

**City of Los Angeles
Fire and Police Pension Plan
(LAFPP)**

**Actuarial Audit
as of June 30, 2012**

Produced by [Cheiron](#)

November 2013

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November 25, 2013

Board of Retirement
City of Los Angeles Fire and Police Pension Plan
360 East Second Street, Suite 400
Los Angeles, CA 90012-4203

Dear Members of the Board:

Cheiron is pleased to present the results of our Actuarial Audit of the City of Los Angeles Fire and Police Pension and Health Plan Actuarial Valuations as of June 30, 2012, the Actuarial Experience Study of these plans for the period July 1, 2007 through June 30, 2010 and the Review of Economic Actuarial Assumptions for the June 30, 2010 Actuarial Valuation. We direct your attention to the summary section of our report which highlights the key findings of our review of the actuarial valuations and experience studies. The balance of the report provides details in support of these findings along with supplemental data, background information and discussion of the process taken in the evaluation of the work performed by the Plan's actuary.

We would like to take this opportunity to thank the members of the City of Los Angeles Fire and Police Plan staff and the Segal Company (Segal) for their assistance in providing the data and addressing our questions during this audit process.

In performing this audit, Cheiron used actuarial assumptions and methods recommended by the actuary and adopted by the Board of Retirement (the Board) based upon the most recent experience review completed in 2010.

The results of this audit report reflect a full replication of the Plan's June 30, 2012 Retirement and Health Actuarial Valuations. The results of these valuations are dependent upon future experience conforming to the actuarial assumptions. It is certain that actual experience will not conform exactly to these assumptions. Actual results will differ from expected results to the extent actual experience differs from expected experience.

In preparing our report, we relied, without audit, on information (some oral and some written) supplied by the City of Los Angeles Fire and Police Pension Plan staff and the Plan's actuary. This information includes, but is not limited to, plan provisions, employee census data and financial information. A detailed description of all information provided for this audit is included in the body of our report.

While the data was not explicitly audited, we did perform an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

This report does not reflect future changes in benefits, penalties, taxes, or administrative costs that may be required as a result of the Patient Protection and Affordable Care Act of 2010, related legislation, or regulations.



We hereby certify that, to the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This actuarial audit report was prepared exclusively for LAFPP for the purpose described herein. This report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

Sincerely,
Cheiron



Kenneth A. Kent, FSA, FCA
Principal Consulting Actuary



Michael Schionning, FSA
Principal Consulting Actuary



David Holland, FSA
Associate Actuary

SECTION I
EXECUTIVE SUMMARY

Key Findings

The key conclusions regarding our audit of the June 30, 2012 valuations for LAFPP are:

- The Board may rely on the results found in the June 30, 2012 actuarial reports for both the Pension and Health Plans. Our liability replication for both of these plans was within acceptable tolerance levels.
- We identified a number of technical issues and areas for future consideration in performing our audit which can be found in detail in Section II and III. While none of these issues are material by themselves, or collectively result in an adverse opinion regarding the valuation results, we recommend corrections be made to improve the accuracy and quality of the valuation results.
- The valuation results have been based on reasonable actuarial methods and assumptions. However, in Section IV we discuss a few recommendations concerning the methods and assumptions used in the valuations, with a focus on the asset smoothing method in particular.

Regarding our review of the Experience Study our key conclusions and recommendations are:

- The two different experience studies, one for demographic assumptions and the other addressing economic assumptions helps to separate the differences in the way the trends underlying these assumptions can change, with economic assumption being much more volatile.
- The experience studies performed by Segal and the resulting assumptions adopted by the Board conform to applicable ASOPs. We particularly note that the methodology for determination of confidence levels as above 50% (62% was used in the 2010 analysis) is an effective way to address the risks associated with the selection of the long-term investment return assumption and we encourage maintaining this discipline.
- Three years may be too short a period to identify long-term trends in demographic behavior, including turnover, mortality, retirement and disability rates. The information developed for the previous experience analysis should be included in the discussion to provide more credible evidence of long-term changes in expectations for future demographic behavior. Another possibility would be to lengthen the time covered by demographic experience studies, perhaps to five years.
- There may be clear underlying trends in the prior two studies such as turnover that are being addressed incrementally, but could be addressed at one time with appropriate adjustments to the assumptions.

**CITY OF LOS ANGELES FIRE AND POLICE PENSION PLAN
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**SECTION I
EXECUTIVE SUMMARY**

A. Scope of the Report

Cheiron's audit of the City of Los Angeles Fire and Police Pension Plan (LAFPP) included the following components:

1. Audit of the LAFPP Retirement Plan valuation as of June 30, 2012;
2. Audit of the LAFPP Health Plan valuation as of June 30, 2012;

In addition, we performed critical review but not replication of the Actuarial Experience Studies for the periods July 1, 2007 through June 30, 2010, July 1, 2004 through June 30 2007 and the *Review of Actuarial Economic Assumptions and Possible Board Action* dated September 2, 2010.

The basic objectives of our review are to answer three questions:

1. Given the assumptions applied, are the valuation results (benefit flows, liabilities, and actuarial costs) accurate?
2. Are the valuation results based upon reasonable actuarial assumptions and methods, and are they in full compliance with actuarial standards of practice (ASOPs)?
3. Is the actuarial information being provided to LAFPP comprehensive? Does the LAFPP Board have the information required to assess the present and future financial status of the Plans?

Our review included an analysis of each of the following:

- We collected both raw member data from LAFPP and edited data from Segal. We performed an independent analysis on the raw data to confirm the member information used in the actuarial valuations.
- We reviewed and evaluated the actuarial methods and assumptions displayed in the valuation reports, and reviewed the results and recommendations made in the last experience studies.
- We independently determined plan liabilities, assets and costs, and compared them to those presented in the valuation reports and in separate detailed results provided to us by Segal.
- In addition to the assets, liabilities, and costs shown in the valuation reports, we also reviewed the content of the reports for completeness and compliance with actuarial standards of practice.

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B. Retirement Plan Audit

Cheiron has conducted an independent actuarial audit of the Segal Company's June 30, 2012 Retirement Plan Actuarial Valuation of the City of Los Angeles Fire and Police Pension Plan (LAFPP). The purpose of this study is to determine if the actuarial work is correct, reasonable, and comprehensive.

To answer these questions, Cheiron replicated the results from the valuation, assessed the reasonableness of the assumptions and methods, reviewed the information provided in the valuation report, and developed an interactive projection model to assess the sensitivity of the current and projected results to certain chosen assumptions.

Replication of Valuation Results

This is the most straightforward part of the review process. The actuarial calculations were checked using an independent valuation to establish that the calculations of liabilities and costs are substantially correct. We can confirm that the liabilities and costs computed in the valuation as of June 30, 2012 are reasonably accurate and were computed in accordance with generally accepted actuarial principles. With respect to member data, we independently collected the data from LAFPP. Although the data we used in our parallel valuation was similar to that used by Segal in their report, there are some minor differences that are described later in this Report. We do not believe that these discrepancies have a material impact on the valuation results.

Review of Experience Study, Assumptions and Methods

Experience Study Review

Our review of the experience studies performed for LAFPP included review of the following reports provided to us:

- Review of Actuarial Economic Assumptions and Possible Board Action dated September 2, 2010
- Actuarial Experience Study – Analysis of Actuarial Experience During the Period July 1, 2004 through June 30, 2007
- Actuarial Experience Study – Analysis of Actuarial Experience During the Period July 1, 2007 through June 30, 2010

We find nothing that is materially divergent from the application of the Actuarial Standards of Practice (ASOP) #27, Selection of Economic Assumptions for Measuring Pension Obligations and #35, Selection of Demographic and Other Non-Economic Assumptions for Measuring Pension Obligations. However, we offer the following recommendations and considerations for LAFPP and their actuary, which are discussed in more detail in Section IV of our report.

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1. Three years of data is too short a period for measuring and identifying trends for most demographic assumptions. While the recommended changes to the assumptions are supported by the experience and may not have a material impact on the plan's liability, they may not be reflective of actual long-term trends. Such experience should be reviewed with consideration to prior reports to determine long-term trends.

2. When it is clear that a consistent behavior pattern is anticipated, like that of the turnover assumption, instead of a gradual change to the experience, the assumption should reflect the experience. This is apparent when comparing the 2007 and 2010 experience studies, where the turnover experience is very consistent.

Economic Assumptions

While the actuarial assumptions cannot be characterized as unreasonable, and as stated earlier the application of confidence levels is an effective way to address the long-term risk attributable to investment assumptions, there is continuous concern regarding investment /discount rate assumptions, as demonstrated by the significant trend by public sector pension plans to lower their discount rates. The 7.75% discount rate that LAFPP utilizes is still in the mainstream of other public plan discount rates, although it results in a compromise in the level of risk taken in the past (the confidence level was reduced from 65% to 62%), and LAFPP should consider lowering the rate, to reflect the ongoing trend for risk reduction.

At the same time, LAFPP can partially offset the cost of lowering the discount rate by simultaneously reducing the assumed inflation rate, which at 3.50% is above average for public sector plans, and perhaps reduce or eliminate the real across the board salary increase assumption. It may also be appropriate to lower the assumed COLA increase for certain tiers.

CPI: Segal states that LAFPP's investment consultant anticipates annual inflation of 2.50%, although they note that the time horizon used by investment consultants is generally shorter than the time horizon actuaries use in their valuations. The NCPERS 2012 Fund Membership Study showed an average inflation rate of 3.4% for surveyed public sector plans, with 3.0% being the most common (CalSTRS uses 3.0% and CalPERS uses 2.75%). Finally, the ultimate inflation rate in the intermediate economic scenario from the most recent Social Security Trustee Report was 2.8%. While 3.50% is within a reasonable range, the available evidence suggests that it may be appropriate to lower it further.

Salary Increases: The currently assumed total annual growth in payroll (inflation plus real across the board) is 4.25%, which is comparable to other uniform services public sector pension plans. However, there is continued downward pressure on government costs, including salary costs, and this may be expected to persist for some time. This makes aggregate government pay increases above the rate of inflation unlikely.

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COLA: Finally, in the economic assumptions, Segal has recommended that the assumption for future Cost-of-Living Adjustments (COLAs) be 3.50% for Tiers 1 and 2 based on the inflation assumption, and 3.00% (same as the cap) for Tiers 3 through 5. Simulation analyses we have performed for other clients suggest that expected growth in the COLA should be less than the cap due to annual variation in the Consumer Price Index (CPI), even if the CPI averages 3.50% over the long-term. This is true even for Tiers 5 and 6, which provide for banking of excess COLAs, and especially true for Tiers 3 and 4, which do not. We recommend Segal review the COLA assumption in the next experience study with consideration as to whether the assumption should be lowered for certain tiers.

