

**VENTURA COUNTY EMPLOYEES'
RETIREMENT ASSOCIATION**

**Review of Economic Actuarial Assumptions
for the June 30, 2015 Actuarial Valuation**



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April 14, 2015

Board of Retirement
Ventura County Employees' Retirement Association
1190 South Victoria Avenue, Suite 200
Ventura, CA 93003-6572

**Re: Review of Economic Actuarial Assumptions
For the June 30, 2015 Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit this report of our review of the June 30, 2015 economic actuarial assumptions for the Ventura County Employees' Retirement Association. This report includes our recommendations and the analysis supporting their development.

Please note that we have also reviewed the non-economic actuarial experience for the three-year period from July 1, 2011 to June 30, 2014. The non-economic actuarial assumption recommendations are provided in a separate report.

We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

We look forward to reviewing this report with you and answering any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Angelo".

Paul Angelo, FSA, EA, MAAA, FCA
Senior Vice President and Actuary

A handwritten signature in black ink, appearing to read "John Monroe".

John Monroe, ASA, EA, MAAA
Vice President and Actuary

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I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the pension fund, assumptions are made about all future events that could affect the amount and timing of the benefits to be paid and the assets to be accumulated. Each year actual experience is compared against the projected experience, and to the extent there are differences, the future contribution requirement is adjusted.

If assumptions are changed, contribution requirements are adjusted to take into account a change in the projected experience in all future years. There is a great difference in both philosophy and cost impact between recognizing the actuarial deviations as they occur annually and changing the actuarial assumptions. Taking into account one year's gains or losses without making a change in the assumptions in effect assumes that the experience is treated as temporary and that, over the long run, experience is expected to return to what was originally assumed. Changing assumptions reflects a basic change in thinking about the future, and it has a much greater effect on the current contribution requirements than the gain or loss for a single year.

The use of realistic actuarial assumptions is important to maintain adequate funding, while fulfilling benefit commitments to participants already retired and to those near retirement. The actuarial assumptions do not determine the "actual cost" of the plan. The actual cost is determined solely by the benefits and administrative expenses paid out, offset by investment income received. However, it is desirable to estimate as closely as possible what the actual cost will be so as to permit an orderly method for setting aside contributions today to provide benefits in the future, and to maintain equity among generations of participants and taxpayers.

This study was undertaken in order to review the economic actuarial assumptions. The study was performed in accordance with Actuarial Standard of Practice (ASOP) No. 27,¹ "Selection of Economic Assumptions for Measuring Pension Obligations." This Standard of Practice puts forth guidelines for the selection of the economic actuarial assumptions utilized in a pension plan actuarial valuation.

¹ ASOP No. 27 was revised in September 2013 effective for measurement dates on or after September 30, 2014. Since the recommendations developed herein are intended for use starting with the June 30, 2015 valuation, this study was performed in accordance with ASOP 27 as constituted after the 2013 revisions to the ASOP.

We are recommending changes in the investment return, inflation and “across the board” salary increase assumptions. Our recommendations for the economic actuarial assumptions for the June 30, 2015 Actuarial Valuation are as follows:

Inflation – Future increases in the Consumer Price Index (CPI) which drives investment returns and active member salary increases, as well as cost-of-living adjustments (COLAs) for retirees.

Recommendation: *Reduce the assumed rate of price inflation from 3.25% to 3.00% per annum.*

Investment Return – The estimated average future net rate of return on current and future assets of the Association as of the valuation date. This rate is used to discount liabilities.

Recommendation: *Reduce the current investment return assumption from 7.75% per annum to 7.50% per annum. The 7.50% recommendation would be consistent with the Board’s past practice of having a margin for adverse deviation under the risk adjusted model used by Segal. We further recommend changing to an explicit treatment of administrative expenses in the selection of an investment return assumption for use both in funding and in financial reporting required by the Governmental Accounting Standards Board (GASB).*

Individual Salary Increases – Increases in the salary of a member between the date of the valuation to the date of separation from active service. This assumption has three components:

- Inflationary salary increases,
- Real “across the board” salary increases, and
- Promotional and merit increases.

Recommendation: *Reduce the current inflationary salary increase assumption from 3.25% to 3.00% and reduce the current real “across the board” salary increase assumption from 0.75% to 0.50%. This means that the combined inflationary and real “across the board” salary increases will decrease from 4.00% to 3.50%. Please note that the promotional and merit increase assumption currently ranges from 0.50% to 8.00% and is a function of a member’s years of service. The proposed promotional and merit increase assumptions are provided as part of our triennial experience study of non-economic assumptions, along with the other recommended non-economic assumptions for the June 30, 2015 valuation.*

Section II provides some background on basic principles and the methodology used for the review of the economic actuarial assumptions. A detailed discussion of each of the economic assumptions and reasons behind the recommendations is found in Section III. The cost impact of these proposed changes is included in our separate analysis of the “non-economic” assumptions for the June 30, 2015 valuation.

