

**CITY OF LOS ANGELES FIRE AND POLICE  
PENSION PLAN**

**Review of Economic Actuarial Assumptions  
for the June 30, 2014 Actuarial Valuation**



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July 3, 2014

Board of Fire and Police Pension Commissioners  
City of Los Angeles Fire and Police Pension Plan  
360 East 2nd Street, 4th Floor  
Los Angeles, CA 90012-4203

**Re: Review of Economic Actuarial Assumptions  
for the June 30, 2014 Actuarial Valuation**

Dear Members of the Board:

We are pleased to submit this report of our review of the June 30, 2014 economic actuarial assumptions for the City of Los Angeles Fire and Police Pension Plan. 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, 2010 to June 30, 2013. Based on that review, the results and the associated assumptions for the June 30, 2014 valuation are provided in a separate report.

We are Members of the American Academy of Actuaries and 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", written over a horizontal line.

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

A handwritten signature in black ink, appearing to read "Andy Yeung", written over a horizontal line.

Andy Yeung, ASA, EA, MAAA, FCA  
Vice President and Associate Actuary

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## I. INTRODUCTION, SUMMARY, AND RECOMMENDATIONS

To project the cost and liabilities of the Pension Plan, 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 experience was temporary and that, over the long run, experience will 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<sup>1</sup>, "Selection of Economic Assumptions for Measuring Pension Obligations." This Standard of Practice puts

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<sup>1</sup> ASOP No. 27 was revised in September 2013 effective for measurement dates on or after September 30, 2014. Because, absent subsequent Board action, the recommendations developed herein are intended for use in the June 30, 2014, 2015 and 2016 valuations, this study was performed in accordance with ASOP 27 as constituted both before and after the 2013 revisions to the ASOP.

forth guidelines for the selection of the economic actuarial assumptions utilized in a pension plan actuarial valuation.

We are recommending changes in the assumptions for investment return and inflation. Our recommendations for the economic actuarial assumptions for the June 30, 2014 Actuarial Valuation are as follows:

**Inflation** – Future increases in the Consumer Price Index (CPI) which drive investment returns and active member salary increases, as well as COLA increases to retired employees.

**Recommendation:** *Reduce the current 3.50% inflation assumption to 3.25% per annum. Reduce the current 3.50% COLA to 3.25% for retired employees in Tiers 1 and 2. Maintain the current 3.00% COLA for retired employees in Tiers 3 through 6.*

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

**Recommendation:** *Reduce the current 7.75% investment return assumption to 7.50% per annum. As the 7.50% recommendation would result in a significant decrease in the margin for adverse deviation under the risk-adjusted model used by Segal to evaluate this assumption, we are also making an alternative recommendation for a 7.25% assumption that is more consistent with the practice followed in the last review of this assumption, which was for the June 30, 2010 valuation. 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.
- Merit and promotional increases.

***Recommendation: Reduce the current inflationary salary increase assumption from 3.50% to 3.25% per annum consistent with our recommended general inflation assumption and maintain the real “across the board” salary increase assumption at 0.75%. This means that the combined inflationary and real “across the board” salary increases will decrease from 4.25% to 4.00% per annum. The merit and promotional increase assumptions are provided in the triennial non-economic actuarial experience study report as of June 30, 2013, along with the other recommended non-economic assumptions for the June 30, 2014 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.

## II. BACKGROUND AND METHODOLOGY

In this report, we analyzed the “economic” assumptions only. The “non-economic” assumptions recommended for the June 30, 2014 valuation are provided in the June 30, 2013 triennial non-economic actuarial experience study report. The primary economic assumptions reviewed 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 Plan’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 merit and promotional increases. With the exception of Tier 1, 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” 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 2013

(U.S. City Average - All Urban Consumers)

	<u>25th Percentile</u>	<u>Median</u>	<u>75th Percentile</u>
15 year moving averages	2.6%	3.4%	4.7%
30 year moving averages	3.2%	4.2%	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.

