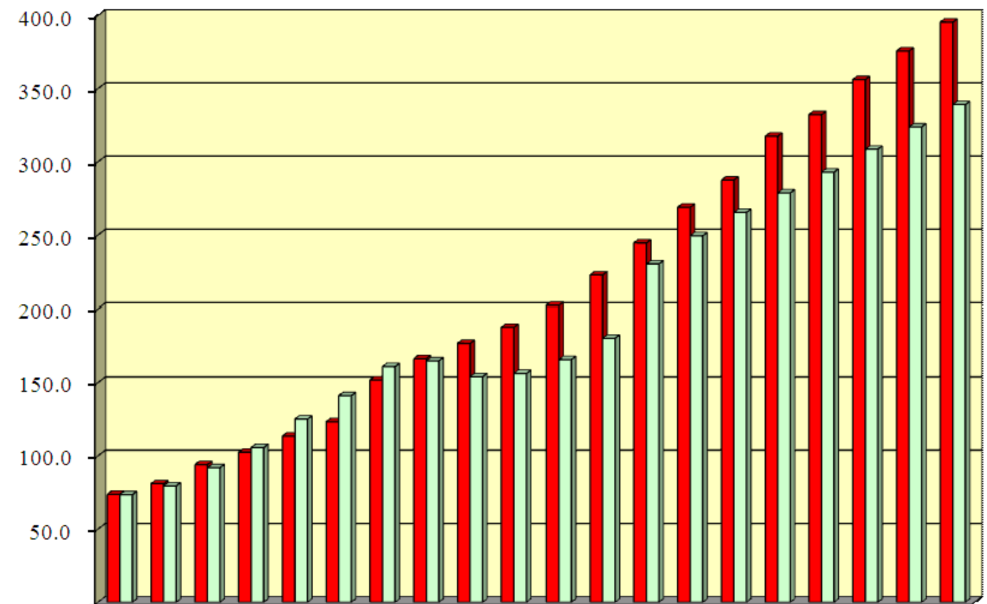
The following two charts show the City's Safety Plan funded status. The first chart displays the funded status as a percentage of Actuarial Value of Assets and Market Value of Assets. The second chart compares the Actuarial Accrued Liability to the Actuarial Value of Assets (amount in millions). Note that the June 30, 2012 and June 30, 2013 asset values are estimated.

Having assets equal to Actuarial Liability should be viewed as a target. While this is an appropriate measuring stick, it is expected that assets will move above and sometimes below the actuarial liability. The funded ratio is subject to annual fluctuations based on numerous factors including asset and actuarial (non-asset) gains and losses, and will only become a concern if the plan is consistently under-funded or runs the risk of not being able to pay benefits.



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Funded Ratio - AVA	100%	98%	98%	103%	110%	114%	106%	99%	87%	83%	82%	81%	94%	93%	92%	88%	88%	87%	86%	86%
Funded Ratio - MVA	99%	104%	105%	115%	122%	126%	111%	92%	79%	76%	81%	83%	100%	108%	94%	64%	69%	77%	73%	73%