Demographic Assumptions

With respect to the non-economic assumptions (turnover, retirement, mortality, etc.), the assumptions proposed in Segal's review represent a reasonable set of assumptions. However, there are some areas where our recommended assumptions would differ, or where we wish to offer additional comments. Those comments can be found in Section IV, Assumptions and Methods Review.

Phase-in of Experience Study Results

The cost impact of the new actuarial assumptions resulting from the June 30, 2010 Experience Study is being phased in over three years to the City's retirement and health plan contributions. This approach implies that the actuary should be conservative in their consideration and recommendation of assumptions change, as the cost impact will not be fully implemented until several years after the experience study.

Actuarial Methods

We do have concerns with the method to develop the actuarial value of assets. LAFPP presently recognizes investment gains and losses over a seven year period. By far, most plans use a smoothing period of five years or less.

In addition, LAFPP allows the actuarial value of assets to be within a 60% to 140% corridor. In the private sector, defined benefit pension plans are prohibited by federal law from having a corridor wider than 80% to 120%. A large percentage of public sector plans maintain a corridor within that same range.

In our opinion, the use of a long asset gain or loss recognition period combined with a very wide corridor (60% to 140%) is at least questionable, if not unreasonable. If there is an opportunity for the Board to consider a tighter corridor this concern could be remedied without a cost impact at this time.

The amortization policy used by LAFPP is reasonable, with several positive changes made for the June 30, 2012 valuation, including shorter amortization periods for plan amendments

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and changes in assumptions and methods, and a longer period for funding surplus. However, the revised amortization period for experience gains and losses (increased from 15 to 20 years) is at the top of what we would consider reasonable based on the principle of demographic matching.

It is worth noting that although the plan's amortization policy is reasonable and its funding level above average for public sector pension plans as a whole, other metrics illuminate the challenges and risks that LAFPP still faces. For example, the calculated employer and member contributions in the June 30, 2012 valuation are more than \$120 million less than the value of benefits earned in a year (the normal cost) plus interest on the unfunded actuarial liability (UAL) when valued using the market asset value. The plan is also in a negative cash flow position, with contributions covering only 80% of benefit payouts, so it is relying on investment returns to pay for current benefits. We are not suggesting any action on these issues, but they are areas of risk that should be regularly discussed.

Review of Valuation Report

Did the valuation report adequately address and communicate the essential information needed by the Trustees, mandated by GASB, and required by actuaries under the Actuarial Standards of Practice (ASOPs)?

While the valuation report contained most of the essential information required by GASB and the ASOPs, we believe that the interests of the Plan Trustees, Members, and the Plan Sponsor would be much better served if Segal were to include liability and cost projections in its reports and in presentations to the Trustees.

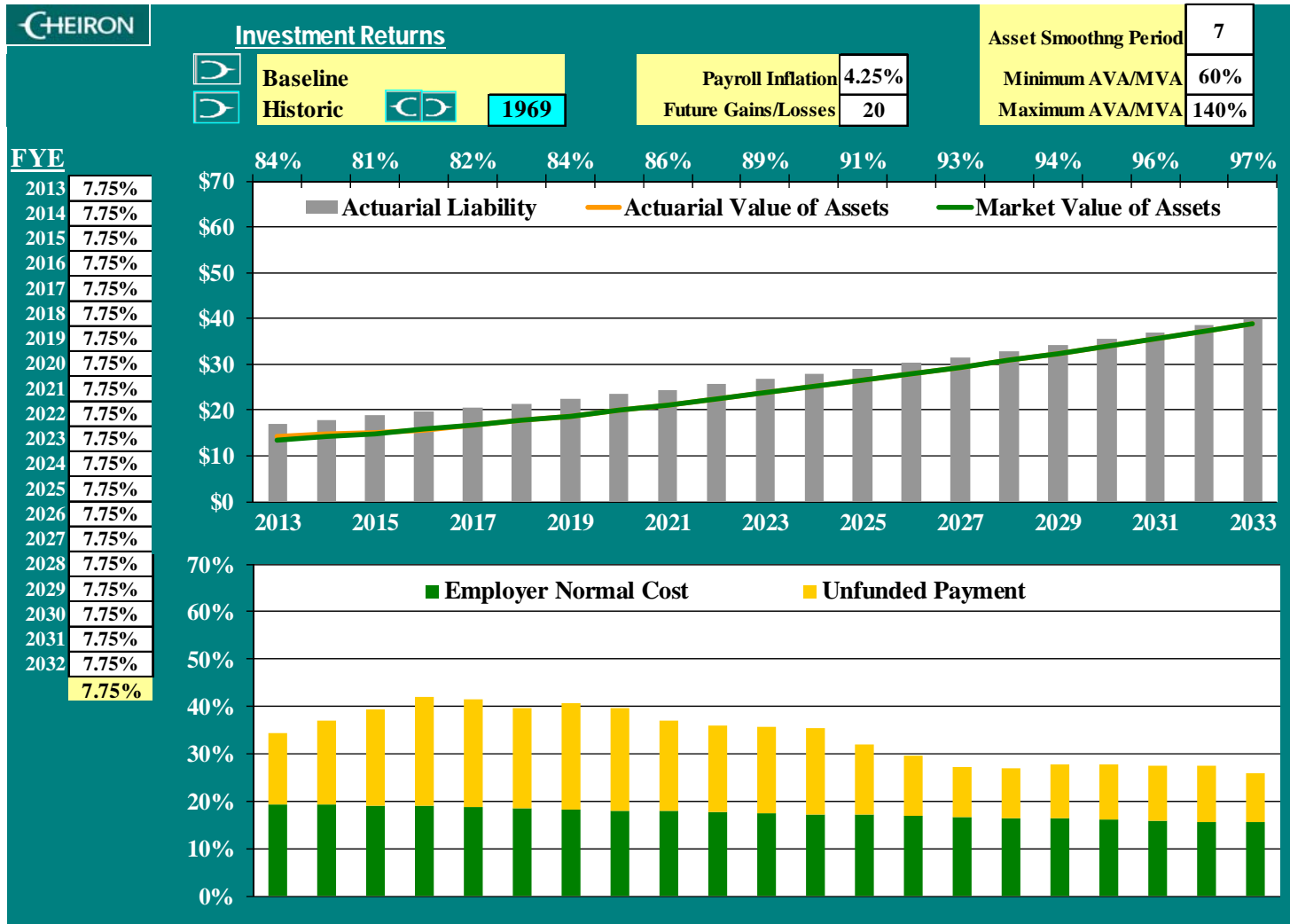
It would also be illustrative to supplement these projections with stress testing projections that show the liabilities, cost, and funded ratios if the actuarial assumptions are not realized.

For instance, on the following pages we show projections of the Plan's assets, liabilities, and contributions over the next 20 years; first assuming that the Plan will earn the assumed 7.75% investment return, and then assuming that the Plan will earn varying returns that average approximately 7.75% over the 20-year period. The difference in the two sets of projections helps illustrate the kind of volatility that can be expected in the Plan's financial results, even if the assumptions are met on average over the long-term.

Note that both sets of projections are intended to be illustrative, rather than a prediction of future outcomes.

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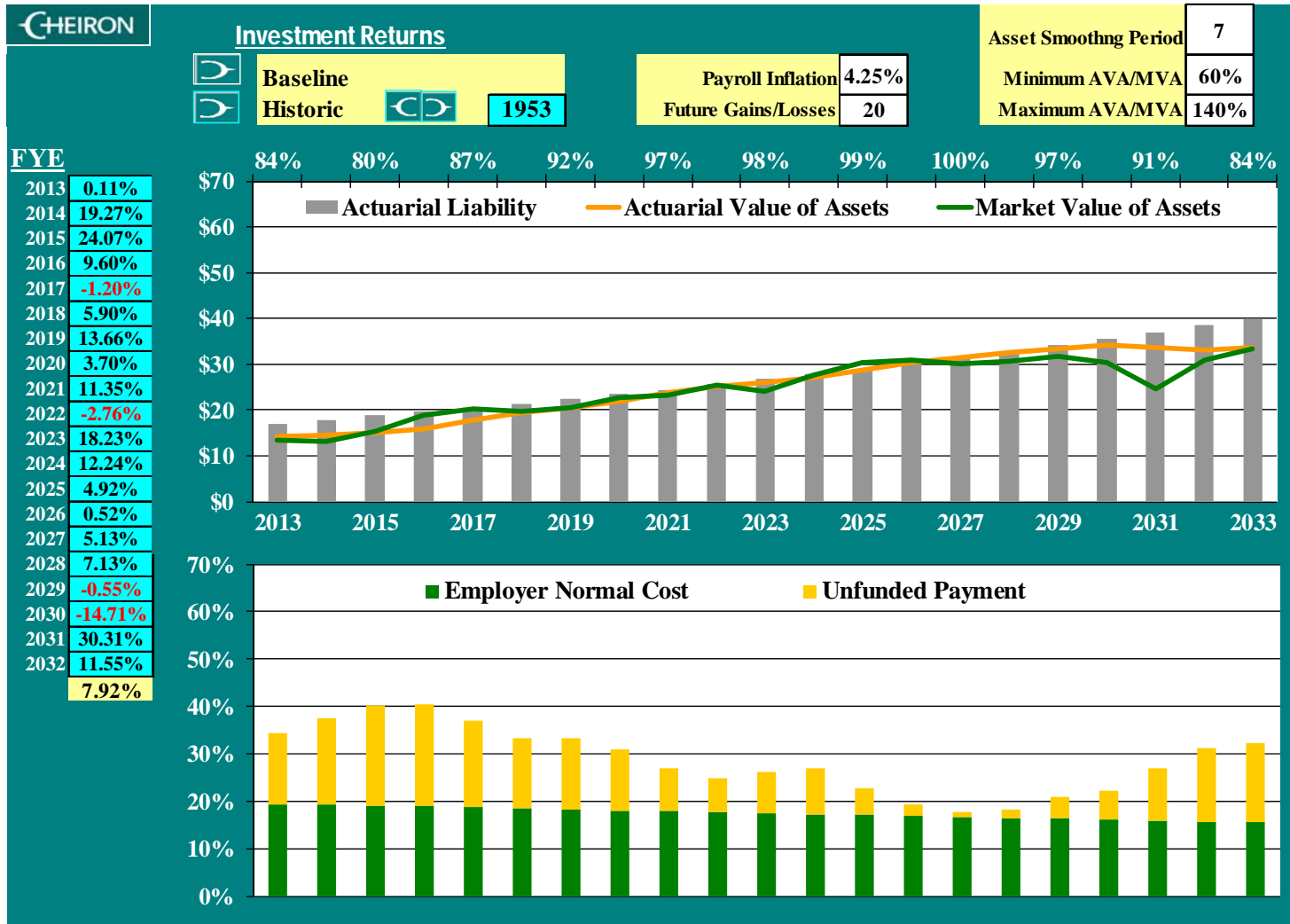
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Results are intended to be illustrative and not a prediction of future outcomes based on actuarial assumptions in the June 30, 2012 valuation. Future results may differ to the extent the assumptions are not realized.

