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March 22, 2012

Ms. Marilyn Leedom Chief Executive Officer Contra Costa County Employees' Retirement Association 1355 Willow Way, Suite 221 Concord, CA 94520 John W. Monroe, ASA, MAAA, EA Vice President & Associate Actuary jmonroe@segalco.com



Re:

Contra Costa County Employees' Retirement Association
Five-Year Projection of Employer Contribution Rate Changes
Based on Estimated 2.7% Gross Market Value Investment Return for 2011

Dear Marilyn:

As requested, we have updated our five-year projection of estimated employer contribution rate changes for CCCERA. This projection is derived from the December 31, 2010 actuarial valuation results and incorporates an estimated gross market value investment return of 2.7% for the 2011 calendar year. Key assumptions and methods are detailed below.

Results

The estimated contribution rate changes shown on the next page apply to the recommended average employer contribution rate. For purposes of this projection, the rate changes are assumed to be from asset gains and losses that are funded as a level percentage of the Association's total active payroll base. The asset gains and losses are due to: (1) deferred gains and losses from the actuarial asset smoothing methodology; (2) losses due to investment income not earned on the difference between the Actuarial Value of Assets (AVA) and Market Value of Assets (MVA); and (3) contribution gains and losses which occur from delaying the implementation of new rates until 18 months after the actuarial valuation date.

The following table provides the year-to-year rate changes from each of the above causes and the cumulative rate change over the five-year projection period. To obtain the estimated average employer contribution rate at each successive valuation date, these cumulative rate changes should be added to the rates developed from the December 31, 2010 valuation. These rate changes become effective 18 months following the actuarial valuation date shown in the table.

Benefits, Compensation and HR Consulting Offices throughout the United States and Canada

The rate changes shown below represent the <u>average</u> rate for the aggregate plan.

Rate Change	Valuation Date (12/31)								
Component	2011	2012	2013	2014	2015				
(1) Deferred (Gains)/Losses	2.64%	3.15%	0.51%	-0.36%	0.06%				
(2) Loss of Investment Income on Difference Between AVA and MVA	0.27%	0.29%	0.04%	0.01%	0.03%				
(3) 18 Month Rate Delay	0.48%	0.41%	0.42%	0.22%	0.03%				
Incremental Rate Change	3.39%	3.85%	0.97%	-0.13%	0.12%				
Cumulative Rate Change	3.39%	7.24%	8.21%	8.08%	8.20%				

The rate change for an individual cost group or employer will vary depending primarily on the size of that group's assets and liabilities relative to its payroll. The ratio of the group's assets to payroll is sometimes referred to as the volatility index (VI). A higher VI results in more volatile contributions and can result from the following factors:

- > More generous benefits
- > More retirees
- > Older workforce
- > Shorter careers
- ➤ Issuance of Pension Obligation Bonds (POBs)

The attached exhibit shows the VI for CCCERA's cost groups along with the "relative VI" which is the VI for that specific cost group divided by the average VI for the aggregate plan. Using these ratios we have estimated the rate change due to these generally investment related net losses for each individual cost group by multiplying the rate changes shown above for the aggregate plan by the relative VI for each cost group. These estimated rate changes for each cost group are shown in the attached exhibit.

Note that because we have estimated the allocation of the rate changes across the cost groups, the actual rate changes by group may differ from those shown in the exhibit, even if the planwide average rate changes are close to those shown above.

Key Assumptions and Methods

The projection is based upon the following assumptions and methods:

- > December 31, 2010 non-economic assumptions remain unchanged.
- > December 31, 2010 retirement benefit formulas remain unchanged.
- > December 31, 2010 1937 Act statutes remain unchanged.
- ➤ UAAL amortization method remains unchanged (i.e., 18-year layers, level percent of pay).
- ➤ December 31, 2010 economic assumptions remain unchanged, including the 7.75% investment earnings assumption.
- > The gross market value investment return of 2.7% during 2011 was reduced by an estimated 0.6% to account for investment and administrative expenses.
- > Deferred investment gains and losses are recognized per the asset smoothing schedule prepared by the Association as of June 30, 2011. In addition, the estimated investment loss for the second half of 2011 is also recognized over a five-year period. They are funded as a level percentage of the Association's total active payroll base.
- > We have assumed that returns of 7.75% are earned on a market value basis for each of the next four years after 2011.
- > Deferred investment gains are all applied directly to reduce the UAAL. Note that this assumption may not be entirely consistent with the details of the Board's Interest Crediting and Excess Earnings Policy.
- > Active payroll grows at 4.25% per annum.
- ➤ The VI used for these projections is based on the December 31, 2010 Actuarial Valuation and is assumed to stay constant during the projection period.
- ➤ All other actuarial assumptions used in the December 31, 2010 actuarial valuation are realized.

> No changes are made to actuarial methodologies, such as adjusting for the contribution rate delay in advance.

Finally, we emphasize that projections, by their nature, are not a guarantee of future results. The modeling projections are intended to serve as illustrations of future financial outcomes that are based on the information available to us at the time the modeling is undertaken and completed, and the agreed-upon assumptions and methodologies described herein. Emerging results may differ significantly if the actual experience proves to be different from these assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

Unless otherwise noted, all of the above calculations are based on the December 31, 2010 actuarial valuation results including the participant data and actuarial assumptions on which that valuation was based. That valuation and these projections were completed under the supervision of John Monroe, ASA, MAAA, Enrolled Actuary.

Please let us know if you have any questions.