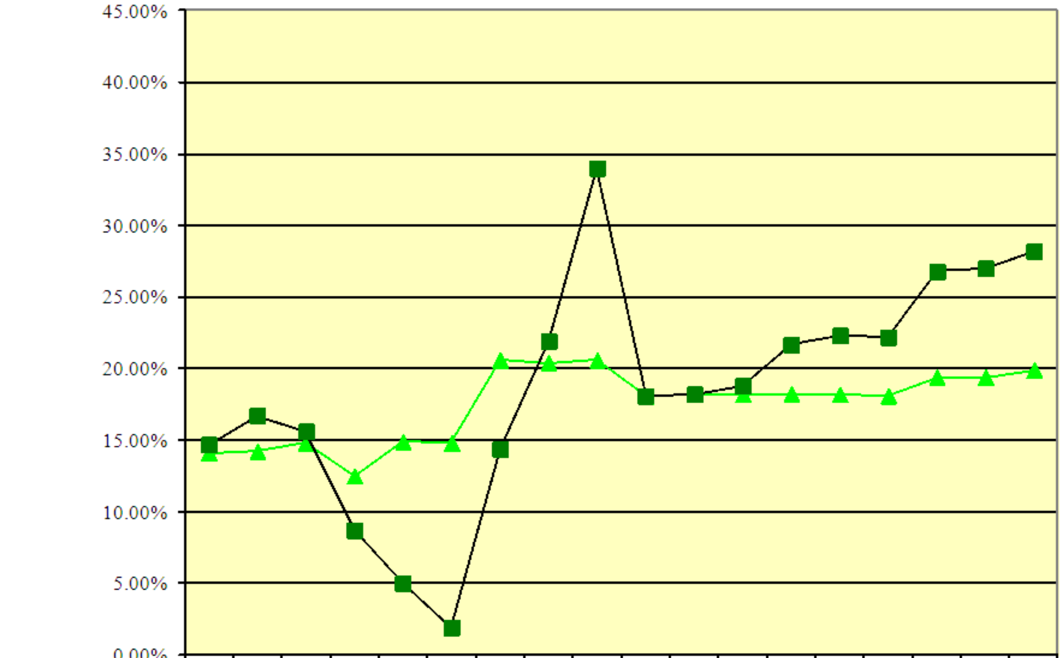
It is of note that some believe that, because the Actuarial Value of Assets determines contribution rates, the funded ratio on this basis is most important. However, the funded ratio on a Market Value of Assets best represents how well funded the plan is and, when compared to the Actuarial Value of Assets funded ratio, is a better indication of where contribution rates are likely to go. The following chart shows the plan's historical Actuarial Value of Assets and Actuarial Accrued Liability.



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Actuarial Liability	73.7	80.9	94.0	102.	113.	123.	151.	166.	176.	187.	202.	222.	244.	268.	287.	317.	332.	356.	375.	395.
Actuarial Asset Value	73.4	79.4	91.8	105.	125.	141.	160.	164.	154.	156.	165.	180.	230.	249.	265.	278.	292.	308.	323.	339.

Contribution Rates

The following chart shows historical contribution rates for the City's Safety Plan over the past several years.



	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14
Total ER NC	14.1%	14.2%	14.8%	12.5%	14.9%	14.8%	20.6%	20.4%	20.6%	18.1%	18.2%	18.2%	18.2%	18.2%	18.1%	19.4%	19.4%	19.9%
Total ER Cont Rate	14.7%	16.7%	15.6%	8.7%	5.0%	1.9%	14.4%	21.9%	34.0%	18.1%	18.2%	18.8%	21.7%	22.3%	22.2%	26.8%	27.0%	28.2%

The years in the above table reflect CalPERS valuation dates, which determine the City's contribution rates two years later. For example 2011 reflects CalPERS June 30, 2011 valuation which determines the City's 2013/14 contribution rates.

Projected Contribution Rates
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The graphs below projects future contribution rates under CalPERS' modified asset smoothing methods. As mentioned on Page 2 of this report, in June 2009, 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.

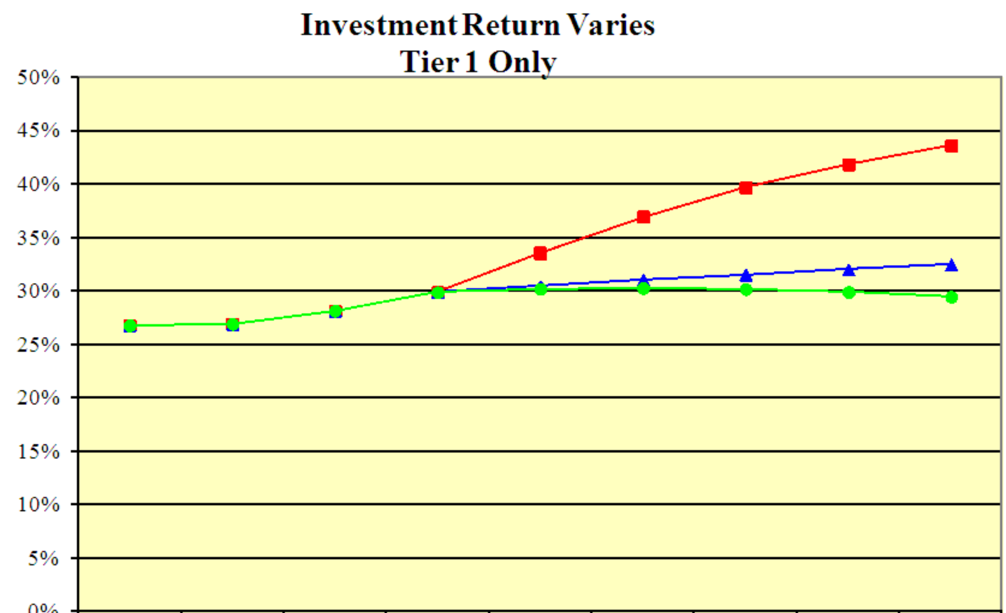
As mentioned earlier beginning with the June 30, 2011 valuation, CalPERS will use 7.50% discount rate and 3.00% pay growth assumptions. The graph below projects contribution rates with the new future discount rate. The impact of the assumption changes are assumed