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 EXECUTIVE SUMMARY



Results are intended to be illustrative and not a prediction of future outcomes based on actuarial assumptions in the June 30, 2012 valuation, except for investment returns, as shown. Future results may differ to the extent the assumptions are not realized.

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C. Health Plan Audit

Cheiron has conducted an independent actuarial audit of the Segal Company's June 30, 2012 health plan actuarial valuation of the Los Angeles Fire and Police Pension (LAFPP). The purpose of this study is to determine if the actuarial work is correct, reasonable, and comprehensive.

To answer these questions, Cheiron replicated the results from the valuation, assessed the reasonableness of the assumptions and methods, and reviewed the information provided in the valuation report.

Replication of Valuation Results

The actuarial calculations were checked using an independent valuation system to establish that the calculations of liabilities and costs are substantially correct. We can confirm that the liabilities and costs computed in the valuation as of June 30, 2012 are reasonably accurate and were computed in accordance with generally accepted actuarial principles. With respect to member data, we independently collected the data from LAFPP. Although the data we used in our parallel valuation was similar to that used by Segal in their report, there are some minor differences that are described later in this Report. We do not believe that these discrepancies have a material impact on the valuation results.

Review of Assumptions and Methods

Overall, the assumptions and methods used by Segal are reasonable, conform with the appropriate ASOPs and are consistent with the substantive plan as described in the documentation provided by LAFPP.

However, we noted seven areas where we recommend that the Trustees and its Actuary consider future modifications to the assumptions and methods that we believe would more appropriately reflect the future liability associated with these benefits.

- Based on the information provided by LAFPP, we understand that the plans offered by the United Firefighters of Los Angeles County (UFLAC) are rated using the combined experience of active and retired members. Because of this methodology, the rates charged to non-Medicare retirees are lower than they would be if the retiree group was rated separately. As such, we believe the valuation should include a liability for the value of the implicit subsidy for these plans in accordance with ASOP 6.
- In developing the projected cost of the medical benefits, ASOP 6 states that the actuary should use age-specific costs in the development of the initial per capita costs and in the projection of future health plan costs. We recommend that the actuary develop age-

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specific costs that are consistent with the current premium rates and use these age-specific claim costs to develop the total expected cost of the health plan benefits. Developing age-specific claim costs to assess the impact on valuation results is outside the scope of this audit however we do not expect that using this approach would have a significant impact on the valuation results.

- We recommend that the Actuary consider a longer grading period for the medical trends to reach the ultimate level. This is consistent with the long term view of the health plan marketplace as represented by the Getzen trend model developed by the Society of Actuaries and the analyses performed by the Office of the Actuary in its development of long term cost trends for the Medicare marketplace. We recommend a grading period of between 15 and 20 years.
- The current participation assumptions applied to active members and retirees not yet age 55 assume a higher level of participation after age 65 than between ages 55 and 65. However, the valuation does not reflect this increase in participation at age 65 for current retirees who are between ages 55 and 65. Thus, if the assumptions are exactly met in future years, the plan will experience losses each year when retirees reach age 65 and begin coverage. We recommend instead that the valuation reflect this probability and the associated liability.
- We recommend that active participants currently enrolled in DROP be treated consistently for both the retirement and health plan valuations. Currently, the retirement valuation assumes that members will remain in the program for 5 years from entry. The health plan valuation assumes applies the retirement assumption based on age and service each year, regardless of whether a member is enrolled in DROP.
- The valuation uses the Entry Age Normal funding method, and determines the normal cost as a level percent of pay over each member's expected working lifetime. The Actuary's current method for determining a member's entry age produces a result that consistently understates past service, which results in a larger normal cost and a smaller accrued liability. We note that the method used in the health plan valuation is also inconsistent with the method used in the retirement plan valuation, and recommend that the method be revised.
- We recommend that the Actuary consider using the projections of Part B medical costs and beneficiary premiums as developed by the Office of the Actuary in the Medicare Trustee report as the trend rates for the Part B premium benefit. Part B premium costs are developed by the Federal Government and the Plan Sponsor has no influence on the rate of increase in these benefits. We believe that the projected future trend rates developed by the Office of the Actuary are a more appropriate estimate of the cost of the Part B premium rates. Using these rates results in a small reduction in accrued liability and normal cost, but does not materially affect the valuation results.

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In addition, we noted four technical items that we believe more correctly reflect the actual operation of the plan and recommend that they be reflected in future valuations. These items are summarized below and described more completely in Section III:

- The medical subsidy freeze should be valued consistent with actual plan administration.
- The health subsidy for spousal coverage should be valued based on the expected lifetime of the spouse rather than the retiree.
- The valuation should reflect the actual subsidy amount reported for all surviving spouses.
- The actual subsidies in payment should be taken into account when determining retiree status.

The impact of these four changes in aggregate would decrease the reported liability by approximately 1.8% and as such do not have a material impact on the results of the valuation or our assessment as to the reasonableness of the reported results.

Review of Valuation Report

While the valuation report contained most of the essential information required by GASB and the ASOPs, we believe that the interests of the Plan Trustees, Members, and the Plan Sponsor would be better served if some additional information was included in the report.

These include:

- Show the development of the market value of assets for the health plan separately, providing the same information shown in Exhibits D and E of the valuation report for the health plan assets. This will provide additional information on the changes in the health plan assets due to the contributions made to the Plan and the benefit payments made from the Plan, which are likely different from that of the pension plan.
- Provide the calculation of the ARC and Annual OPEB costs shown in Chart 5 and Chart 7 of the valuation report. The valuation report provides no supporting documentation for these amounts and they are inconsistent with the amounts shown in Chart 4. The CAFR states that the Fiscal Year 2012 ARC and Annual OPEB costs are based on the June 30, 2010 valuation, but there is no calculation supporting this assertion. We believe that users of the report would be better served if the valuation included the actual calculation of the data presented in Chart 5 and Chart 7.
- Provide the actual counts of deferred retirees, disabled retirees, and survivors in the data table for Exhibit A. These members are included in the valuation so we recommend that the actual counts of these members be included as well for completeness of disclosure.
- Provide an explicit description of the benefits not included in the valuation. We understand that benefits due to current and future vested terminated members as well as future surviving spouses of members who die before retirement are not valued. We do not dispute the Actuary's assessment that these are immaterial to the results, but recommend that the valuation report clearly disclose their treatment.

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An Overall Assessment

The actuarial report provided by the Segal Company to LAFPP appears to us to be correct and based on reasonable actuarial methods and assumptions. However, we have three principal observations:

1. We believe that the Plan and its actuary should consider modifications to some of the assumptions that are specific to the Pension and Health plan benefits to better reflect the expected future cost of the program; and
2. We believe that there is additional information that should be included in the valuation report to assist Plan Trustees, Members, and the Plan Sponsor in understanding the liabilities and cost of the health benefit program.
3. Some of the assumptions and funding policies could be more conservative to protect against adverse experience because they leave little margin for adjustments in the future to remain reasonable.

SECTION II
RETIREMENT VALUATION RECONCILIATION

In this section we present detailed results of the replication of the June 30, 2012 Actuarial Valuation of the LAFPP Retirement Plan. A review of the assumptions and methods used in the valuation can be found in Section IV of this report.

Using the same actuarial assumptions and methods from the 2012 valuation report we have attempted to replicate Segal's valuation results, including the following:

- Present value of future benefits
- Actuarial accrued liability
- Unfunded actuarial accrued liability
- Normal cost
- Contribution rates as a percentage of payroll

When testing against different valuation systems, there is a generally acceptable tolerance of plus/minus 5.0%. With a larger plan, minor differences in actuarial procedures have a smaller impact on the key results. Given the size of LAFPP, we anticipated our results would be much closer than 5.0%.

Valuation Notes

Our results for LAFPP fall well within generally acceptable tolerances. There were a couple items we wanted to point out:

- Segal confirmed that they do not value a liability for terminated non-vested participants. These are former members who have left employment and will not be eligible to receive a deferred retirement benefit, but have left their contributions on account. Although the liability for such participants is unlikely to be material, we recommend that Segal consider including it in future valuations.
- In reconciling the participant data with Segal, we had slight differences in the counts for beneficiaries and deferred vested members, in total and between the various tiers. These differences do not have a material impact on the valuation results.

On the following pages we show detailed charts comparing the results of our valuation to Segal's, as well as a comparison of the data used in the two valuations. In reviewing the data, we took the raw data from the Plan and attempted to independently match the processed data that Segal used in its valuation.

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SECTION II
RETIREMENT VALUATION RECONCILIATION

Table II - 1
Los Angeles Fire and Police Pension Plan
Actuarial Valuation as of June 30, 2012
Present Value of Future Benefits Comparison
(in thousands)

	Segal	Cheiron	Difference	Ratio
Present Value of Future Benefits				
Active				
Retirement	\$ 10,082,922	\$ 10,020,214	\$ (62,708)	99.4%
Withdrawal	143,159	148,461	5,302	103.7%
Death	239,954	242,073	2,119	100.9%
Disability	<u>1,059,420</u>	<u>1,060,874</u>	<u>1,454</u>	100.1%
Total Actives	\$ 11,525,455	\$ 11,471,622	\$ (53,833)	99.5%
Inactive	\$ 20,797	\$ 20,958	\$ 161	100.8%
In Pay Status				
Retired	\$ 6,987,612	\$ 6,987,168	\$ (444)	100.0%
Disability	1,538,255	1,539,010	755	100.0%
Survivors	<u>1,046,370</u>	<u>1,046,237</u>	<u>(134)</u>	100.0%
Total In Pay Status	\$ 9,572,238	\$ 9,572,415	\$ 177	100.0%
Total	\$ 21,118,490	\$ 21,064,995	\$ (53,495)	99.7%

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SECTION II
RETIREMENT VALUATION RECONCILIATION

Table II - 2
Los Angeles Fire and Police Pension Plan
Actuarial Valuation as of June 30, 2012
Normal Cost Comparison
(in thousands)