II. BACKGROUND AND METHODOLOGY

For this study, we analyzed “economic” assumptions only. Our analysis of the “non-economic” assumptions for the June 30, 2015 valuation is provided in a separate report. The primary economic assumptions are inflation, investment return and salary increases.

Economic Assumptions

Economic assumptions consist of:

Inflation – Increases in the price of goods and services. The inflation assumption reflects the basic return that investors expect from securities markets. It also reflects the expected basic salary increase for active employees and drives increases in the allowances of retired members.

Investment Return – Expected long term rate of return on the Association’s investments after expenses. This assumption has a significant impact on contribution rates.

Salary Increases – In addition to inflationary increases, it is assumed that salaries will also grow by “across the board” real pay increases in excess of price inflation. It is also assumed that employees will receive raises above these average increases as they advance in their careers. These are commonly referred to as promotional and merit increases. Payments to amortize any Unfunded Actuarial Accrued Liability (UAAL) are assumed to increase each year by the price inflation rate plus any “across the board” real pay increases that are assumed.

The setting of these assumptions is described in Section III.

III. ECONOMIC ASSUMPTIONS

A. INFLATION

Unless an investment grows at least as fast as prices increase, investors will experience a reduction in the inflation-adjusted value of their investment. There may be times when “riskless” investments return more or less than inflation, but over the long term, investment market forces will generally require an issuer of fixed income securities to maintain a minimum return which protects investors from inflation.

The inflation assumption is long term in nature, so it is set using primarily historical information. Following is an analysis of 15 and 30 year moving averages of historical inflation rates:

Historical Consumer Price Index – 1930 to 2014

	<u>25th Percentile</u>	<u>Median</u>	<u>75th Percentile</u>
15-year moving averages	2.6%	3.4%	4.6%
30-year moving averages	3.2%	4.1%	4.9%

The average inflation rates have continued to decline gradually over the last several years due to the relatively low inflationary period over the past two decades. Also, the later of the 15-year averages during the period are lower as they do not include the high inflation years of the mid-1970s and early 1980s.

In the 2013 public fund survey published by the National Association of State Retirement Administrators, the median inflation assumption used by 126 large public retirement funds in their 2012 valuations has decreased to 3.00% from the 3.25% used in the 2011 valuations. In California, CalPERS and LACERA have recently reduced their inflation assumptions to 2.75% and 3.00%, respectively.

VCERA’s investment consultant, New England Pension Consultants (NEPC), anticipates an annual inflation rate of 3.25%. Note that, in general, the investment consultants’ time horizon for this assumption is shorter than the time horizon we use for the actuarial valuation. We also note that the average inflation rate used by a sample of nine investment advisory firms is 2.53%.

To find a forecast of inflation based on a longer time horizon, we referred to the 2014 report on the financial status of the Social Security program. The projected average increase in the Consumer Price Index (CPI) over the next 75 years under the intermediate cost assumptions used in that report was 2.70%. We also compared the yields on the thirty-year inflation indexed U.S. Treasury bonds to comparable

traditional U.S. Treasury bonds. As of January 2015, the difference in yields is 1.92%, which provides a measure of market expectations of inflation.

Based on all of the above information, we recommend that the current 3.25% annual inflation assumption be reduced to 3.00% for the June 30, 2015 actuarial valuation.

Retiree Cost-of-Living Increases

We also recommend maintaining the current assumptions to value the post-retirement COLA benefit at 3.00% per year for all General Tier 1 and Safety members. Note that General Tier 2 members with COLA provision are entitled to receive a fixed 2% COLA, not limited to actual changes in the CPI, that applies to future service after March 2003. The current and proposed COLA assumptions are shown below:

Maximum COLA for all General Tier 1 and Safety Members	Current Assumption	Proposed Assumption
3.00%	3.00%	3.00%

Note that in developing the COLA assumption, we also considered the results of a stochastic approach that would attempt to account for the possible impact of low inflation that could occur before COLA banks are able to be established for the member. Although the results of this type of analysis might justify the use of a lower COLA assumption, we are not recommending that at this time. The reasons for this conclusion include the following:

- The results of the stochastic modeling are significantly dependent on assuming that lower levels of inflation will persist in the early years of the projections. If this is not assumed, then the stochastic modeling will produce results similar to our proposed COLA assumptions.
- Using a lower long-term COLA assumption based on a stochastic analysis would mean that an actuarial loss would occur even when the inflation assumption of 3.00% is met in a year. We question the reasonableness of this result.