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

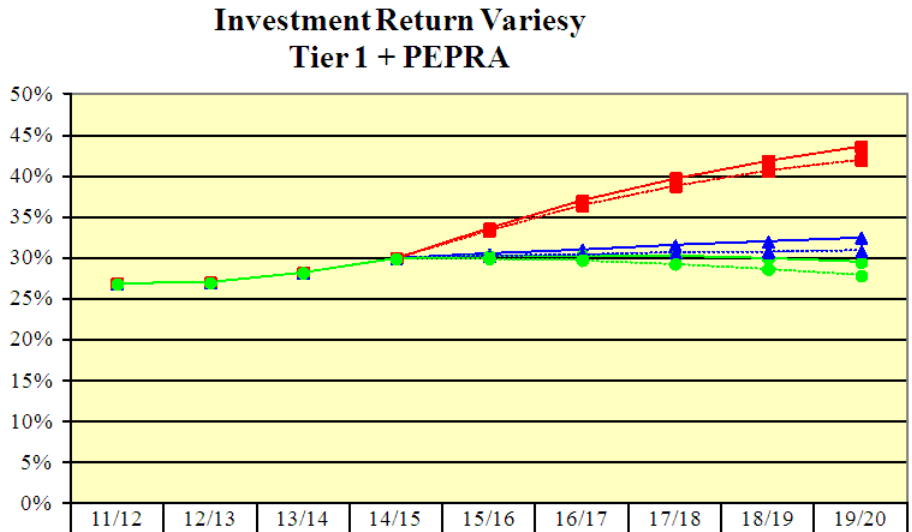
to phase in over two years. The City could request CalPERS not phase in the assumption changes, resulting in higher first year costs but lower costs for the next 19 years.

The second graph projects contribution rates with the new PEPRA benefits effective January 1, 2013 for new members.

The projection is based on the following new hire assumptions: Assumes 50% of 2013 new hires will be Classic Member (laterals) with 3%@50 benefit and 50% will be New Members with PEPRA benefits. Assumes Classic Members will decrease from 50% to 0% of new hires over 10 years. It is important to note these projections do not include any actuarial method or assumption changes.



	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
Poor IR	26.8%	26.9%	28.2%	29.9%	33.6%	36.9%	39.7%	41.9%	43.6%
Exp IR	26.8%	26.9%	28.2%	29.9%	30.5%	31.0%	31.5%	32.0%	32.5%
Good IR	26.8%	26.9%	28.2%	29.9%	30.2%	30.3%	30.2%	29.9%	29.5%



	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20
T1 - Poor IR	26.8%	26.9%	28.2%	29.9%	33.6%	36.9%	39.7%	41.9%	43.6%
T1 - Exp IR	26.8%	26.9%	28.2%	29.9%	30.5%	31.0%	31.5%	32.0%	32.5%
T1 - Good IR	26.8%	26.9%	28.2%	29.9%	30.2%	30.3%	30.2%	29.9%	29.5%
All - Poor IR	26.8%	26.9%	28.2%	29.9%	33.3%	36.4%	38.8%	40.6%	42.0%
All - Exp IR	26.8%	26.9%	28.2%	29.9%	30.2%	30.4%	30.6%	30.7%	30.8%
All - Good IR	26.8%	26.9%	28.2%	29.9%	29.9%	29.7%	29.3%	28.6%	27.8%

CALPERS UPCOMING ISSUES

CalPERS actuarial staff is looking to make some changes to their contribution policy. the primary reasons why are:

- The current asset smoothing method includes a corridor around the Market Value of Assets, limiting the Actuarial Value of Assets when investment return is particularly extreme. This corridor generates volatility when extreme events happen.
- Projections show that the current asset smoothing and amortization policy results in very slow progress towards increased funded status.
- Current method results in two different unfunded liability and funded ratios, one on a Market Value of Assets basis and the other on an Actuarial Value of Assets basis. This creates confusion and, CalPERS believe, actuarial methods should be more transparent.
- The new Agency pension accounting standard, GASB 68, encourages faster funding by requiring a lower discount rate for slower funding. If the current funding policy does not change CalPERS will almost certainly require the City to report its GASB 68 liability using a discount rate substantially below 7.5%.

Consequently CalPERS is looking at the following alternatives:

- No asset corridor in conjunction with a shorter smoothing period and fixed (likely shorter) amortization periods.
- Direct rate smoothing. Direct rate smoothing is based on the concept of calculating the contribution rate using no asset smoothing, shorter amortization periods, and no cap on rate increases each year, comparing that rate to the current rate and phasing into the new rate over a 5 year period. CalPERS Chief Actuary believes direct rate smoothing:
  - Will likely result in much higher contribution rates and higher volatility in normal years but much less volatility for extreme events
  - Believes it will be easier for Board to accept assumption changes (see below) if included in direct rate smoothing

Either of the above alternatives will results in significant progress over time of the Plan's funded status. However they will also result in substantially higher contribution rates as well. Without knowing the proposals details, we can't project the impact on the City's contribution rates, however, we expect Miscellaneous Plan rates will increase 6-8 percentage points and Safety Plan rates will increase 8-10 percentage rates over current rates during the next 10 years.

In addition to direct rate smoothing CalPERS has started a demographic assumption study. Generally, assumptions are not expected to change much except for mortality, where there is likely going to be a noticeable impact due to anticipated improvement. In addition CalPERS has started an asset allocation study which may very result in a lower (than 7.5%) discount rate.

All the above will probably be included in CalPERS June 30, 2013 valuation (first impacting 2015/16 rates) but will be estimated as part of the June 30, 2012 valuation when they project contribution rates.

Considering the above changes we recommend the City consider increasing contribution rates consistent with anticipated increases once CalPERS Board approves the contribution policy changes. This can easily be accomplished by request CalPERS use a shorter amortization period for both Safety and Miscellaneous.

We understand the San Diego County Taxpayers Association released a report on San Diego County pensions (http://www.sdcta.org/Uploads/Documents/2013%20Regional%20Pension%20Comparison%20FINAL_1.pdf). Page two of this report makes specific reference to the City of Oceanside, saying "*Between FY 2013 and FY 2014, the City of Oceanside held the largest increase in its reported unfunded liability*". Measuring the increase as a percentage increase from one year to the next , while accurate, is not a reasonable way to look at the unfunded liability. For example an agency could have an increase from a $100 to a $200 unfunded liability (a 100% increase) and be rated below an agency that increased their unfunded liability from $1,000 to $1,500 (50% increase), despite having a lower dollar increase. Furthermore, there are many reasons why a City's unfunded liability changes from one year to the next. We believe a better way to compare one agency to the next is to both compare the unfunded liability to PERSable wages and per tax payer as well as look at each agency's contribution policy (are they paying what CalPERS is asking or are they asking for shorter amortization periods to pay the unfunded liability sooner than requested).

IMPACT OF STAFF REDUCTION

CalPERS determines City contribution rates as a percent of expected PERSable wages and the City remits contributions to CalPERS based on the contribution rate and actual PERSable wages. For example the City's Miscellaneous Plan 2013/14 contribution rates are based on the dollar contribution requirement ($9.191 million) divided by expected PERSable wages ($44.659 million), resulting in a City contribution rate of 20.580%. If actual PERSable wages are higher than $44.659 million then actual contributions will be higher than expected resulting in a contribution gain and, similarly, if actual PERSable wages are lower than $44.659 million there will be a contribution loss. Contribution gains and losses are combined with other gains and losses. Gains decrease future contribution rates while losses increase future contribution rates.