LAFPP's investment consultant, RVKuhns & Associates, anticipates an annual inflation rate of 2.50%. Note that, in general, investment consultants use a time horizon for this assumption that is shorter than the time horizon we use for the actuarial valuation.

To find a forecast of inflation based on a longer time horizon, we referred to the 2013 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 2.80%. We also compared the yields on the thirty-year inflation indexed U. S. Treasury bonds to comparable traditional U. S. Treasury bonds. As of February 2014, the difference in yields is 2.27%, which provides a measure of market expectations of inflation.

**Based on all of the above information, we recommend that the current 3.50% annual inflation assumption be reduced to 3.25% for the June 30, 2014 actuarial valuation.**

#### *Retiree Cost-of-Living Increases*

In our last review of the economic assumptions as of June 30, 2010, consistent with the 3.50% annual inflation assumption adopted by the Board for that valuation, the Board adopted a 3.50% retiree cost-of-living adjustment for all retirees in Tiers 1 and 2, since these tiers have an uncapped COLA. The retiree cost-of-living adjustment is subject to a 3.00% maximum for Tiers 3 through 6 (including the new Tier 6 that was added effective July 1, 2011) and a 3.00% assumption was used for retirees in those tiers.

**We are recommending that the current 3.50% retiree cost-of-living assumption for Tiers 1 and 2 be reduced to 3.25% for the June 30, 2014 valuation. We are not recommending any change to the 3.00% retiree cost-of-living assumption for retirees in Tiers 3 through 6.**

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 assumption.
- 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 3.25% 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 assumption. Therefore, we continue to recommend setting the COLA assumption 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.

Following is the Plan's most recently adopted 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 RVKuhns' total 2013 return assumptions by their assumed 2.50% inflation rate. The second column of returns (except for Unconstrained Fixed Income and Private Equity) represents the average of a sample of real rate of return assumptions. The sample includes the expected annual real rates of return provided to us by RVKuhns and by eight other investment advisory firms retained by Segal's California public sector retirement clients. We believe these averages are a reasonable forecast of long term future market returns.<sup>2</sup>

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<sup>2</sup> 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.

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

<u>Asset Class</u>	Percentage of Portfolio	RVKuhns’ Assumed Real Rate of Return <sup>(1)</sup>	Average Real Rate of Return from a Sample of Consultants to Segal’s Public Sector Clients <sup>(2)</sup>
Large Cap U.S. Equity	23.00%	5.25%	6.03%
Small Cap U.S. Equity	6.00%	6.00%	6.71%
Developed International Equity	16.00%	6.15%	6.71%
Emerging Markets Equity	5.00%	8.00%	8.02%
U.S. Core Fixed Income	14.00%	1.00%	0.52%
High Yield Bonds	3.00%	3.75%	2.81%
Real Estate	10.00%	4.65%	4.73%
TIPS	5.00%	1.00%	0.43%
Commodities	5.00%	4.50%	4.67%
Cash	1.00%	-0.25%	-0.19%
Unconstrained Fixed Income	2.00%	2.50%	2.50% <sup>(3)</sup>
Private Equity	<u>10.00%</u>	<u>9.25%</u>	<u>9.25%</u> <sup>(3)</sup>
Total Portfolio	100.00%	4.92%	5.12%

<sup>(1)</sup> Derived by reducing RVKuhns’ 2013 nominal rate of return assumptions by their assumed 2.50% inflation rate.

<sup>(2)</sup> These are based on the projected arithmetic returns provided by the investment advisory firms serving the LA Fire and Police Pension Plan, the county retirement associations of Fresno, Sonoma, Sacramento, Contra Costa, Mendocino, the City of Fresno Retirement Systems, the LA City Employees’ Retirement System and the Los Angeles Department of Water and Power Retirement Plan. These return assumptions are gross of any applicable investment expenses.