Sincerely,

John Monroe

AW/bqb Enclosure

cc: Kurt Schneider

Contra Costa County Employees' Retirement Association Estimated Employer Rate Change by Cost Group (CG) Based on December 31, 2010 Valuation with Estimated 2.7% Gross Market Value Return for 2011

#\$ CG#6 need Non-Enhanced PPD District	4.00,138 8.60 1.18 4.00% 4.54% 1.14% 0.14% 4.00% 8.54% 9.53% 9.53%	#111 CG#12 Total anced Non-Enthanced Plan m Valley FD Rodeo-Hercutes FPD Safety Tier A Ssf013,007,758 \$194,942,706 \$19,941,536 \$5,013,007,758 \$194,942,706 \$2,257,925 \$687,443,206 \$4,31	1.16		3.92% 4.45% 1.12% -0.15% 0.14%	3.92% 4.45% 1.12% -0.15% 0.14%	3.92% 4.45% 1.12% -0.15% 3.92%	3.92% 4.45% 1.12% -0.15% 6.14% 3.92% 8.37%	3.92% 4.45% 1.12% -0.15% 6.14% 3.92% 8.37% 9.49%	3.92% 4.45% 1.12% -0.15% 6.14% 8.37% 8.37%	3.92% 4.45% 1.12% -0.15% 0.14% 3.92% 8.37% 9.49%	3.92% 4.45% 1.12% -0.15% 6.14% 3.92% 8.37% 9.49%	3.92% 4.45% 1.12% -0.15% 6.14% 8.37% 8.37% 9.49% 9.48%
CG#4 CG#5 Enhanced Enhanced Rousing Authority CCCFPD Tier I Tier I	2.84% 0.84 2.84% 0.81% 0.10% 0.10% 0.10% 6.06% 6.76% 6.86%	CG#10 Enhanced Moraga-Orinda FD Saley Tier A \$115,535,117 \$7,894,991 14.63	2,01	6.80%	7.73% 1.95% -0.26% 0.24%	7.73% 1.95% -0.26% 0.24%	7.73% 1.95% 0.26% 6.80%	7,73% 1,95% 0,24% 6,80% 14,53%	7.73% 1.95% -0.26% 0.24% 6.80% 14.53% 16.48%	7.73% 1.95% -0.26% 0.24% 6.80% 14.53%	7.73% 1.95% -0.26% 0.24% 6.80% 14.53% 16.25%	7.73% 1.95% -0.26% 0.24% 6.80% 14.53% 16.48%	7.73% 1.95% -0.26% 0.24% 6.80% 14.53% 16.48% 16.48%
CC#3 Eubanced CCC Sanitary District Tier 1	\$167,463,823 \$24,455,315 6.85 0.94 3.18% 6.91% 0.11% 0.11% 6.80% 7.71% 7.71% 7.71%	CG#8 Enhanced CCCCPPD/East CCCPPD Safety Tier A \$542,267,640 \$37,147,936	2.37	8.04%	2.30% -0.31% 0.28%	2.30% 2.30% -0.31% 0.28%	2.30% 2.30% -0.31% 0.28% 8.04%	2.30% 2.30% -0.31% 0.28% 8.04% 17.17%		your same s	The state was	1 yes yes	1 100 100 100 100
CG#1 & CG#2 Combined Enhanced General Tier 1 & 3	\$2,764,282,879 \$498,826,811 \$.54 0.76 0.76 0.74% 0.09% 5.51% 6.09% 6.15% 6.15%	CG#7 & CG#9 Combined Enhanced County Safety Tier A & C \$1,038,603,813	1,63	5.53%	1.58% -0.21% 0.20%	1.58% -0.21% 0.20%	1.38% -0.21% 0.20% 5.53%	5.53%	1.28% -0.21% 0.20% 5.53% 11.81% 13.39%	1.38% -0.21% 0.20% 5.53% 11.81% 13.39%	1.38% -0.21% 0.20% 5.53% 11.81% 13.18%	1.28% -0.21% 0.20% 5.53% 11.81% 13.39%	5.53% 13.89% 13.89% 13.88%
	Market Value of Assets (MVA)* Projected Payroll for 2011 Volatility Index (VI) = MVA/Payroll Relative Volatility Index (VI) = CG VI / Total Plan VI Estimated Incremental Rate Change as of 12/31/2011 Estimated Incremental Rate Change as of 12/31/2012 Estimated Incremental Rate Change as of 12/31/2013 Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2014 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2012 Cumulative Rate Change as of 12/31/2013 Cumulative Rate Change as of 12/31/2013 Cumulative Rate Change as of 12/31/2013 Cumulative Rate Change as of 12/31/2013	Market Value of Assets (MVA)* Projected Payroll for 2011 Volatifite, Indey (VI) = MVA/Payroll	Relative Volatility Index (VI) = $CG VI / Total Plan VI$	Estimated Incremental Rate Change as of 12/31/2011 Estimated Incremental Rate Change as of 12/31/2012 Estimated Incremental Rate Change as of 12/31/2013	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015 Cumulative Rate Change as of 12/31/2011	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2011	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2012 Cumulative Rate Change as of 12/31/2012	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2012	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2012 Cumulative Rate Change as of 12/31/2013 Cumulative Rate Change as of 12/31/2014	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2012 Cumulative Rate Change as of 12/31/2012 Cumulative Rate Change as of 12/31/2013	Estimated Incremental Rate Change as of 12/31/2014 Estimated Incremental Rate Change as of 12/31/2015 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2011 Cumulative Rate Change as of 12/31/2012 Cumulative Rate Change as of 12/31/2014 Cumulative Rate Change as of 12/31/2014

^{*} Excludes Post Refirement Death Benefit reserve and is based on December 31, 2010 Actuarial Valuation. ** Based on December 31, 2010 Actuarial Valuation.

These rates do not include any employer subvention of member contributions or any member subvention of employer contributions.