	Segal	Cheiron	Difference	Ratio
Normal Cost (BOY)				
Retirement	\$ 312,819	\$ 311,404	\$ (1,415)	99.5%
Withdrawal	12,008	11,964	(44)	99.6%
Death	14,036	14,530	494	103.5%
Disability	48,299	49,317	1,018	102.1%
Total	\$ 387,162	\$ 387,215	\$ 53	100.0%
Present Value of Future Normal Costs				
Retirement	\$ 3,299,870	\$ 3,303,811	\$ 3,941	100.1%
Withdrawal	131,959	132,278	318	100.2%
Death	148,046	154,195	6,149	104.2%
Disability	507,781	521,728	13,946	102.7%
Total	\$ 4,087,656	\$ 4,112,011	\$ 24,355	100.6%

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**SECTION II
RETIREMENT VALUATION RECONCILIATION**

**Table II - 3
Los Angeles Fire and Police Pension Plan
Actuarial Valuation as of June 30, 2012
Contribution Comparison
(in thousands)**

	Segal	Cheiron	Difference	Ratio
Projected Total Payroll	\$ 1,341,914	\$ 1,341,914	\$ (0)	100.0%
Employer Normal Cost	\$ 259,818	\$ 259,879	\$ 61	100.0%
Employer Normal Cost Rate (as a % of Projected Pay)	19.36%	19.37%	0.00%	
Actuarial Liability	\$ 17,030,833	\$ 16,952,983	\$ (77,850)	99.5%
Actuarial Value of Assets	<u>14,251,914</u>	<u>14,251,914</u>	<u>-</u>	100.0%
Unfunded Actuarial Liability	\$ 2,778,920	\$ 2,701,070	\$ (77,850)	97.2%
Amortization Amount (\$)	\$ 204,663	\$ 199,436	\$ (5,227)	97.4%
Amortization Rate (as a % of Projected Pay)	15.25%	14.86%	-0.39%	
Total Calculated Contribution Payable July 1 (\$)	\$ 464,481	\$ 459,314	\$ (5,167)	98.9%
Total Calculated Contribution Rate (as a % of Projected Pay)*	34.61%	34.23%	-0.39%	

**Prior to adjustment to reflect phase-in of the impact of the June 30, 2010 experience study over three years*

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**SECTION II
RETIREMENT VALUATION RECONCILIATION**

Table II - 4					
Los Angeles Fire and Police Pension Plan					
Actuarial Valuation as of June 30, 2012					
Contribution Comparison (by tier)					
(in thousands)					
	Segal	Cheiron	Difference	Ratio	
<u>Employer Normal Cost</u>					
Tier 1	N/A	N/A			
Tier 2	\$ 2,760	\$ 2,912	\$ 152	105.5%	
Tier 3	16,697	16,583	(114)	99.3%	
Tier 4	6,794	6,793	(1)	100.0%	
Tier 5 (without Harbor Port Police)	228,629	228,606	(23)	100.0%	
Tier 5 (Harbor Port Police)	2,208	2,224	16	100.7%	
Tier 6 (without Harbor Port Police)	2,716	2,746	30	101.1%	
Tier 6 (Harbor Port Police)	<u>13</u>	<u>14</u>	<u>1</u>	107.2%	
Total	\$ 259,818	\$ 259,879	\$ 61	100.0%	
<u>Amortization Amount (\$)</u>					
Tier 1	\$ 16,566	\$ 16,586	\$ 19	100.1%	
Tier 2	38,622	38,739	117	100.3%	
Tier 3	13,379	13,520	141	101.1%	
Tier 4	7,815	7,746	(68)	99.1%	
Tier 5 (without Harbor Port Police)	125,477	120,299	(5,178)	95.9%	
Tier 5 (Harbor Port Police)	914	735	(180)	80.4%	
Tier 6 (without Harbor Port Police)	1,882	1,805	(78)	95.9%	
Tier 6 (Harbor Port Police)	<u>7</u>	<u>5</u>	<u>(1)</u>	80.4%	
Total	\$ 204,663	\$ 199,436	\$ (5,227)	97.4%	
<u>Calculated Contribution Payable July 1 (\$)</u>					
Tier 1	\$ 16,566	\$ 16,586	\$ 19	100.1%	
Tier 2	41,383	41,652	269	100.7%	
Tier 3	30,076	30,103	27	100.1%	
Tier 4	14,608	14,539	(69)	99.5%	
Tier 5 (without Harbor Port Police)	354,106	348,906	(5,200)	98.5%	
Tier 5 (Harbor Port Police)	3,123	2,959	(163)	94.8%	
Tier 6 (without Harbor Port Police)	4,599	4,551	(48)	99.0%	
Tier 6 (Harbor Port Police)	<u>20</u>	<u>20</u>	<u>(0)</u>	98.1%	
Total	\$ 464,481	\$ 459,314	\$ (5,167)	98.9%	

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**SECTION II
RETIREMENT VALUATION RECONCILIATION**

Table II-5 City of Los Angeles Fire and Police Pension Plan Actuarial Valuation as of June 30, 2012 Total Data Comparison			
	Segal	Cheiron	Ratio of Cheiron/Segal
Active Members			
Count	13,396	13,396	100.00%
Vested Count	4,601	4,605	100.09%
Average Age	41.5	41.5	100.00%
Average Employment Service	14.5	14.5	100.00%
Total Projected Salaries	\$ 1,341,913,739	\$ 1,341,913,739	100.00%
Average Projected Salary	\$ 100,173	\$ 100,173	100.00%
Vested Terminated Members			
Count	62	53	85.48%
Average Age	45.8	45.7	99.76%
Average Benefit (At Age 50)	\$ 2,058	\$ 1,899	92.29%
Retired Members			
Count	7,830	7,828	99.97%
Average Age at Retirement	51.5	51.5	100.00%
Average Age	69.2	69.2	100.00%
Average Benefit*	\$ 5,483	\$ 5,479	99.93%
Disabled Members			
Count	2,183	2,182	99.95%
Average Age at Retirement	44.0	44.0	100.00%
Average Age	67.9	67.9	100.00%
Average Benefit*	\$ 4,475	\$ 4,471	99.91%
Beneficiaries			
Count	2,367	2,396	101.23%
Average Age	77.0	76.4	99.18%
Average Benefit*	\$ 3,946	\$ 3,969	100.59%

*Includes July 2012 COLA

SECTION III
HEALTH VALUATION RECONCILIATION

In this section we present detailed results of the replication of the June 30, 2012 Actuarial Valuation of the LAFPP Health Plan.

Using the same actuarial assumptions and methods from the 2012 valuation report we have attempted to replicate Segal's valuation results, including the following:

- Present value of future benefits
- Actuarial accrued liability
- Unfunded actuarial accrued liability
- Normal cost

When testing against different valuation systems, there is a generally acceptable tolerance of plus/minus 5.0%. With a larger plan, minor differences in actuarial procedures have a smaller impact on the key results. Given the size of the LAFPP plan, we anticipated our results would be much closer than 5.0%.

The results for the LAFPP plan fall within generally acceptable tolerances.

Technical Valuation Issues

There were a few areas where we believe the valuation should be calculated in a manner different than done by Segal. For our analysis we modified the following items:

- For members subject to the medical subsidy freeze, Segal valued the actual subsidies in effect for the 2011-12 plan year for all future years. In actuality, these subsidies will be calculated using the same formulas as for non-frozen members but with the maximum subsidy amounts frozen at the 2011-12 levels.. As such, the subsidies available for spousal coverage will decline as the non-Medicare retiree-only premiums grow in future years and consume a larger portion of the maximum non-Medicare subsidy. Subsidies for retirees are also impacted, as the subsidy amount for retirees electing a plan that cost less than the maximum subsidy amount in 2011-12 will grow until the maximum is reached. This issues affects both current and future retirees and both non-Medicare and Medicare-eligible subsidies.
- The value of spousal coverage is somewhat overstated in the valuation because the full cost of two-party coverage is valued over the retiree's lifetime. However, the two-party coverage is only payable while both the member and spouse are living so this approach overstates the liability to the extent that the spouse is assumed to predecease the retiree. We valued the incremental subsidy for spousal coverage only over the joint life of the retiree and spouse to more accurately reflect this liability.
- An inaccurate health subsidy was valued for more than 20% of the surviving spouses in payment on the valuation date. It appears this was due to a data processing issue. Our liability reflects the actual subsidy amount reported.

SECTION III
HEALTH VALUATION RECONCILIATION

- The criteria used to identify retirees who will be eligible for a health subsidy beginning at age 55 captures some retirees already receiving a subsidy, most commonly surviving spouses whose eligibility is based on the deceased member's date of birth. We valued these members based on their actual, immediate benefits instead.

We estimate the impact of these four changes in aggregate would decrease the present value of benefits by 1.6%, decrease the accrued liability by 1.8%, and decrease the normal cost by 0.5%.

On the following pages we show detailed charts comparing the results of our valuation (reflecting the changes described above) to Segal's, as well as a comparison of the data used in the two valuations. In reviewing the data, we took the raw data from the System and attempted to independently match the processed data that Segal used in its valuation.

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SECTION III
HEALTH VALUATION RECONCILIATION

Table III - 1
Los Angeles Fire and Police Pension Plan
Actuarial Valuation as of June 30, 2012
Present Value of Future Benefits Comparison
(in thousands)

	Segal	Cheiron	Difference	Ratio
Present Value of Future Benefits				
Active				
Retirement	\$ 1,424,136	\$ 1,398,980	\$ (25,156)	98.2%
Withdrawal	0	0	-	
Disability	143,160	141,862	(1,298)	99.1%
Total Active	\$ 1,567,296	\$ 1,540,842	\$ (26,454)	98.3%
Inactive	\$ -	\$ -	\$ -	
In Pay Status				
Retired	\$ 1,169,790	\$ 1,123,670	\$ (46,120)	96.1%
Disability	195,300	185,908	(9,392)	95.2%
Survivors	103,481	101,329	(2,151)	97.9%
Total In Pay Status	\$ 1,468,571	\$ 1,410,907	\$ (57,664)	96.1%
Total	\$ 3,035,867	\$ 2,951,749	\$ (84,118)	97.2%

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SECTION III
 HEALTH VALUATION RECONCILIATION

Table III - 2 Los Angeles Fire and Police Pension Plan Actuarial Valuation as of June 30, 2012 Normal Cost (OPEB) Comparison (in thousands)					
	Segal	Cheiron	Difference	Ratio	
Normal Cost (BOY)					
Retirement	\$ 46,611	\$ 45,208	\$ (1,403)	97.0%	
Withdrawal	0	0	-		
Disability	5,476	5,360	(116)	97.9%	
Total	\$ 52,087	\$ 50,568	\$ (1,519)	97.1%	
Present Value of Future Normal Costs					
Retirement	\$ 479,554	\$ 469,397	\$ (10,157)	97.9%	
Withdrawal	0	0	-		
Disability	57,025	56,275	(750)	98.7%	
Total	\$ 536,578	\$ 525,672	\$ (10,907)	98.0%	