<sup>(3)</sup> For these asset classes, the RVKuhns’ assumption is applied in lieu of the average because there is a larger disparity in returns for these asset classes among firms surveyed and because using RVKuhns’ assumption should more closely reflect the underlying investments made specifically for LAFPP.

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 Actuarial Standard of Practice No. 27, Section 3.6.3.e, which states:

“Investment Manager Performance - Anticipating superior (or inferior) investment manager performance may be unduly optimistic (pessimistic). Few investment

managers consistently achieve significant above-market returns net of expenses over long periods.”<sup>3</sup>

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 rates of return allows the Plan’s investment return assumption to reflect a broader range of capital market information and should help reduce year to year volatility in the Plan’s investment return assumption.
3. Therefore, we recommend that the 5.12% portfolio real rate of return be used to determine the Plan’s investment return assumption. This is 0.61% lower than the return we used in 2010 to prepare the recommended investment return assumption for the June 30, 2010 valuation. This difference is primarily due to lower expected real returns by asset classes provided to us by the investment advisory firms.

### ***Plan 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

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<sup>3</sup> This citation is from ASOP No. 27 prior to the September 2013 revision. In the revised ASOP, Section 3.8.3.d contains the relevant guidance:  
“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.”

discussed later in this report, current practice for LAFPP 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, 2013.

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

FYE	Actuarial Value of Assets	Administrative Expenses	Investment Expenses	Administrative %	Investment %	Total %
2009	\$15,066,287	\$13,362	\$54,060	0.09%	0.36%	0.45%
2010	15,036,857	13,561	54,523	0.09	0.36	0.45
2011	15,220,560	13,443	55,584	0.09	0.37	0.46
2012	15,179,275	14,498	51,790	0.10	0.34	0.44
2013	15,671,112	13,045	55,588	<u>0.08</u>	<u>0.35</u>	<u>0.43</u>
			Average:	0.09	0.36	0.45%

The average expenses percentage over this five year period is 0.45%. Based on this experience, we believe a future expense assumption of 0.45% is reasonable. This assumption will be re-examined in future studies 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”. For LAFPP, of the \$55.6 million in investment expenses paid in 2012/2013, \$1.3 million was paid for expenses associated with maintenance of assets in mutual funds and for other fees associated with obtaining investment consulting and custodian services. That left \$54.3 million (or 0.34% out of the total 0.35% in investment expenses in 2012/2013) for expenses paid to active managers. Based on input provided by LAFPP’s investment staff, we understand that a significant portion of the investment expenses incurred was associated with the implementation of LAFPP’s asset allocation and specialty indexes and that considerable expenses would still remain even if it were feasible for LAFPP to replicate the actively managed portfolio with a passive strategy.*

*Even though we have not performed a detailed analysis to measure how much of the 0.34% in expenses paid to active managers might have been offset by additional returns (“alpha”) earned by that active management, we do not believe that such review would have a significant impact on the recommended investment return assumption developed using the above expense assumption. This is because any alpha that may be identified and made available to increase the risk adjustment would still be insufficient to restore the confidence level to the prior level associated with the 7.75% investment return assumption (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 Plan and fiscal year 2014/2015 for the employer.<sup>4</sup>

According to GASB, the investment return assumption for use in the 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 0.1% administrative expense component 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 may be available to the Board in developing the investment return assumption for use in

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<sup>4</sup> 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 expense reporting under the new Statements.

GASB financial reporting purposes are discussed at the end of this Section. In that discussion, we do recommend that the Board adopt an investment return for funding that is gross of administrative expenses. However, the preliminary discussion that follows below 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 is adjusted to reflect the potential risk of shortfalls in the return assumptions. The Plan’s asset allocation 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.

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.<sup>5</sup> The 5.12% expected real rate of return developed earlier in this report was based on expected mean or average 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, and is consistent with our experience that retirement boards 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%. Together with the 2010 inflation and expense assumptions, that return implied a risk adjustment of 1.03%. Based on the 2010 portfolio annual standard deviation of 12.9% (provided by RVKuhns), that risk adjustment reflected a confidence level of 62% 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.<sup>6</sup>

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<sup>5</sup> This type of risk adjustment is sometimes referred to as a “margin for adverse deviation.”