If the City has staff reductions we would expect:

- The Unfunded Actuarial Accrued Liability to change very little due to the reductions.
- Increase in future CalPERS contribution rates as noted above. The increased unfunded rate can be roughly estimated by taking the original unfunded rate multiplied by the payroll ratio before and after staff reductions. For example, the 2013/14 unfunded rate is 9.888%. If a staff reduction reduces the payroll from $44.659 million to $44 million, a rough estimate of the unfunded rate after staff reduction is 9.888% x ($44.659/$44) = 11.001%.
- Savings would materialize from fewer employees due to:
  - Lower salaries;
  - CalPERS pension normal cost; and
  - Non-pension related benefits.
- No change to payments on 2005 POB debt service since those payments are not made as a percent of payroll.

POB DEBT SERVICE

On August 17, 2005, the City issued Pension Obligation Bonds to help fund its Safety and Miscellaneous plans. The issued amount was $42,780,000.

The table below illustrates the debt service of the bond.

	Debt Service Payment[3]			Debt Service as % of Payroll[4]	
Fiscal Year	**Miscellaneous**	**Safety**	**Total**	**Miscellaneous**	**Safety**
2005/06	$147,247	$882,624	$1,029,871	0.4%	4.6%
2006/07	369,915	2,217,335	2,587,251	1.1%	10.6%
2007/08	384,859	2,306,913	2,691,772	1.1%	9.6%
2008/09	400,289	2,399,402	2,799,691	1.1%	8.6%
2009/10	416,842	2,498,619	2,915,461	1.0%	8.0%
2010/11	433,032	2,595,669	3,028,701	0.9%	7.8%
2011/12	450,225	2,698,724	3,148,949	0.9%	7.5%
2012/13	468,315	2,807,160	3,275,475	1.0%	8.0%
2013/14	487,138	2,919,991	3,407,129	1.1%	8.3%
2014/15	505,871	3,032,276	3,538,147	1.1%	8.3%
2015/16	525,883	3,152,229	3,678,112	1.1%	8.4%
2016/17	545,511	3,269,886	3,815,397	1.1%	8.5%
2017/18	566,626	3,396,453	3,963,080	1.1%	8.5%
2018/19	587,582	3,522,069	4,109,652	1.1%	8.6%
2019/20	610,351	3,658,548	4,268,900	1.1%	8.7%
2020/21	632,664	3,792,297	4,424,961	1.2%	8.7%
2021/22	656,417	3,934,675	4,591,092	1.2%	8.8%
2022/23	681,475	4,084,876	4,766,351	1.2%	8.9%
2023/24	706,388	4,234,208	4,940,596	1.2%	8.9%
2024/25	732,395	4,390,102	5,122,497	1.2%	9.0%
2025/26	41,832	250,749	292,581	0.1%	0.5%

3 Debt service payment allocated by Miscellaneous and Safety based on UAAL from CalPERS 8/10/05 letter.
4 Projected payroll based on CalPERS reports and assumed 3.00% increase for years after 2013/14.

CALPERS DISCOUNT RATE ASSUMPTIONS

CalPERS adopted updated actuarial assumptions to be used beginning with the June 30, 2011 valuation. These updated assumptions include 7.5% discount rate and 3% aggregate payroll growth.

The following table shows the history of CalPERS discount rate assumptions over the past three valuations. The 7.75% discount rate used for the 2009 and 2010 valuations consisted of an assumed 3% price inflation and a expected 4.75% net real rate of return. Please note that while the real rate of return assumption used in both 2009 and 2010 was a 4.75%, the 2010 valuation reflects a lower confidence level of achieving that rate from 2009. This is reflected in the fact that the margin for adverse deviation[5] was lowered from 0.29% in 2009 to 0.03% in 2010. For the 2011 valuation, the expected net real rate of return remains at 4.75% but the assumed price inflation was lowered from 3% in 2010 to 2.75% in 2011. Also note that the "50% Confidence Level" returns indicate that CalPERS anticipates that half the time they expect actual returns (above inflation) to exceed that amount and half the time they expect actual returns to fall below that amount.