We do not see the stochastic possibility of COLAs averaging less than those predicted by the assumed rate of inflation as a reliable source of cost savings that should be anticipated in our COLA assumptions. Therefore, we continue to recommend setting the COLA assumptions based on the long-term annual inflation assumption, as we have in prior years.

B. INVESTMENT RETURN

The investment return assumption is comprised of two primary components, inflation and real rate of investment return, with adjustments for expenses and risk.

Real Rate of Investment Return

This component represents the portfolio's incremental investment market returns over inflation. Theory has it that, as an investor takes a greater investment risk, the return on the investment is expected to also be greater, at least in the long run. This additional return is expected to vary by asset class and empirical data supports that expectation. For that reason, the real rate of return assumptions are developed by asset class. Therefore, the real rate of return assumption for a retirement system's portfolio will vary with the Board's asset allocation among asset classes.

The following is the Association's current target asset allocation and the assumed real rate of return assumptions by asset class. The first column of real rate of return assumptions are determined by reducing NEPC's total return assumptions by their assumed 3.25% for inflation. The second column of returns (except for Private Debt/Credit Strategies, Absolute Return, Real Assets and Private Equity) represents the average of a sample of real rate of return assumptions. The sample includes the expected annual real rate of returns provided to us by NEPC and by eight other investment advisory firms retained by Segal's California public sector clients. We believe these assumptions reasonably reflect a consensus forecast of long term future real market returns.²

² Note that, just as for the inflation assumption, in general the time horizon used by the investment consultants in determining the real rate of return assumption is shorter than the time horizon encompassed by the actuarial valuation.

**VCERA’s Target Asset Allocation and Assumed Arithmetic Real Rate of Return
Assumptions by Asset Class and for the Portfolio**

<u>Asset Class</u>	<u>Percentage of Portfolio</u>	<u>NEPC’s Assumed Real Rate of Return⁽¹⁾</u>	<u>Average Real Rate of Return from a Sample of Consultants to Segal’s California Public Sector Clients⁽²⁾</u>
Large Cap U.S. Equity	27.74%	5.58%	5.90%
Small Cap U.S. Equity	3.41%	6.39%	6.60%
Developed International Equity	14.73%	6.60%	6.95%
Emerging Market Equity	3.12%	8.80%	8.44%
U.S. Core Fixed Income	14.00%	0.97%	0.71%
Real Estate	7.00%	4.25%	4.65%
Private Debt/Credit Strategies	5.00%	6.01%	6.01% ⁽³⁾
Absolute Return (Risk Parity) ⁽⁴⁾	16.00%	4.13%	4.13% ⁽³⁾
Real Assets (Master Limited Partnerships) ⁽⁴⁾	4.00%	6.51%	6.51% ⁽³⁾
Private Equity	<u>5.00%</u>	<u>9.25%</u>	<u>9.25%⁽³⁾</u>
Total Portfolio	100.00%	5.13%	5.26%

⁽¹⁾ *Derived by reducing NEPC’s nominal rate of return assumptions by their assumed 3.25% inflation rate.*

⁽²⁾ *These are based on the projected arithmetic real returns provided by the investment advisory firms serving the county retirement systems of Ventura, Alameda, Contra Costa, Sonoma, Mendocino, Kern, the LA City Employees’ Retirement System, LA Department of Water and Power and the LA Fire & Police Pensions. These return assumptions are gross of any applicable investment expenses.*

⁽³⁾ *For these asset classes, NEPC’s assumption is applied in lieu of the average because there is a larger disparity in returns for these asset classes among the firms surveyed and using NEPC’s assumption should more closely reflect the underlying investments made specifically for VCERA.*

⁽⁴⁾ *These are categorized as “Liquid Alternatives” when reported to VCERA by NEPC.*

Please note that the above are representative of “indexed” returns and do not include any additional returns (“alpha”) from active management. This is consistent with the revised Actuarial Standard of Practice No. 27, Section 3.8.3.d, which states:

“Investment Manager Performance – Anticipating superior (or inferior) investment manager performance may be unduly optimistic (or pessimistic). The actuary should not assume that superior or inferior returns will be achieved, net of investment expenses, from an active investment management strategy compared to a passive investment management strategy unless the actuary

believes, based on relevant supporting data, that such superior or inferior returns represent a reasonable expectation over the measurement period.”

The following are some observations about the returns provided above:

1. The investment consultants to our California public sector clients have each provided us with their expected real rates of return for each asset class, over various future periods of time. However, in general, the returns available from investment consultants are projected over time periods shorter than the durations of a retirement plan’s liabilities.
2. Using a sample average of expected real rate of returns allows the Association’s investment return assumption to reflect a broader range of capital market information and should help reduce year to year volatility in the investment return assumption.
3. Therefore, we recommend that the 5.26% portfolio real rate of return be used to determine the Association’s investment return assumption. This is 0.05% lower than the return we used in 2012 to prepare the recommended investment return assumption. This difference is due to changes in the Association’s target asset allocation (+0.33%) and changes in the real rate of return assumptions provided to us by the investment advisory firms (-0.38%).