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**SECTION III
HEALTH VALUATION RECONCILIATION**

**Table III - 3
Los Angeles Fire and Police Pension Plan
Actuarial Valuation as of June 30, 2012
Contribution (OPEB) Comparison
(in thousands)**

	Segal	Cheiron	Difference	Ratio
Projected Total Payroll	\$ 1,341,914	\$ 1,339,291	\$ (2,623)	99.8%
Employer Normal Cost	\$ 52,087	\$ 50,568	\$ (1,519)	97.1%
Employer Normal Cost Rate (as a % of Projected Pay)	3.88%	3.78%	-0.11%	
Actuarial Liability	\$ 2,499,289	\$ 2,426,077	\$ (73,212)	97.1%
Actuarial Value of Assets	927,362	927,362	-	100.0%
Unfunded Actuarial Liability	\$ 1,571,927	\$ 1,498,715	\$ (73,212)	95.3%
Amortization Amount (\$)	\$ 92,894	\$ 87,953	\$ (4,942)	94.7%
Amortization Rate (as a % of Projected Pay)	6.92%	6.57%	-0.36%	
Total Calculated Contribution (\$)	\$ 144,981	\$ 138,521	\$ (6,460)	95.5%
Total Calculated Contribution Rate (as a % of Projected Pay)*	10.80%	10.34%	-0.46%	

**Prior to adjustment to reflect phase-in of the impact of the June 30, 2010 experience study over three years*

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HEALTH VALUATION RECONCILIATION**

Table III - 4					
Los Angeles Fire and Police Pension Plan					
Actuarial Valuation as of June 30, 2012					
Contribution (OPEB) Comparison (by tier)					
(in thousands)					
	Segal	Cheiron	Difference	Ratio	
<u>Employer Normal Cost</u>					
Tier 1	N/A	N/A			
Tier 2	\$ 377	\$ 365	\$ (13)	96.6%	
Tier 3	3,980	3,772	(208)	94.8%	
Tier 4	1,518	1,483	(35)	97.7%	
Tier 5 (without Harbor Port Police)	44,478	43,269	(1,209)	97.3%	
Tier 5 (Harbor Port Police)	510	497	(13)	97.4%	
Tier 6 (without Harbor Port Police)	1,219	1,179	(40)	96.7%	
Tier 6 (Harbor Port Police)	<u>4</u>	<u>4</u>	<u>0</u>	108.7%	
Total	\$ 52,087	\$ 50,568	\$ (1,519)	97.1%	
<u>Amortization Amount (\$)</u>					
Tier 1	\$ 1,879	\$ 1,800	\$ (79)	95.8%	
Tier 2	48,480	45,442	(3,038)	93.7%	
Tier 3	3,809	3,535	(274)	92.8%	
Tier 4	2,758	2,820	62	102.2%	
Tier 5 (without Harbor Port Police)	35,317	33,742	(1,575)	95.5%	
Tier 5 (Harbor Port Police)	121	111	(9)	92.1%	
Tier 6 (without Harbor Port Police)	530	502	(28)	94.7%	
Tier 6 (Harbor Port Police)	<u>1</u>	<u>1</u>	<u>(0)</u>	92.4%	
Total	\$ 92,894	\$ 87,953	\$ (4,942)	94.7%	
<u>Calculated Contribution Payable July 1 (\$)</u>					
Tier 1	\$ 1,879	\$ 1,800	\$ (79)	95.8%	
Tier 2	48,858	45,807	(3,050)	93.8%	
Tier 3	7,789	7,307	(482)	93.8%	
Tier 4	4,276	4,302	27	100.6%	
Tier 5 (without Harbor Port Police)	79,795	77,011	(2,784)	96.5%	
Tier 5 (Harbor Port Police)	631	608	(23)	96.4%	
Tier 6 (without Harbor Port Police)	1,749	1,681	(68)	96.1%	
Tier 6 (Harbor Port Police)	<u>5</u>	<u>5</u>	<u>0</u>	105.8%	
Total	\$ 144,981	\$ 138,521	\$ (6,460)	95.5%	

**LOS ANGELES CITY EMPLOYEES' RETIREMENT SYSTEM
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**SECTION III
HEALTH VALUATION RECONCILIATION**

Table III-5 Los Angeles Fire and Police Pension Plan Actuarial Valuation as of June 30, 2012 Data Comparison			
	Segal	Cheiron	Ratio of Cheiron/Segal
Retired Members			
Count (Non-Disabled)	6,822	6,829	100.1%
Count (Disabled)	1,343	1,349	100.4%
Total Count	8,165	8,178	100.2%
Average Age*	71.5	71.8	100.4%
Surviving Spouses			
Count	1,553	1,570	101.1%
Average Age	79.3	79.0	99.6%
Retired Members Eligible for Future Health Subsidy			
Count (Non-Disabled)	332	324	97.6%
Count (Disabled)	187	184	98.4%
Count(Surviving Spouses)	96	51	53.1%
Total Count	615	559	90.9%
Average Age	50.3	50.8	101.0%
Active Members			
Count	13,396	13,395	100.0%
Average Age	41.5	41.5	100.0%
Average Employment Service	14.7	14.5	99.0%
Inactive Members			
Count	-	-	
Average Age	-	-	

**Includes Disabled Retirees*

SECTION IV
EXPERIENCE STUDIES, ASSUMPTIONS AND METHODS REVIEW

In this section we discuss our review of the assumptions and methods used in the Pension Plan and Health Plan valuations, as well as our review of the following Experience Studies:

- Review of Actuarial Economic Assumptions and Possible Board Action dated September 2, 2010
- Actuarial Experience Study – Analysis of Actuarial Experience During the Period July 1, 2004 through June 30, 2007
- Actuarial Experience Study – Analysis of Actuarial Experience During the Period July 1, 2007 through June 30, 2010

An actuarial valuation is designed to assess the ability of the Plan to meet its obligations. The validity of this assessment is only as good as the assumptions and methods it is based upon. The purpose of an experience study is thus to determine actuarial assumptions that are reasonable to predict future experience. The assumptions underlying an actuarial valuation can be divided into two types: economic and demographic, which deal with the characteristics and behavior of the Plan's members.

It should be noted the setting of actuarial assumptions involves a great deal of professional judgment and that setting such assumptions is both art and science. Two actuaries reviewing the same experience may reach different conclusions with respect to recommendations of actuarial assumptions. It is not our intent to substitute our judgment for the judgment of the consulting actuary to LAFPP. Rather it is our intent to determine whether the actuarial assumptions are reasonable based upon all of the data available.

In general, assumptions should be recommended based on the actuary's professional judgment combined with the Plan's experience during the study period, including prior relevant studies and the Plan's earlier experience, national experience and future trends. We found that the process used by Segal to prepare the Experience Study and to recommend the valuation assumptions was appropriate and that the assumptions developed generally comply with the guidance provided by the applicable Actuarial Standards of Practice (ASOPs). However, we offer the following recommendations and considerations for LAFPP and their actuary.

Overall Experience Analysis Comments

Three years of data is too short a period for measuring and identifying trends for most demographic assumptions. This is particularly true for the study period from July 1, 2007 through June 30, 2010 due to participants' and employers' responses to the significant market decline and its impact on participant security and financial resources. While the recommended changes to the assumptions are supported by the experience and may not have a material impact on the plan's liability, they may not be reflective of actual long-term trends.

As an alternative in the future we recommend the actuary consider the experience of prior experience studies when performing future studies to provide more credible experience of long-term changes in participant behavior. As an example, in both reports reviewed there is very clear

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experience regarding employee termination. It is industry specific and documented that there are relatively high termination rates in the first year of employment for Fire Fighters and Police Officers. However, after the first year of service there is almost no turnover. The following table illustrates the last two experience study results and current assumption.

Rates of Withdrawals (Fire)				
Years of Service	2004-2007	2007 - 2010	2008	2011
	Observed Rates	Observed Rates	Adopted Assumption	Adopted Assumption
0 - 1	9.54%	7.51%	8.00%	8.00%
1 - 2	0.95%	1.54%	4.00%	3.00%
2 - 3	0.53%	0.51%	3.00%	2.00%
3 - 4	1.00%	0.27%	2.00%	1.00%
4 - 5	0.59%	0.51%	2.00%	1.00%
Age				
20 - 24	0.00%	0.00%	2.00%	1.50%
25 - 29	0.00%	0.00%	2.00%	1.50%
30 - 34	0.00%	0.24%	1.20%	1.00%
35 - 39	0.66%	0.09%	0.70%	0.50%
40 - 44	0.46%	0.28%	0.45%	0.35%
45 - 49	0.10%	0.05%	0.20%	0.10%
50 - 54	0.18%	0.00%	0.00%	0.00%
55 - 59	0.35%	0.00%	0.00%	0.00%

Rates of Withdrawals (Police)				
Years of Service	2004-2007	2007 - 2010	2008	2011
	Observed Rates	Observed Rates	Adopted Assumption	Adopted Assumption
0 - 1	8.61%	9.55%	8.00%	8.00%
1 - 2	3.03%	1.60%	4.50%	4.00%
2 - 3	1.94%	1.71%	3.50%	3.00%
3 - 4	3.10%	2.03%	3.50%	3.00%
4 - 5	1.95%	1.75%	3.00%	2.50%
Age				
20 - 24	0.00%	0.00%	3.00%	2.50%
25 - 29	0.54%	1.85%	3.00%	2.50%
30 - 34	2.02%	0.49%	2.50%	2.00%
35 - 39	1.35%	0.82%	2.00%	1.50%
40 - 44	0.84%	0.49%	1.50%	1.00%
45 - 49	0.51%	0.55%	1.00%	0.70%
50 - 54	0.18%	0.21%	0.00%	0.00%
55 - 59	0.00%	0.00%	0.00%	0.00%

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EXPERIENCE STUDIES, ASSUMPTIONS AND METHODS REVIEW

It is clear that expectations in the industry and actual behavior are consistent and instead of a gradual change to match the low withdrawal rate experience, the assumption could be changed to reflect the expectations.

Regarding the retirement assumptions by tiers, based on the divergence of the actual experience from age to age and between the two consecutive studies, there appears to be insufficient data to suggest a discernible change in behavior for some of the tiers. For such tiers, the type of smooth progression of retirement rates that existed prior to the 2007 experience study may be more appropriate.

Specific comments regarding each assumption follow.

ECONOMIC ASSUMPTIONS

The questions guiding our review of the economic assumptions were the following:

- 1) Are the economic assumptions individually reasonable and reasonable as a set?
- 2) Are the economic assumptions reasonable given the Plan's experience?