	6/30/09	6/30/10	6/30/11
■ Real rate of return			
● 50% Confidence Level	5.04%	4.78%	4.78%
● Margin for adverse deviation	(0.29)	(0.03)	(0.03)
■ Price Inflation	3.00	3.00	2.75
■ Total	7.75%	7.75%	7.50%

CalPERS, in developing the 2011 new assumptions, developed the 50% Confidence Level rate from a stochastic analysis of expected returns. For the first 10 years, they used the capital market assumptions from four independent investment advisors' (Wilshire, PCA, Mercer, and Callan) and from CalPERS' internal investment staff. For later years, they used long-term historical averages developed by CalPERS' internal actuarial and investment staff. The new assumptions were derived from the average of expected return over the projected 19 years. Combined returns are higher than the first 10 years but lower than historical returns (since the 1920's).

	Project Period (Years)		
	1-10	11-19	New
■ Real rate of return			
● 50% Confidence Level	4.23%	5.39%	4.78%
■ Price Inflation	2.75	2.75	2.75
■ Total	6.98%	8.14%	7.53%

5 The margin for adverse deviation is the difference between expected net long-term rate of return and the discount rate. It represents a margin of conservatism. Please note the margin for adverse deviation remains low in the 2011 assumptions. CalPERS Chief Actuary recommended 0.28% margin. Bartel Associates typically recommends 0.25% to 0.5% margin.

PEPRA SUMMARY

The California Legislature passed and the Governor signed AB 340 earlier in 2012. This legislation is commonly referred to as the California Public Employees' Pension Reform Act of 2013 (PEPRA). Highlights of PEPRA are:

- **New Members** – Generally, employees hired after 1/1/13 who did not previously participate in a reciprocal retirement system
- **Pension Formulas for New Members**
  - Miscellaneous – 2.5% @ 67; earliest svc. ret. age 52
  - Safety – 2% @ 57, 2.5% @ 57, and 2.7% @ 57; earliest svc. ret. age 50
- **Plan Compensation Limit for New Members**
  - $113,700 (100% of 2013 Social Security Wage Base
  - $136,440 (120% for members not in Social Security)
  - Increasing annually with CPI
  - Employer can provide a defined contribution plan for pay above the limit
- **Final Compensation for New Members**
  - Highest average plan compensation over 36 consecutive months
  - Plan compensation is the normal monthly rate of pay or base pay
- **Cost Sharing**
  - Target of 50% of total normal cost
  - New members must pay greatest of 50% of total normal cost, amount paid by similar current members, or bargained amount if higher
  - Employers cannot pay any part of new member required employee contributions
  - Employer may impose current employees paying 50% of total normal cost (with certain limits) if not agreed through collective bargaining by 1/1/18
- **Benefit Enhancements**
  - Benefit enhancements after 1/1/13 apply only to future service
  - No limits on COLAs
- **Safety Industrial Disability**
  - Increase in benefit for those under 50 with long service
  - Trial period ending 1/1/18
- **Supplemental Defined Benefit Pension Plans**
  - Employer cannot adopt a supplemental defined benefit pension plan after 1/1/13
  - New employees cannot participate in existing plan
- **Pension Holidays**
  - Total employer and employee contributions cannot be less than the normal cost
- **Air Time Service Purchase**
  - Eliminated for all members 1/1/13
- **OPEB**
  - An employer cannot provide better vesting schedule to unrepresented employees as is provided to represented employees
  - Law is unclear whether applies:
    - ☐ Only to vesting schedule or also to the amount of benefit provided
    - ☐ To new members, existing members, and/or current retirees