Association Expenses

For funding purposes, the real rate of return assumption for the portfolio needs to be adjusted for investment expenses expected to be paid from investment income. As further discussed later in this report, current practice for VCERA also adjusts for expected administrative expenses. The following table provides these expenses in relation to the actuarial value of assets for the five years ending June 30, 2014.

Administrative and Investment Expenses as a Percentage of Actuarial Value of Assets
(All dollars in 000's)

FYE	Actuarial Value of Assets ⁽¹⁾	Administrative Expenses	Investment Expenses ⁽²⁾	Administrative %	Investment %	Total %
2010	\$3,134,978	\$4,081	\$6,256	0.13%	0.20%	0.33%
2011	3,236,217	4,387	7,404	0.14	0.23	0.36
2012	3,411,149	3,505	9,103	0.10	0.27	0.37
2013	3,633,626	3,944	9,901	0.11	0.27	0.38
2014	3,964,814	4,045	12,877	<u>0.10</u>	<u>0.32</u>	<u>0.43</u>
Average				0.12%	0.26%	0.37%

⁽¹⁾ *As of end of plan year.*

⁽²⁾ *Excludes securities lending expenses. Because we do not assume any additional net return for this program, we effectively assume that any securities lending expenses will be offset by related income.*

The average expense percentage over this five-year period is 0.37%. Based on this experience, we have maintained the future expense assumption component at 0.40%. This assumption will be re-examined in subsequent assumption reviews as new data becomes available.

Note related to investment expenses paid to active managers – As cited in footnote 3, the 2014 revision to ASOP No. 27 indicates that the effect of an active investment management strategy should be considered “net of investment expenses”.

We have not performed a detailed analysis to measure how much of the investment expenses paid to active managers might have been offset by additional returns (“alpha”) earned by that active management. We do not believe that such a review would have a significant impact on the recommended investment return assumption developed using the above expense assumption. For now, we propose that any alpha that may be identified would be treated as an increase in the risk adjustment and corresponding confidence level. For example, 0.25% of alpha would increase the confidence level by 3% (see discussions that follow on definitions of risk adjustment and confidence level).

Adjustment to Exclude Administrative Expenses in Developing Investment Return Assumption for use in GASB Financial Reporting

In 2012, GASB adopted Statements 67 and 68 that replace Statements 25 and 27 for financial reporting purposes. GASB Statements 67 and 68 are effective for plan year 2013/2014 for the Retirement Association and fiscal year 2014/2015 for the employer.³

According to GASB, the investment return assumption for use in financial reporting purposes should be based on the long-term expected rate of return on a retirement system's investments and should be net of investment expenses but not of administrative expenses (i.e., without reduction for administrative expenses). As can be observed from the above development of the expense assumption, if the Board wishes to develop a single investment return assumption for both funding and financial reporting purposes, then it would be necessary to exclude the roughly 0.12% administrative expense from the above development and to develop a separate treatment of administrative expenses.

The issues associated with eliminating the consideration of administrative expenses when developing the investment return assumption used for funding, and the alternatives that are available to the Board in developing the investment return assumption for use in GASB financial reporting purposes are provided at the end of this Section. While we do recommend that the Board adopt an investment return for funding that is gross of administrative expenses (as discussed in the end of this Section), the preliminary discussion that follows has first been completed on a net of administrative expenses basis, to allow an "apples to apples" comparison with the current assumption.

Risk Adjustment

The real rate of return assumption for the portfolio generally is adjusted to reflect the potential risk of shortfalls in the return assumptions. The Association's asset allocation also determines this portfolio risk, since risk levels are driven by the variability of returns for the various asset classes and the correlation of returns among those asset classes. This portfolio risk is incorporated into the real rate of return assumption through a risk adjustment.

³ The new Statements (67 and 68) will require more rapid recognition for investment gains or losses and much shorter amortization for actuarial gains or losses. Because of the more rapid recognition of those changes, retirement systems that have generally utilized the previous Statements (25 and 27) as a guideline to establish the employer's contribution amounts for both funding and financial reporting purposes would now have to prepare two sets of cost results, one for contributions and one for financial reporting under the new Statements.

The purpose of the risk adjustment (as measured by the corresponding confidence level) is to increase the likelihood of achieving the actuarial investment return assumption in the long term.⁴ The 5.26% expected real rate of return developed earlier in this report was based on expected mean or average arithmetic returns. This means there is a 50% chance of the actual return in each year being at least as great as the average (assuming a symmetrical distribution of future returns). The risk adjustment is intended to increase that probability. This is consistent with our experience that retirement plan fiduciaries would generally prefer that returns exceed the assumed rate more often than not.