<sup>6</sup> The theory that long term investment returns follow a Normal distribution is debatable; however, we believe the Normal distribution assumption is not unreasonable for purposes of setting the risk adjustment.

In our model, the confidence level associated with a particular risk adjustment represents the likelihood that the Plan's actual mean 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 is a 60% chance (3 out of 5) 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 62% confidence level to set this year's risk adjustment, based on the current long-term portfolio standard deviation of 13.5% (provided by RVKuhns), the corresponding risk adjustment would be 1.07%. Together with the other investment return components, this would result in an investment return assumption of 6.85%, which is substantially lower than the current assumption of 7.75%.

Because this is a substantial change in this long term assumption, and because the 62% confidence level is actually higher than most systems that have recently been evaluated under this model, 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 0.42%, which corresponds to a confidence level of 55%. However, because there is no "correct" confidence level and because we believe that the use and the level of a risk adjustment are matters for the Board to evaluate and decide, we are also making a recommendation for a 7.25% assumption. A net investment return assumption of 7.25%, together with the other investment return components, would produce a risk adjustment of 0.67% which corresponds to a confidence level of 57%.

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 Plan has positioned itself over periods of time. The use of either a 55% or 57% 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 RVKuhns. 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. 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 following “Test of Risk Adjustment” section, including (1) a discussion of the relationship between the inflation assumption and the risk adjustment and (2) a comparison with assumptions adopted by similarly situated public sector retirement sections.

Taking into account the factors above, our recommendation is to reduce the net investment return assumption from 7.75% to 7.50%. As noted above, this return implies a risk adjustment of 0.42%, reflecting a confidence level of 55% that the actual average return over 15 years would not fall below the assumed return.

#### ***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 Investment Return Assumption

Assumption Component	June 30, 2014 Valuation Recommended Value	June 30, 2014 Valuation Alternative Recommendation	June 30, 2010 Valuation Adopted Value
Inflation	3.25%	3.25%	3.50%
Plus Portfolio Real Rate of Return	5.12%	5.12%	5.73%
Minus Administrative and Investment Expense Adjustment	(0.45%)	(0.45%)	(0.45%)
Minus Risk Adjustment	<u>(0.42%)</u>	<u>(0.67%)</u>	<u>(1.03%)</u>
Total	7.50%	7.25%	7.75%
Confidence Level	55%	57%	62%

**Based on this analysis, we recommend that the investment return assumption be reduced from 7.75% to 7.50% per annum with an alternative recommendation for a 7.25% assumption should the Board decide to maintain the confidence level associated with this assumption at a level more consistent with past practice.**

#### *Test of Risk Adjustment*

The original development of the risk adjustment component of our investment earnings assumption model arose from our experience with many retirement boards over many years. Quite simply, combining the boards' inflation assumption with the real return and expense components produced – and produces – a substantially higher assumed return than what the boards actually adopt, regardless of the consulting actuary or the methods involved in the process.

In addition to the generally risk adverse attitude of retirement boards noted above, we believe another reason for this involves the inflation assumption. As noted earlier, the inflation assumption for actuarial valuations is generally longer term than that used by investment consultants. For many years, that has led to higher actuarial valuation inflation assumptions. A higher inflation assumption has a conservative effect - higher current cost - on the wage increase and COLA assumption, but is less conservative as part of the

investment earnings assumption. In effect, the risk adjustment compensates for this by offsetting the effect of the higher inflation assumption on assumed investment earnings.

One way to test the reasonableness of the risk adjustment incorporated in our recommendation is to compare our risk adjusted investment return against the expected net investment return that would result from using the average of all the capital market assumptions -- including the lower inflation assumption -- of the investment consultants in our sample.