We reviewed the valuation economic assumptions as well as their development in Segal's 2010 Experience Study Report and found them reasonable and appropriate overall. However, we did identify some areas for consideration for improvement for the 2013 Experience Study and for future evaluations.

The primary basis of our review was Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, which provides guidance on the process for selecting and evaluating economic assumptions for measuring obligations under defined benefit plans. Since the future is uncertain, there is no right answer for these assumptions and the actuary is instead to come up with their best estimates of the future economic conditions. Estimates should be based on a combination of past experience of both the Plan and the greater economy, future expectations of both the Plan and the economy as a whole, and professional judgment. The actuary should develop a best-estimate range for each assumption and then recommend a specific point within that range. The selected assumptions should be appropriate to the purpose and nature of the measurement and all of the assumptions together need to be consistent as a set. We found that Segal's process and results satisfy this ASOP.

Inflation

Inflation is a key assumption as it is a component of several other assumptions: investment return, general wage increase, and payroll increase. Segal's recommended rate of 3.5% is significantly higher than what is expected by most investment professionals and economists, but as noted by Segal, the time horizon for LAFPP is longer than these individuals are typically considering. We concur with Segal's assessment of recent historical trends and with the lowering of the inflation assumption at the time of the last study. However, we believe that a

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EXPERIENCE STUDIES, ASSUMPTIONS AND METHODS REVIEW

range for reasonable assumptions is between 2.5% and 3.5% and Segal's 3.5% recommendation is at the high end of our reasonable range, and so we would recommend consideration of dropping this assumption further.

The expected long-term inflation rate given in the 2013 Trustees Report for the Social Security Administration was 2.8% in the intermediate economic scenario, with the high cost estimate at 3.8%. We further note that while LAFPP should not base their assumptions on what other systems are doing, it is informative to consider what they are doing and in the case of inflation, many systems have recently decreased their inflation assumption to 3.0% or lower. The NCPERS 2012 Fund Membership Study showed an average inflation rate of 3.4% for surveyed public sector plans, with 3.0% being the most common (CalSTRS uses 3.0% and CalPERS uses 2.75%).

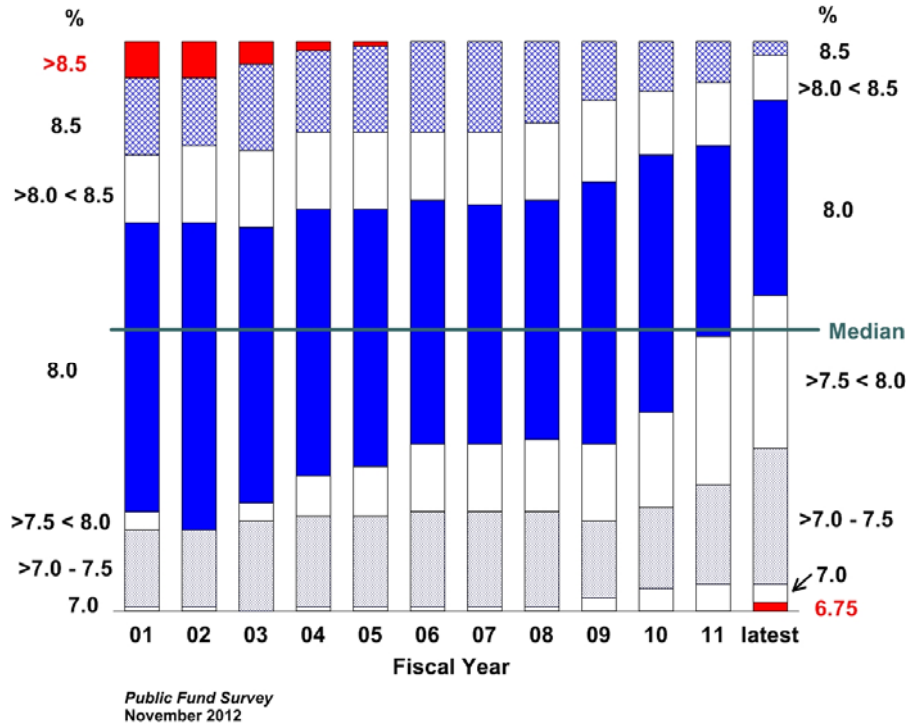
Investment Return

The investment return assumption is key to developing the expected cost of the Plan as it determines the impact of the time value of money in discounting expected benefit payments. It is comprised of two pieces, the inflation assumption previously discussed and the assumed net real rate of return. We concur with Segal's "building block" approach to developing this assumption and find that their recommendation of 7.75% is reasonable based on the asset allocation in place. We also agree with Segal's approach to measure the risk associated with the current rate by the application of confidence measurements. However, the most recent assumption change reflects a small compromise in the level of confidence that the assumption will be met (62% vs. 65%). With declining long-term expectations in various market sectors, we recommend the Board maintain its previous target of a 65% or better confidence level. If LAFPP decides to drop their inflation rate further as we have recommended, this will result in decreasing the investment return as well.

It should be noted that there has been a significant trend by public sector pension plans to lower their discount rates. The following graph is based upon surveys performed by the National Association of State Retirement Administrators (NASRA). The colored bars represent the percentage of funds using a particular discount rate (e.g., blue is 8.0%).

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Finally, the investment return assumption is adjusted by 0.45% for the payment of administrative and investment expenses. This assumption seems reasonable based on the historical data presented.

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General Wage Growth

In addition to determining the rate of payroll growth for contribution payments, this is also a component of the individual salary increase assumption. We will discuss the general wage growth assumption, the combination of price inflation plus real pay growth here, while the longevity and promotion component of the individual salary increase assumption will be discussed in the demographic assumptions section.

The first component of the general wage growth assumption, price inflation, has been discussed previously. The remaining piece, real pay growth, is the amount by which it is expected that wages will grow more rapidly than general price levels. We find that Segal's 0.75% recommendation for the real pay growth, while reasonable, should be considered carefully in the next study, as budget pressures may continue to depress productivity increases in the public sector.

We further note that caution should be exercised in drawing any conclusions on the basis of LAFPP's own experience of average increases as shown in Segal's report, as general wage growth is typically reasonably homogenous across the nation. Segal's report properly notes this fact in their description of the real pay growth assumption as a more macroeconomic assumption.

Also, caution regarding using LAFPP's own experience to evaluate the real pay increase is necessary due to the fact that Segal is comparing the average salary of all members in the Plan at the beginning of each year with the average salary of all members in the Plan at the end of each year rather than looking at the average of the change in salary for members present at both the beginning and end of each year. We recommend that Segal consider evaluating the Plan's experience of pay growth based on individual member's actual salaries in the future rather than changes in aggregate salaries.

COLA

Segal has recommended that the assumption for future Cost-of-Living Adjustments (COLAs) be 3.5% for Tiers 1 and 2 based on the inflation assumption and the cap rate of 3.0% for Tiers 3 through 5. However, they do not discuss the COLA assumption in any detail within the experience study.

Simulation analyses we have performed for other clients suggest that expected growth in the COLA should be less than the cap due to annual variation in the Consumer Price Index (CPI), even if the CPI averages 3.5% over the long-term. Because Tiers 3 and 4 have no banking of the excess, as we understand the plan provisions, we would suggest an assumption below the cap for these tiers. Even for Tiers 5 and 6, which do provide for banking of the excess, it may be appropriate to use a lower assumption.

We therefore recommend this assumption be included in the next experience study with consideration of performing a simulation analysis to study it specifically for Tiers 3 through 6.

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This approach is suggested in the Actuarial Standard of Practice governing the measurement of pension obligations (ASOP No. 4), where the impact of using a deterministic procedure (i.e. assuming inflation will be 3.5% every year) could result in a poor measurement of the impact of certain benefit provisions.

Crediting Rate for Member Contributions

An assumption of 5.00% is used to approximate the crediting rate on member contributions. As described in Board Rule 5.1, interest is credited to active member contribution accounts every six months based on the earned investment income during that time, excluding profits and losses from the sale of securities. For the past few years, this methodology has resulted in an annualized crediting rate significantly less than the assumption. For instance, for the six-month period ending June 30, 2013, the interest crediting rate was 1.40% (less than 3% annualized). Although the current interest rate environment may not continue into the future, we recommend that an analysis of this assumption be included in the next experience study.

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DEMOGRAPHIC ASSUMPTIONS

The questions guiding our review of the demographic assumptions were the following:

- 1) Do the demographic assumptions, including rates of termination from active service due to retirement, withdrawal, disability, and death, follow reasonable patterns?
- 2) Do the demographic assumptions reflect the experience of the Plan?
- 3) Are the experience of the Plan and the resulting assumption recommendations clearly communicated?

The basis for the development of these demographic assumptions is Actuarial Standard of Practice No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. Based on this ASOP, the actuary is to use their professional judgment to select assumptions for expected future outcomes based on past experience and future expectations and these assumptions should be reasonable and not expected to result in significant cumulative actuarial gains and losses. Further, an experience study is to be used to compare actual experience with the expected experience given by the demographic assumptions. We found that Segal met the standards set by this document.

Based on our review of the June 30, 2012 valuation and the 2010 Experience Study, we believe that the demographic assumptions recommended by Segal are reasonable both individually and as an assumption set.

A three year period is a small sample size for most demographic assumptions to allow for credible data and discernible long-term changes in member behavior. We suggest the previous three year studies be taken into account to avoid adding volatility in the selection of these assumptions. An alternative would be to lengthen the period of time covered by demographic experience studies, perhaps to five years.

Overall, Segal does a good job of explaining how decrements and exposures should be compared in examining actual experience versus expected experience in their introduction to demographic assumptions in the experience study, but they do not consistently show this information for each decrement within their report. We recommend that they include both actual number of terminations, expected number of terminations, exposure counts and the ratios of actual decrements to expected for each assumption within the body of their report. In addition, while they highlight that the number of exposures and number of decrements determines the reliability of the observed experience in their introduction, they do not include analysis of this credibility within their evaluation of the decrements. We recommend that they add this information to help communicate how heavily the experience should be considered for each approach. We also believe Segal could strengthen their report by providing more explanation of the process for how prior rates were adjusted based on the observed experience to get the proposed assumptions.

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EXPERIENCE STUDIES, ASSUMPTIONS AND METHODS REVIEW

Mortality Assumptions

Based on the ratios of actual versus expected deaths, we find that Segal's recommendations for retired and disabled mortality result in a reasonable margin, with the expectation being that less deaths will occur than the historical experience suggests. This margin is consistent with actuarial best practices and ASOP No. 35. While we find Segal's mortality assumptions to be reasonable, there are some areas that we recommend be considered for improvement.