Three years ago, the Board adopted an investment return assumption of 7.75%. That return implied a risk adjustment of 0.41%, reflecting a confidence level of 54% that the actual average return over 15 years would not fall below the assumed return, assuming that the distribution of returns over that period follows the normal statistical distribution.⁵

In our model, the confidence level associated with a particular risk adjustment represents the likelihood that the actual average return would equal or exceed the assumed value over a 15-year period. For example, if we set our real rate of return assumption using a risk adjustment that produces a confidence level of 60%, then there would be a 60% chance (6 out of 10) that the average return over 15 years will be equal to or greater than the assumed value. The 15-year time horizon represents an approximation of the “duration” of the fund’s liabilities, where the duration of a liability represents the sensitivity of that liability to interest rate variations.

If we use the same confidence level of 54% to set this year’s risk adjustment, based on the current long-term portfolio standard deviation of 12.69% provided by NEPC, the corresponding risk adjustment would be 0.34%. Together with the other investment return components, this produces a net investment return assumption of 7.52%, which is lower than the current assumption of 7.75%.

Based on the general practice of using one-quarter percentage point increments for economic assumptions, we evaluated the effect on the confidence level of an alternative investment return assumption. In particular, a net investment return assumption of 7.50%, together with the other investment return components, would produce a risk adjustment of 0.36%, which corresponds to a confidence level of 54%.

⁴ This type of risk adjustment is sometimes referred to as a “margin for adverse deviation”.

⁵ Based on an annual portfolio return standard deviation of 13.50% provided by Hewitt Ennis Knupp in 2012. Strictly speaking, future compounded long-term investment returns will tend to follow a log-normal distribution. However, we believe the Normal distribution assumption is reasonable for purposes of setting this type of risk adjustment.

As we have discussed in prior years, the risk adjustment model and associated confidence level is most useful as a means for comparing how the Association has positioned itself relative to risk over periods of time.⁶ The use of a 54% confidence level should be considered in context with other factors, including:

- As noted above, the confidence level is more of a relative measure than an absolute measure, and so can be reevaluated and reset for future comparisons.
- The confidence level is based on the standard deviation of the portfolio that is determined and provided to us by NEPC. The standard deviation is a statistical measure of the future volatility of the portfolio and so is itself based on assumptions about future portfolio volatility and can be considered somewhat of a “soft” number.
- A lower assumed level of inflation should reduce the overall risk of failing to meet the investment return assumption. Maintaining or even lowering the confidence level to some extent could be justified as consistent with the change in the inflation assumption.
- As with any model, the results of the risk adjustment model should be evaluated for reasonableness and consistency. This is discussed in the later section on “Comparison with Other Public Retirement Systems”.

Taking into account the factors above, our preliminary recommendation is to reduce the net investment return assumption from 7.75% to 7.50%. As noted above, this return implies a 0.36% risk adjustment, reflecting a confidence level of 54% that the actual average return over 15 years would not fall below the assumed return.

⁶ In particular, it would not be appropriate to use this type of risk adjustment as a measure of determining an investment return rate that is “risk-free.”

Preliminary Recommended Investment Return Assumption

The following table summarizes the components of the preliminary investment return assumption developed in the previous discussion. For comparison purposes, we have also included similar values from the last study.

Calculation of Net Investment Return Assumption		
<u>Assumption Component</u>	<u>June 30, 2015 Preliminary Recommended Value</u>	<u>June 30, 2012 Adopted Value</u>
Inflation	3.00%	3.25%
Plus Portfolio Real Rate of Return	5.26%	5.31%
Minus Expense Adjustment	(0.40%)	(0.40%)
Minus Risk Adjustment	<u>(0.36%)</u>	<u>(0.41%)</u>
Total	7.50%	7.75%
Confidence Level	54%	54%

Based on this analysis, our preliminary recommendation is that the investment return assumption be reduced from 7.75% per annum to 7.50% per annum. Our final recommendation follows later in this section after discussion regarding a change in how expected administration expenses are handled.

Comparison with Other Public Retirement Systems

One final test of the recommended investment return assumption is to compare it against those used by other public retirement systems, both in California and nationwide.

We note that a 7.50% investment return assumption is emerging as the common assumption among those California public sector retirement systems that have studied this assumption recently. In particular two of the largest California systems, CalPERS and LACERA, adopted a 7.50% earnings assumption. Note that CalPERS uses a lower inflation assumption of 2.75% while LACERA uses an inflation assumption of 3.00%. However, five County employees retirement systems (Orange, Contra Costa, Fresno, Mendocino and San Mateo) have recently adopted a 7.25% earnings assumption.