Here is the comparison. It shows that the difference between our 7.50% recommended return and that derived using the average of all the capital market assumptions of the investment consultants in our sample comes from the difference in the inflation assumptions, partially offset by the risk adjustment.

<u>Assumption Element:</u>	<u>Risk Adjusted Method</u>	<u>Average of Investment Consultant Sample</u>	<u>Difference</u>
Inflation	3.25%	2.62%	0.63%
Risk Adjustment	(0.42%)	0.00%	(0.42%)
Real Rate of Return	5.12%	5.12%	0.00%
Expenses	<u>(0.45%)</u>	<u>(0.45%)</u>	<u>0.00%</u>
Total	7.50%	7.29%	0.21%

The 0.21% (21 basis points) difference between the two calculations represents about a 2% higher confidence level under the lower inflation result without the risk adjustment, as compared to the higher inflation, risk adjusted method. This means that under the 7.50% assumption, the risk adjustment does not fully offset the use of a higher inflation scenario than that assumed by the investment consultants.

### ***Comparing 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 this 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, recently 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, three county employees retirement systems (Orange, Fresno and Contra Costa) have recently adopted a 7.25% earnings assumption.

The following table compares the LAFPP 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	LAFPP	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%, over a third 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.

While the recommended assumption of 7.50% provides for a substantially lower confidence level within the risk adjustment model, it is consistent with the Plan’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 LAFPP in developing its investment return assumption 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 employer's 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 employer. 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. That comparison will differ dramatically depending on whether one is considering the two pension liability measures or the annual pension expense/contribution measures:

- 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 LAFPP uses for funding.

Note that, unrelated to the investment return assumption, the new GASB rules use a version of the Entry Age method where the "Total Pension Liability" must be fully accrued by the time a member either enters DROP or is expected to elect the DROP. This is in contrast to the version of the Entry Age method used for funding, where the "Actuarial Accrued Liability" does not have to be fully accrued until members retire from employment after participation in the DROP. Under GASB, actives who are expected to enroll in the DROP in the future would report a "Service Cost" that is higher than the "Normal Cost" used for funding, while members already in DROP would report no Service Cost even though their Normal Cost continues to accrue.

This means that the GASB "Total Pension Liability" measure for financial reporting will be higher than LAFPP's "Actuarial Accrued Liability" measure for funding. The total

GASB “Service Cost” may be higher or lower than the “Normal Cost” for funding depending on whether the higher “Service Cost” due to the shortening of the funding period for members who have not yet enrolled in the DROP is offset by the lower (i.e., zero) “Service Cost” for members who have already enrolled in the DROP.

- Beside the above modifications for the DROP, 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, even those retirement systems that do not have a DROP 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.

The above will facilitate the explanation of why the funding and financial reporting results are different for both the liabilities and annual costs. Liabilities differ only because of GASB’s method for valuing the DROP, while the annual costs differ because of shorter amortization periods. However, there is one other feature in the details of how the liabilities are currently measured that will make the liability and Normal Cost measures even more different unless action is taken by LAFPP.

### **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, LAFPP’s investment return assumption used for the annual funding valuation is developed net of both investment and administrative expenses.

While LAFPP could continue to develop its funding investment return assumption net of both investment and administrative expenses, that would mean that the Plan would then have two slightly different investment return assumptions, one for funding and one for financial reporting. To avoid this apparent discrepancy, we believe that it would be preferable to use the same investment return assumption for both funding and financial reporting purposes. The most straightforward way to do this would be to develop this assumption for funding purposes on a basis that is net of only investment expenses, and then add an explicit assumption for administrative expenses.

**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 0.1% from development of the preliminary 7.5% investment return recommendation (see the table on page 11 for development of the administrative expense component). Under this approach, because these economic assumptions are generally changed in ¼% increments, there would have been no change in the recommended investment return assumption. Instead, there would have been an increase in the risk adjustment of 0.1%, with a corresponding increase in the confidence level from 55% to 56%.

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 \$14 million annually, or 1.0% of payroll.