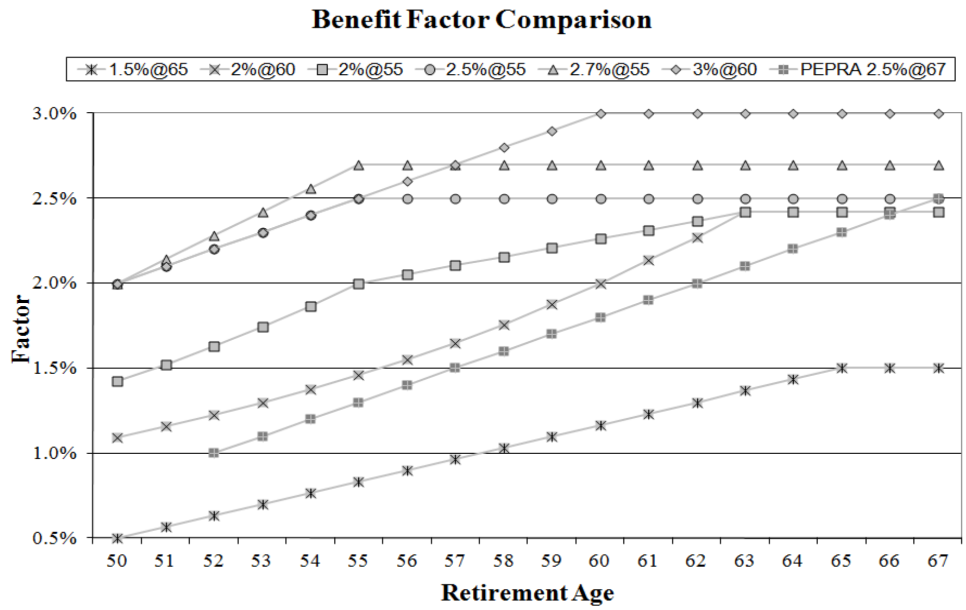
PEPRA SUMMARY

- Target of 50% of total normal cost for everyone
- *New members* must pay greater of 50% of total normal cost or bargained amount if higher
- Employer cannot pay any part of *new member* required employee contributions
- Employer may impose current employees pay 50% of total normal cost (limited to certain amounts) if not agreed through collective bargaining by 1/1/18
- Miscellaneous Plan:

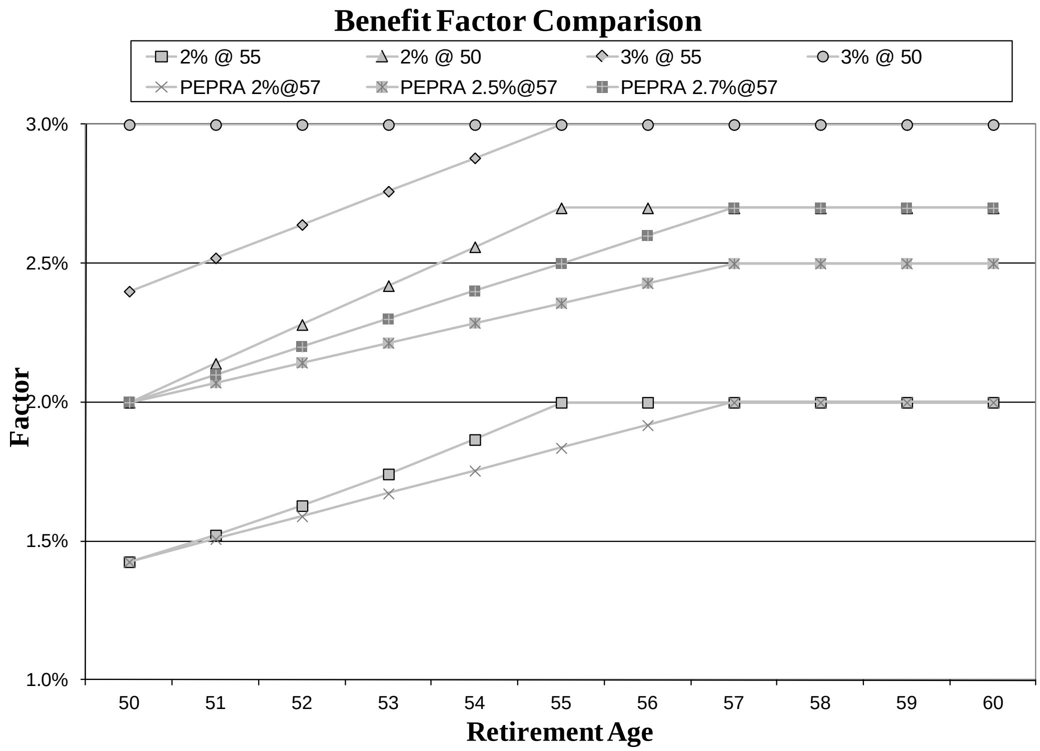
Total Normal Cost	Current Members	New Members
Employer Normal Cost	10.7%	6.65%
Member Normal Cost	8.0%	6.65%
Total Normal Cost	18.7%	13.3%
50% Target	9.35%	6.65%