The following table compares the VCERA recommended net investment return assumptions against those of the nationwide public retirement systems that participated in the National Association of State Retirement Administrators (NASRA) 2013 Public Fund Survey:

Assumption	VCERA	NASRA 2013 Public Fund Survey		
		Low	Median	High
Net Investment Return	7.50%	6.50%	7.90%	8.50%

The detailed survey results show that of the systems that have an investment return assumption in the range of 7.50% to 7.90%, almost half of those systems have used an assumption of 7.50%. The survey also notes that several plans have reduced their investment return assumption during the last year, and others are considering doing so. State systems outside of California tend to change their economic assumptions slowly and so may lag behind emerging practices in this area.

In summary, we believe that both the risk adjustment model and other considerations indicate a lower earnings assumption. The recommended assumption of 7.50% continues to provide for some risk margin within the risk adjustment model as compared to three years ago and is consistent with the Association's current practice relative to other public systems.

Developing an Investment Return Assumption for use in Accounting and Financial Reporting under GASB Statement 67 and 68

The Governmental Accounting Standards Board (GASB) has adopted Statements 67 and 68 that replace Statements 25 and 27 for financial reporting purposes. We now discuss the issues and policy alternatives available to VCERA in developing its investment return assumptions in a manner that will allow the Plan to maintain consistency in its liability measurements for funding and financial reporting purposes.

Background

GASB Statement 67 governs the Plan's financial reporting and is effective for plan year 2013/2014, while GASB Statement 68 governs the employers' financial reporting and is effective for fiscal year 2014/2015. The new Statements specify requirements for measuring both the pension liability and the annual pension expense incurred by the employers. The new GASB requirements are only for financial reporting and do not affect how the Plan determines funding requirements for its employer. Nonetheless, it is important to understand how the new financial reporting results will compare with the funding requirement results. The comparison between funding and GASB financial reporting results will differ dramatically depending on whether one is considering measures of the accumulated pension liability or measures of the current year annual pension contribution/expense:

- When measuring pension liability GASB will use the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as VCERA uses for funding. This means that the GASB "Total Pension Liability" measure for financial reporting will be determined on generally the same basis as VCERA's "Actuarial Accrued Liability" measure for funding. This is a generally favorable feature of the new GASB rules that should largely preclude the need to explain why VCERA has two different measures of pension liability. We note that the same is generally true for the "Normal Cost" component of the annual plan cost for both funding and financial reporting.
- When measuring annual pension expense, GASB will require more rapid recognition of investment gains or losses and much shorter amortization of changes in the pension liability (whether due to actuarial gains or losses, actuarial assumption changes or plan amendments). Because of GASB's more rapid recognition of those changes, retirement systems that have generally used the same "annual required contribution" amount for both funding (contributions) and financial reporting (pension expense) will now have to prepare and disclose two different annual cost results, one for contributions and one for financial reporting under the new GASB Statements.

This situation will facilitate the explanation of why the funding and financial reporting results are different: the liabilities and Normal Costs are generally the same, and the differences in annual costs are due to differences in how changes in liability are recognized. However, there is one other feature that will make the liability and Normal Cost measures different unless action is taken by VCERA.

Treatment of Expected Administrative Expenses when Measuring Liabilities

As noted above, according to GASB, the discount rate used for financial reporting purposes should be based on the long-term expected rate of return on a retirement system's investments, just as it is for funding. However, GASB requires that this assumption should be net of investment expenses but not net of administrative expenses (i.e., without reduction for administrative expenses). Currently, VCERA's investment return assumption used for the annual funding valuation is developed net of both investment and administrative expenses.

While VCERA could continue to develop its funding investment return assumption net of both investment and administrative expenses, that would mean that the Association would then have two slightly different investment return assumptions, one for funding and one for financial reporting. To avoid this apparent discrepancy and to maintain the consistency of liability and Normal Cost measures described above, we believe that it would be preferable to use the same investment return assumption for both funding and financial reporting purposes. This means that the assumption for funding purposes would be developed on a basis that is net of only investment expenses, with an explicit assumption for administrative expenses.

To review, using the same investment return assumption for both purposes would be easier for VCERA's stakeholders to understand and should result in being able to report VCERA's Actuarial Accrued Liability (AAL) for funding purposes as the Total Pension Liability (TPL) for financial reporting purposes.

Development of Investment Return Assumption For Funding on a Gross of Administrative Expenses Basis so the Same Assumption Can Also Be Used for Financial Reporting ("Option A")

If the Board wishes to develop a single investment return assumption for both funding and financial reporting purposes, then it would be necessary to exclude the administrative expense component of about 0.12% from development of the 7.50% investment return preliminary recommendation. Under this approach, because these economic assumptions are generally changed in ¼% increments, there would be no change in the recommended investment return assumption as developed earlier in this report. Instead, there would be an increase in the risk adjustment of 0.12%, with a corresponding increase in the confidence level from 54% to 55%.