This approach is presented in the following table.

Calculation of Net Investment Return Assumption

Assumption Component	June 30, 2014 Recommended Values if Used only for Funding	June 30, 2014 Recommended Values for both Funding and Financial Reporting
Inflation	3.25%	3.25%
Plus Portfolio Real Rate of Return	5.12%	5.12%
Minus Expense Adjustment	(0.45%)	(0.35%)
Minus Risk Adjustment	<u>(0.42%)</u>	<u>(0.52%)</u>
Total	7.50%	7.50%
Confidence Level	55%	56%

Increase in Employer  
Contributions Due to  
Explicit Load for  
Administrative Expenses  
(Cost as % of Payroll)

Not Applicable

1.0% of payroll

Since the member’s contributions are defined in the Administrative Code and are not directly impacted by the change in the actuarial assumptions, this means that the administrative expenses would continue to be allocated only to the employer.

**Development of Investment Return Assumption on a Net of Administrative Expenses Basis But use that Same Assumption for Financial Reporting 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 55% as used for funding purposes to 56% only as used for financial reporting purposes.

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, 2014 Recommended Values if Used only for Funding	June 30, 2014 Alternative Values for Financial Reporting
Inflation	3.25%	3.25%
Plus Portfolio Real Rate of Return	5.12%	5.12%
Minus Expense Adjustment	(0.45%)	(0.35%)
Minus Risk Adjustment	<u>(0.42%)</u>	<u>(0.52%)</u>
Total	7.50%	7.50%
Confidence Level	55%	56%

### 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 amortization 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 will 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 3.50% to 3.25% per annum. This inflation component will be used as part of the salary increase assumption.**

2. Real “Across the Board” Pay Increases – These increases are sometimes 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 0.4 – 0.7% annually during the last 10 - 20 years.

We also referred to the annual report on the financial status of the Social Security program published in May 2013. 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, which is not necessarily based on individual plan experience. However, we note that LAFPP’s salary increase experience since the last triennial experience study as of June 30, 2010 indicates that actual average salary increases were lower than the average change in CPI in 2 of 3 years. The comparison is as follows:

<u>Valuation Date</u>	<u>Actual Average Increase<sup>(1)</sup></u>	<u>Actual Change in CPI<sup>(2)</sup></u>
June 30, 2008	4.1%	3.1%
June 30, 2009	3.7%	0.0%
June 30, 2010	1.0%	1.4%
Three year average	2.9%	1.5%
June 30, 2011	0.7%	2.3%
June 30, 2012	0.2%	2.1%
June 30, 2013	<u>3.3%</u>	<u>2.2%</u>
Six year average	2.2%	1.9%

(1) Reflects the increase in average salary for members at the beginning of the year versus those at the end of the year. It does not reflect the average salary increases received by members who worked the full year.

(2) Based on the change in the February CPI for the Los Angeles-Riverside-Orange County Area compared to the prior year.

Even though the difference between the above averages for the six-year period was 0.3%, the difference in the average from 2008 to 2010, before the more recent economic constraints, was 1.4%. **We recommend maintaining the real “across the board” salary increase assumption of 0.75% for the June 30, 2014 actuarial valuation. This means that the combined inflation and “across the board” salary increase assumption will decrease from 4.25% to 4.00%.**

3. Merit and Promotional 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 LAFPP, there are service specific merit and

promotional increases. These assumptions have been reviewed as part of our triennial experience study as of June 30, 2013.

**Recommended merit and promotional assumptions are provided as part of our triennial experience study as of June 30, 2013.**

All three of these forces are incorporated into a salary increase assumption that 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 is assumed to increase only by inflation and real “across the board” pay increases. The merit and promotional increases are not an influence, because this average pay is not specific to an individual.

**For the June 30, 2014 valuation, we recommend that the active member payroll increase assumption be reduced from 4.25% to 4.00% annually, consistent with the combined inflation and “across the board” salary increase assumptions.**