While the proposed tables provide a reasonable level of conservatism in aggregate, details should be provided by gender in order for this conservatism to be better evaluated. While there may not be credible data for female mortality experience now, over time this will become increasingly important and identifying baseline experience will be helpful.

We also recommend that Segal consider examining the mortality experience weighted by benefit amounts rather than just the participant counts for future experience studies. This can provide additional information about the relative impact of the actual mortality experience to the projected cost of the Plan. An alternative to this benefit amount weighted analysis of experience would be to examine the mortality experience of various age groups.

Withdrawal Assumptions

We found Segal's termination rates to be reasonable. However, there is a clear trend of much lower rates after the first year of employment. Over the last two studies Segal has continued to move closer to this experience, but we recommend Segal consider moving more directly to the actual experience in cases such as these, where there is a general expectation and clear demonstration of the experience in recent studies, particularly among the Fire Fighters.

Disability Assumptions

We found Segal's disability rates to be reasonable. The rates generally increase with age as would be expected and are reasonable in terms of the Plan's recent experience.

We also found Segal's assumptions for the benefit amounts for service connected and non-service connected disabilities to be reasonable based on the experience available.

Rates of Retirement

We believe Segal's rates are reasonable and reflect significant patterns in the occurrence of the Plan's retirements as well as significant plan provisions. However, while we concur with setting rates by tiers to reflect substantial differences in plan provisions, it may be difficult to credibly measure the experience with three year increments for some of the tiers. In particular, for Tiers 2 and 4 it is not clear whether the data has sufficient credibility to justify the movement away from the smooth progression of retirement rates that was in place prior to the 2007 experience study.

SECTION IV
EXPERIENCE STUDIES, ASSUMPTIONS AND METHODS REVIEW

This may be an instance where it would be prudent to consider the experience from the previous study.

We also recommend that Segal add exposure counts as well as actual versus expected ratios of retirements to their report. This would help clarify whether the experience is sufficiently credible to support a change in the rates.

We concur with Segal's assumptions regarding the Deferred Retirement Option Plan (DROP), including the 95% utilization rate and the assumption that DROP participants will remain in the DROP for five years.

Promotion and Merit

This assumption represents the expected increases to an individual's salary in addition to the general increases due to inflation and real wage increases discussed previously in the section on economic assumptions. We found the general pattern developed by Segal to be reasonable with decreasing increases with higher service and found Segal's methodology to be appropriate with respect to actuarial standards of practice.

One area of concern with public sector pension plans that utilize final average salary in the determination of the retirement benefit is the practice of income spiking in the final years of employment. If there is any evidence of the ability for participants to dramatically increase their final average salary, this should be reflected in the assumptions to capture the additional benefits. This practice, which for some plans results in actual benefits materially greater than projected, does not appear to be an issue for LAFPP since overtime is not included in pensionable salary.

Other Assumptions

In general, we find the remaining assumptions made by Segal to be appropriate.

Segal's assumptions related to family composition are reasonable. This includes the percentage of active members assumed married/domestic partner and the assumed average age difference between spouses. The percent married is well supported by the experience and we agree with Segal's recommendation. Segal's recommendation regarding the age difference between spouses is also reasonable.

Finally, the valuation report assumes 1.0 year of service per year for future accruals. While there is no discussion of this in the experience study, we believe this assumption is reasonable.

SECTION IV
EXPERIENCE STUDIES, ASSUMPTIONS AND METHODS REVIEW

ACTUARIAL METHODS

The actuarial methods include the asset method, the cost method and the funding policy, including amortization of the unfunded accrued liability (UAL).

Actuarial Asset Method

The market value of assets represents a “snap-shot” value as of the last day of the fiscal year that provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. Because these fluctuations would cause volatility in employer contributions, an actuarial value of assets is developed.

The actuarial value of assets typically represents an asset value based on averaging or smoothing year-to-year market value returns for purposes of reducing the resulting volatility on contributions.

The actuarial value of assets for LAFPP is determined as the market value of assets less unrecognized returns in each of the last seven years. Unrecognized return is equal to the difference between the actual and expected returns on a market value basis and is recognized over a seven year period. (Unrecognized returns established prior to July 1, 2008 are recognized over a five year period). The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.

Based on our review this method is being applied accurately. However, we do have concerns with this method. In our opinion, the use of a long asset gain or loss recognition period combined with a very wide corridor (60% to 140%) is at least questionable, if not unreasonable. If there is an opportunity for the Board to consider a tighter corridor this concern could be remedied without a cost impact at this time.

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The Actuarial Standard of Practice which governs asset valuation methods (ASOP No. 44) requires that the actuarial asset value should fall within a “reasonable range around the corresponding market value” and that differences between the actuarial and the market value should be “recognized within a reasonable period of time.”

The standard also states that in lieu of satisfying both requirements above, the actuarial smoothing method can be deemed acceptable if the method either “(i) produces values within a sufficiently narrow range around market value or (ii) recognizes differences from market value in a sufficiently short period.” Our view is that it is a stretch to consider the seven-year smoothing period “sufficiently short,” or to consider the 60%/140% corridor to produce “values within a sufficiently narrow range” around market value. While the ASOPs don’t specifically prohibit this combination, it can be inferred that using them in combination could put the method outside ASOP 44’s intent. We recommend that Segal reconsider the use of these methods at the time of the next experience study.

SECTION IV
EXPERIENCE STUDIES, ASSUMPTIONS AND METHODS REVIEW

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Actuarial Cost and Amortization Methods

The Plan's cost method is Entry Age Normal (EAN), which is by far the most commonly used method in the public sector. The recommended contribution rate is based on the Normal Cost, plus amounts needed to amortize any surplus or Unfunded Actuarial Liability (UAL). The UAL is amortized in layers, and beginning with the June 30, 2012 valuation, gains and losses are amortized over 20 years, assumptions and method changes are amortized over 25 years, plan changes are amortized over 15 years, and actuarial surplus, if any, is amortized over 30 years.

The UAL for Tier 1 is amortized as a level dollar amount while the UAL attributable to Tiers 2 through 6 are amortized as a level percentage of pay, with payments assumed to grow by 4.25% per year (the assumption for inflation plus real wage growth).

The amortization method used to develop the Annual Required Contribution (ARC) meets the minimum requirements of the present GASB standards; however, the new GASB Statements No. 67 and No. 68 will require a number of changes for disclosure purposes.

The amortization policy used by LAFPP is reasonable, with several positive changes made for the June 30, 2012 valuation, including shorter amortization periods for plan amendments and changes in assumptions and methods, and a longer amortization period for funding surplus. However, the revised amortization period for experience gains and losses (increased from 15 to 20 years) is at the top of what we would consider reasonable based on the principle of demographic matching. The result of this policy is to spread the gains and losses beyond the average expected retirement of the current active population.

Also, while the amortization period for assumption changes was lowered from 30 to 25 years, this period still mitigates the correction of any assumptions; for example, a change in mortality to reflect longevity may end up being funded not just beyond the working life, but beyond the retired life. For this assumption, we would recommend coupling the amortization period with a strong (conservative) projection scale.

Finally, it is worth noting that although the plan's amortization policy is reasonable and its funding level above average for public sector pension plans as a whole, other metrics illuminate the challenges and risks that LAFPP still faces. For example, the calculated employer and member contributions in the June 30, 2012 valuation are more than \$120 million less than the value of benefits earned in a year (the normal cost) plus interest on the unfunded actuarial liability (UAL) when valued using the market asset value. The plan is also in a negative cash flow position, with contributions covering only 80% of benefit payouts, so it is relying on investment returns to pay for current benefits. We are not suggesting any action on these issues, but they are areas of risk that should be regularly discussed.

APPENDIX A
RETIREMENT ASSUMPTIONS, METHODS AND PLAN PROVISIONS

A. Actuarial Assumptions

In our audit process, we applied the following assumptions which are the same as those applied in the June 30, 2012 valuation by Segal.

1. Investment Return Assumption

7.75% compounded annually, net of expenses

2. Interest Crediting Rate on Member Contributions

5.0% compounded annually

3. Cost-of-Living Adjustment (COLA)

3.5% of Tiers 1 and 2 retirement income and 3.0% of Tiers 3, 4, 5 and 6 retirement income

4. Family Composition

86% of all participants are assumed to be married.

Spouses of male members are assumed to be three years younger than the member and spouses of female members are assumed to be three years older than the member.

5. Salary Increase Rate

The sum of three components (Inflation rate, “Across-the-Board” salary increase rate, Merit and Longevity increase rate)

Inflation rate: 3.50%

“Across-the-Board” salary increase rate: 0.75%

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The additional Merit and Longevity increase rate based on service

Years of Service	Additional Salary Increase
0	8.00%
1	7.00%
2	4.50%
3	4.00%
4	3.50%
5	3.20%
6	2.75%
7	2.50%
8	2.25%
9	2.25%
10	2.00%
11 or more	1.00%

6. Rates of Termination

Rates of Termination		
Less than 5 years Years of Service (Withdrawal)		
Service	Fire	Police
0 - 1	8.00%	8.00%
1 - 2	3.00%	4.00%
2 - 3	2.00%	3.00%
3 - 4	1.00%	3.00%
4 - 5	1.00%	2.50%

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Rates of Termination		
More than 5 years Years of Service (Vested Termination)		
Age	Fire	Police
20	1.50%	2.50%
25	1.50%	2.50%
30	1.20%	2.20%
35	0.70%	1.70%
40	0.41%	1.20%
45	0.20%	0.82%
50	0.04%	0.28%
55	0.00%	0.00%
60	0.00%	0.00%

No vested termination is assumed after a member is eligible for retirement.

7. Rates of Disability

Rates of Disability		
Age	Fire	Police
20	0.02%	0.02%
25	0.02%	0.03%
30	0.03%	0.05%
35	0.06%	0.11%
40	0.15%	0.29%
45	0.26%	0.46%
50	0.42%	0.56%
55	1.40%	1.08%
60	4.40%	1.46%

90% of disabilities are assumed to be service connected.

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RETIREMENT ASSUMPTIONS, METHODS AND PLAN PROVISIONS**

8. Rates of Mortality (Preretirement)

Rates of Mortality (Preretirement)		
Age	Male	Female
20	0.03%	0.02%
25	0.04%	0.02%
30	0.04%	0.02%
35	0.05%	0.03%
40	0.08%	0.05%
45	0.11%	0.08%
50	0.16%	0.12%
55	0.24%	0.19%
60	0.42%	0.31%

All preretirement deaths are assumed to be service connected.