Under this approach, there would also be an explicit loading for administrative expenses. There are various ways to set the explicit administrative expense load assumption, but ultimately the method should result in an assumption that is approximately equivalent to about \$5 million annually, or 0.7% of payroll.

This approach and our final recommendation for the investment return assumption is presented in the following table.

Calculation of Net Investment Return Assumption

Assumption Component	June 30, 2015 Recommended Values if Used only for Funding (Net of Admin. Expenses)	June 30, 2015 Recommended Values for both Funding and Financial Reporting (Gross of Admin. Expenses)
Inflation	3.00%	3.00%
Plus Portfolio Real Rate of Return	5.26%	5.26%
Minus Expense Adjustment	(0.40%)	(0.28%)
Minus Risk Adjustment	<u>(0.36%)</u>	<u>(0.48%)</u>
Total	7.50%	7.50%
Confidence Level	54%	55%
Increase in combined Employer and Employee Contributions Due to Explicit Load for Administrative Expenses (Cost as % of Payroll)	Not Applicable	0.70% of pay

There is an additional complication associated with eliminating the administrative expenses in developing the investment return assumption used for funding that relates to the allocation of administrative expenses between the employers and employees:

1. Even though GASB requires the exclusion of the administrative expenses from the investment return assumption, such expense would continue to accrue for a retirement system. For private sector retirement plans, where the investment return is developed using an approach similar to that required by GASB (i.e., without deducting administrative expenses), contribution requirements are increased explicitly by the anticipated annual administrative expense. That approach is illustrated in the table above.
2. Under VCERA's current approach of subtracting the administrative expense in the development of the investment return assumption, such annual administrative expense is funded implicitly by effectively deducting it from future expected investment returns. Since an investment return

assumption net of investment and administrative expenses has been used historically to establish both the employer's and the employee's contribution requirements, these administrative expenses have been funded implicitly by both the employer and the employees.

3. A switch from the method described in (2) to the method described in (1) may require a new discussion on how to allocate administrative expenses between employers and employees, including possibly establishing a new method to allocate the anticipated annual administrative expense between them. Under current practice, part of the implicit funding of administrative expenses is in the Normal Cost and so is shared between the employer and the employees. However, the rest of the implicit expense funding is in the (Unfunded) Actuarial Accrued Liability, which is funded solely by the employers.
4. It is not straightforward to quantify precisely the current implicit sharing of administrative expenses between employers and employees. This means that an exact reproduction of that allocation on an explicit basis will be difficult to develop. This in turn means that VCERA would need to develop a new basis for sharing the cost of administrative expenses, one that if desired, approximately reproduces the current allocation. Alternatively, VCERA could decide to treat administrative expenses as a loading applied only to the employer contribution rates, which is the practice followed by private plans, both single employer and multi-employer.
5. As the Board is aware, legislative changes under AB 340 imposed major modifications to both the level of benefits and the cost-sharing of the funding of those benefits for county employees' retirement systems. Included in such modifications is the requirement (for future hires) to fund the Normal Cost on a 50:50 basis between the employer and the employee. As noted in (3) above, under current practice, part of the implicit funding of administrative expenses is in the Normal Cost and so would be shared between the employer and the employees. This would not necessarily continue when the administrative expense loading is developed separate from the Normal Cost.

If, as we recommend, the Board wishes to continue to develop a single investment return assumption for both funding and financial reporting purposes, it is our recommendation that the Board adopt a change in the funding of administrative expenses from the method described in (2) above with an implicit allocation of administrative expenses to the method described in (1) above with an explicit allocation of administrative expenses.

In addition, we recommend that the total explicit administrative expense load assumption be set at 0.70% of payroll, which is approximately equivalent to about 0.12% of assets or \$5 million

annually. This assumption would be reviewed with each triennial experience study, along with the other economic assumptions.

The more significant issues mentioned in (3), (4) and (5) above concern whether or not the costs associated with the administrative expenses should continue to be allocated to both the employers and the employees. Unless the Board wishes to charge administrative expenses only to the employers, we propose a method whereby the costs associated with the explicit assumption for administrative expenses continue to be allocated to both employers and employees. We recommend a straightforward way to do that in a manner generally consistent with current practice, which is to allocate expenses based on the components of the total contribution rate (before expenses) for employers and employees. These components would be employee Normal Cost contributions, employer Normal Cost contributions and employer UAAL contributions. **Under this recommended approach, of the total administrative expenses of about \$5 million or 0.70% of payroll, about \$1.1 million or 0.15% of payroll would be allocated to the employees and \$3.9 million or 0.55% of payroll would be allocated to the employers in the aggregate. This allocation would be based on the actual components in each valuation and could change slightly each year.**