- Safety Plan

Total Normal Cost	Current Members	New Members
Employer Normal Cost	19.9%	12.1%
Member Normal Cost	9.0%	12.1%
Total Normal Cost	28.9%	24.2%
50% Target	14.45%	12.1%



Age	1.5%@65	2%@60	2%@55	2.5%@55	2.7%@55	3%@60	PEPRA 2.5%@67
50	0.500%	1.092%	1.426%	2.000%	2.000%	2.000%	n/a
51	0.567%	1.156%	1.522%	2.100%	2.140%	2.100%	n/a
52	0.633%	1.224%	1.628%	2.200%	2.280%	2.200%	1.000%
53	0.700%	1.296%	1.742%	2.300%	2.420%	2.300%	1.100%
54	0.767%	1.376%	1.866%	2.400%	2.560%	2.400%	1.200%
55	0.833%	1.460%	2.000%	2.500%	2.700%	2.500%	1.300%
56	0.900%	1.552%	2.052%	2.500%	2.700%	2.600%	1.400%
57	0.967%	1.650%	2.104%	2.500%	2.700%	2.700%	1.500%
58	1.033%	1.758%	2.156%	2.500%	2.700%	2.800%	1.600%
59	1.100%	1.874%	2.210%	2.500%	2.700%	2.900%	1.700%
60	1.167%	2.000%	2.262%	2.500%	2.700%	3.000%	1.800%
61	1.233%	2.134%	2.314%	2.500%	2.700%	3.000%	1.900%
62	1.300%	2.272%	2.366%	2.500%	2.700%	3.000%	2.000%
63	1.367%	2.418%	2.418%	2.500%	2.700%	3.000%	2.100%
64	1.433%	2.418%	2.418%	2.500%	2.700%	3.000%	2.200%
65	1.500%	2.418%	2.418%	2.500%	2.700%	3.000%	2.300%
66	1.500%	2.418%	2.418%	2.500%	2.700%	3.000%	2.400%
67	1.500%	2.418%	2.418%	2.500%	2.700%	3.000%	2.500%
Member Contribution Rate							
	2%	7%	7%	8%	8%	8%	≈6%



Age	2% @ 55	2% @ 50	3% @ 55	3% @ 50	PEPRA 2% @ 57	PEPRA 2.5% @ 57	PEPRA 2.7% @ 57
50	1.426%	2.00%	2.40%	3.00%	1.43%	2.00%	2.00%
51	1.522%	2.14%	2.52%	3.00%	1.51%	2.07%	2.10%
52	1.628%	2.28%	2.64%	3.00%	1.59%	2.14%	2.20%
53	1.742%	2.42%	2.76%	3.00%	1.67%	2.21%	2.30%
54	1.866%	2.56%	2.88%	3.00%	1.75%	2.29%	2.40%
55	2.00%	2.70%	3.00%	3.00%	1.84%	2.36%	2.50%
56	2.00%	2.70%	3.00%	3.00%	1.92%	2.43%	2.60%
57	2.00%	2.70%	3.00%	3.00%	2.00%	2.50%	2.70%
58	2.00%	2.70%	3.00%	3.00%	2.00%	2.50%	2.70%
59	2.00%	2.70%	3.00%	3.00%	2.00%	2.50%	2.70%
60	2.00%	2.70%	3.00%	3.00%	2.00%	2.50%	2.70%
				Member Contribution Rate			
	7%	9%	9%	9%	≈8.4%	≈10.0%	≈10.5%

DEFINITIONS

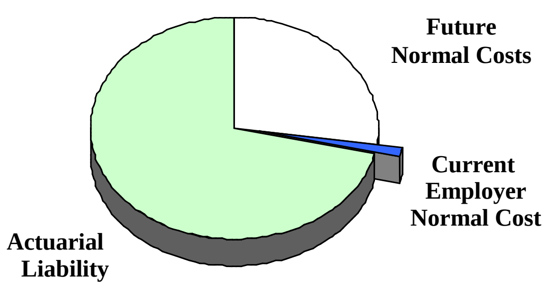
Understanding these terms makes it easier to understand the City's CalPERS actuarial information.

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, 2011). 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, 2011 valuation generates an agency's 2013/14 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, 2011 valuation can use super-surplus to pay 2013/14 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.