Development of Investment Return Assumption for Funding on a Net of Administrative Expenses Basis but use that Same Assumption for Financial Disclosure Development (“Option B”)

If the Board decides to leave the recommended investment return assumption of 7.50% on a net of administrative expense basis for funding purposes, we believe there still is a way to use that same 7.50% for financial reporting purposes under GASB. Under this approach, what appears to be the same 7.50% assumption would actually be used as two slightly different assumptions: 7.50% net of administrative expenses for funding, and 7.50% gross of administrative expenses for financial reporting. This would indirectly result in an increase in the margin for adverse deviation or “confidence level” associated with the use of the recommended 7.50% assumption from 54% as used for funding purposes to 55% only as used for financial reporting purposes.

The Board had previously adopted this Option B on an interim basis last year for use in performing the June 30, 2014 actuarial valuation and the June 30, 2014 GASB 67 report.

The following table summarizes the components of the investment return assumption under this approach, using the recommended 7.50% assumption for both funding (net of administration expenses) and financial reporting (gross of administration expenses), but with differing treatment of administrative expenses:

Calculation of Net Investment Return Assumption

Assumption Component	June 30, 2015 Recommended Values if Used only for Funding (Net of Admin. Expenses)	June 30, 2015 Alternative Values for Financial Reporting (Gross of Admin. Expenses)
Inflation	3.00%	3.00%
Plus Portfolio Real Rate of Return	5.26%	5.26%
Minus Expense Adjustment	(0.40%)	(0.28%)
Minus Risk Adjustment	<u>(0.36%)</u>	<u>(0.48%)</u>
Total	7.50%	7.50%
Confidence Level	54%	55%

Note that under both Option A and Option B the confidence level for financial reporting increases from 54% to 55% (because the risk adjustment increases from 0.36% to 0.48%). The difference is that under Option A the same confidence level increase would apply for funding purposes, along with the addition of an explicit loading on the contribution rates for administrative expenses.

C. SALARY INCREASE

Salary increases impact plan costs in two ways: (i) by increasing members' benefits (since benefits are a function of the members' highest average pay) and future normal cost collections; and (ii) by increasing total active member payroll which in turn generates lower UAAL contribution rates. These two impacts are discussed separately below.

As an employee progresses through his or her career, increases in pay are expected to come from three sources:

1. Inflation – Unless pay grows at least as fast as consumer prices grow, employees will experience a reduction in their standard of living. There may be times when pay increases lag or exceed inflation, but over the long term, labor market forces may require an employer to maintain its employees' standards of living.

As discussed earlier in this report, we are recommending that the assumed rate of inflation be reduced from 3.25% to 3.00%. This inflation component is used as part of the salary increase assumption.

2. Real “Across the Board” Pay Increases – These increases are typically termed productivity increases since they are considered to be derived from the ability of an organization or an economy to produce goods and services in a more efficient manner. As that occurs, at least some portion of the value of these improvements can provide a source for pay increases. These increases are typically assumed to extend to all employees “across the board.” The State and Local Government Workers Employment Cost Index produced by the Department of Labor provides evidence that real “across the board” pay increases have averaged about 0.5% - 0.7% annually during the last ten to twenty years.

We also referred to the annual report on the financial status of the Social Security program published in July 2014. In that report, real “across the board” pay increases are forecast to be 1.1% per year under the intermediate assumptions.

The real pay increase assumption is generally considered a more “macroeconomic” assumption, that is not necessarily based on individual plan experience. However, recent salary experience with public systems in California as well as anecdotal discussions with plans and plan sponsors indicate lower future real wage growth expectations for public sector employees.

Considering these factors, we recommend reducing the real “across the board” salary increase assumption from 0.75% to 0.50%. This means that the combined inflation and “across the board” salary increase assumption will decrease from 4.00% to 3.50%.

3. Promotional and Merit Increases – As the name implies, these increases come from an employee’s career advances. This form of pay increase differs from the previous two, since it is specific to the individual. For VCERA, there are service-specific merit and promotional increases. These assumptions have been reviewed as part of our triennial experience study as of June 30, 2015.

Recommended promotional and merit assumptions are provided as part of our triennial experience analysis.

All three of these forces will be incorporated into a salary increase assumption which is applied in the actuarial valuation to project future benefits and future normal cost contribution collections.

Active Member Payroll

Projected active member payrolls are used to develop the UAAL contribution rate. Future values are determined as a product of the number of employees in the workforce and the average pay for all employees. The average pay for all employees increases only by inflation and real “across the board” pay increases. The promotional and merit increases are not an influence, because this average pay is not specific to an individual.

We recommend that the active member payroll increase assumption be decreased from 4.00% to 3.50% annually, consistent with the combined inflation plus real “across the board” salary increase assumptions.

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