9. Rates of Mortality (Postretirement) for Healthy Lives

Postretirement mortality rates for healthy lives are based on the RP-2000 Combined Healthy Mortality Table (separate for males and females), set back four years for members and set back two years for beneficiaries

10. Rates of Mortality (Postretirement) for Disabled Lives

Postretirement mortality rates for disabled lives are based on the RP-2000 Combined Healthy Mortality Table (separate for males and females), set back two years

11. Disability Benefits

Service Connected:	<u>Years of Service</u>	<u>Benefit</u>
	Less than 20	55% of Final Average Salary
	20-30	65% of Final Average Salary
	More than 30	75% of Final Average Salary

Non-Service Connected: 40% of Final Average Salary

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12. Rates of Retirement

Rates of Retirement						
Age	Fire			Police		
	Tiers 2&4	Tiers 3&5	Tier 6	Tiers 2&4	Tiers 3&5	Tier 6
41	1.00%	0.00%	0.00%	8.00%	0.00%	0.00%
42	1.00%	0.00%	0.00%	8.00%	0.00%	0.00%
43	1.00%	0.00%	0.00%	10.00%	0.00%	0.00%
44	1.00%	0.00%	0.00%	10.00%	0.00%	0.00%
45	1.00%	0.00%	0.00%	10.00%	0.00%	0.00%
46	1.00%	0.00%	0.00%	8.00%	0.00%	0.00%
47	1.00%	0.00%	0.00%	8.00%	0.00%	0.00%
48	2.00%	0.00%	0.00%	8.00%	0.00%	0.00%
49	2.00%	0.00%	0.00%	8.00%	0.00%	0.00%
50	3.00%	5.00%	3.00%	8.00%	10.00%	8.00%
51	3.00%	5.00%	3.00%	10.00%	10.00%	10.00%
52	4.00%	5.00%	4.00%	10.00%	10.00%	10.00%
53	5.00%	5.00%	5.00%	15.00%	10.00%	15.00%
54	5.00%	8.00%	5.00%	15.00%	13.00%	15.00%
55	10.00%	10.00%	10.00%	20.00%	16.00%	18.00%
56	15.00%	12.00%	12.00%	20.00%	18.00%	18.00%
57	15.00%	15.00%	15.00%	20.00%	22.00%	22.00%
58	15.00%	18.00%	18.00%	25.00%	25.00%	25.00%
59	15.00%	20.00%	20.00%	25.00%	30.00%	30.00%
60	20.00%	25.00%	25.00%	25.00%	30.00%	30.00%
61	20.00%	30.00%	30.00%	25.00%	30.00%	30.00%
62	20.00%	30.00%	30.00%	25.00%	30.00%	30.00%
63	25.00%	35.00%	35.00%	30.00%	30.00%	30.00%
64	30.00%	40.00%	40.00%	40.00%	30.00%	30.00%
65	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

DROP Program: Of all members expected to retire with a service retirement benefit, a 95% DROP utilization rate is applied if they also satisfy the requirements for participating in the DROP. Members are assumed to remain in the DROP for 5 years.

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RETIREMENT ASSUMPTIONS, METHODS AND PLAN PROVISIONS

B. Actuarial Methods

1. Asset Valuation Method

Market value of assets less unrecognized returns. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period (unrecognized returns established before July 1, 2008 are recognized over a five-year period). The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets.

2. Actuarial Funding Method

The Entry Age Normal actuarial funding method is used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement. The actuarial liability is the difference between the present value of future benefits and the present value of future normal cost. The unfunded actuarial liability (UAL) is the difference between the actuarial liability and the actuarial value of assets.

Changes in surplus or UAL due to actuarial gains or losses are amortized over separate twenty year periods as a level percentage of payroll. Changes from plan amendments are amortized over separate fifteen year periods as a level percentage of payroll. Changes from assumption changes are amortized over separate twenty-five year periods as a level percentage of payroll. For Tier 1, the UAL is amortized with level dollar amounts ending on June 30, 2037. For Tiers 2 through 4, the UAL is amortized as a level percentage of payroll from the respective employer (City or Harbor Port Police). For Tiers 5 and 6, the UAL is amortized as a level percentage of payroll from the combined tiers for the respective employer (City or Harbor Port Police).

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C. Summary of Key Substantive Plan Provisions

Final Average Salary (§ 1502, § 1602, § 1702, § 4.2002)

Tiers 3, 4, 5

Monthly average salary actually received during any 12 consecutive months of service

Tiers 6

Monthly average salary actually received during any 24 consecutive months of service

Normal Pension Base (§ 1302, § 1406)

Tiers 1, 2

Final monthly salary rate

COLA (§ 1328, § 1422, § 1516, § 1616, § 1716, § 4.2016)

Tiers 1, 2

Commencing July 1 based on changes to Los Angeles area consumer price index

Tiers 3, 4

Commencing July 1 based on changes to Los Angeles area consumer price index to a maximum of 3% per year, COLA is prorated in the first year of retirement

Tiers 5, 6

Commencing July 1 based on changes to Los Angeles area consumer price index to a maximum of 3% per year, excess banked. COLA is prorated in the first year of retirement

Service Retirement Benefit (§ 1304, § 1408, § 1504, § 1604, § 1704, § 4.2004)

Tier 1

Age & Service Requirement: 20 years of service

Amount:

<u>Years of Service</u>	<u>Benefit</u>
20	40% of Normal Pension Base
20 to 25	Additional 2% for each year over 20 and under 25
25	50% of Normal Pension Base
25 to 35	Additional 1 2/3% for each year over 25 and under 35
35+	66 2/3% of Normal Pension Base

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RETIREMENT ASSUMPTIONS, METHODS AND PLAN PROVISIONS

Tier 2

Age & Service Requirement: 20 years of service

Amount:

Years of Service Benefit

Less than 25	2% of Normal Pension Base per year of service
25+	55% plus 3% per year over 25 to a maximum of 70% of Normal Pension Base

Tier 3

Age & Service Requirement: Age 50 and 10 years of service

Amount:

Years of Service Benefit

Less than 20	2% of Final Average Salary per year of service
20+	For each additional year over 20, 3% of Final Average Salary per year over 20 to a maximum of 70% Final Average Salary

Tier 4

Age & Service Requirement: 20 years of service

Amount:

Years of Service Benefit

20	40% of Final Average Salary
20+	For each additional year over 20, 3% of Final Average Salary per year over 20 to a maximum of 70% Final Average Salary

Tier 5

Age & Service Requirement: Age 50 and 20 years of service

Amount:

Years of Service Benefit

20	50% of Final Average Salary
20+	For each additional year over 20, 3% of Final Average Salary per year over 20, except 30 th year where 4% is provided, to a maximum of 90% Final Average Salary

Tier 6

Age & Service Requirement: Age 50 and 20 years of service

Amount:

Years of Service Benefit

20	40% of Final Average Salary
21 to 25	Additional 3% of Final Average Salary for years 21 through 25
26 to 30	Additional 4% of Final Average Salary for years 26 through 30

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31+ Additional 5% of Final Average Salary per year over 30, to a maximum of 90% of Final Average Salary

Deferred Retirement Option Plan (DROP) (§ 4.2100 – 4.2109)

<u>Tier</u>	<u>Eligibility</u>
2	25 years of service
3	Age 50 and 25 years of service
4	25 years of service
5	Age 50 and 25 years of service
6	Age 50 and 25 years of service

Benefit

DROP benefits (calculated using age, service, and salary at the commencement date of participation in DROP) will be credited to a DROP account with interest at 5% annually. Members are required to make normal member contributions. DROP benefits receive annual COLA while in DROP (limited to 3% for all Tiers) Members may participate in DROP for up to 5 years.

Death After Retirement (§ 1314, § 1316, § 1414, § 1508, § 1608, § 1708, § 4.2008, § 4.2008.5)

Tier 1

Service Retirement

Pension equal to the same percentage of the Member's Normal Pension Base to a maximum of 50%.

Service Connected Disability

50% of Member's Normal Pension Base.

Nonservice Connected Disability

40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.

Tier 2

Service Retirement

Pension equal to the same percentage of the Member's Normal Pension Base to a maximum of 55%

Service Connected Disability

50% of the Member's Normal Pension Base, or 55% of the Member's Normal Pension Base if Member had at least 25 years of service at the date of death.

Nonservice Connected Disability

40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay (nonservice connected pension base).

Tier 3, 4

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Service Retirement

Pension equal to 60% of the pension received by the deceased Member.

Service Connected Disability

If death occurs within three years of the Member's effective date of pension, then the eligible spouse or designated beneficiary shall receive 75% of the Final Average Salary. Otherwise, a pension equal to 60% of the pension received by the deceased Member immediately preceding the date of death.

Nonservice Connected Disability

Pension equal to 60% of the pension received by the deceased Member.

Tier 5

If former Tier 2 member, see Tier 2. Otherwise, see Tier 3.

Tier 6

Service Retirement

Pension equal to 70% of the pension received by the deceased Member.

Service Connected Disability

If death occurs within three years of the Member's effective date of pension, then the eligible spouse or designated beneficiary shall receive 80% of the Final Average Salary. Otherwise, a pension equal to 80% of the pension received by the deceased Member immediately preceding the date of death.

Nonservice Connected Disability

Pension to equal 70% of the pension received by the deceased Member.

Death Before Retirement (§ 1314, § 1316, § 1414, § 1508, § 1608, § 4.2008, § 1708)

Tier 1

Eligible for Service Retirement

Service Requirement: 20 years of service

Amount: 100% of Member's accrued service retirement Member would have received, not to exceed 50% of Normal Pension Base

Service Connected

Service Requirement: None

Amount: 50% of Member's Normal Pension Base

Nonservice Connected

Service Requirement: 5 years of service

Amount: 40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.

Tier 2

Eligible for Service Retirement

Service Requirement: 20 years of service

Amount: 100% of Member's accrued service retirement Member would have received, not to exceed 55% of Normal Pension Base

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Service Connected

Service Requirement: None

Amount: 50% of Member's Normal Pension Base, or 55% of the Member's Normal Pension Base if Member had at least 25 years of service at the date of death.

Nonservice Connected

Service Requirement: 5 years of service

Amount: 40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay (nonservice connected pension base).

Tier 3, 4

Eligible for Service Retirement

Service Requirement: 10 years of service for Tier 3, 20 years of service for Tier 4

Amount: 80% of service retirement Member would have received, not to exceed 40% of the Member's Final Average Salary.

Service Connected

Service Requirement: None

Amount: 75% of the Member's Final Average Salary.

Nonservice Connected

Service Requirement: 5 years of service

Amount: 30% of the Member's Final Average Salary

Basic Death Benefit

If Member has at least one year of service, in addition to return of contributions, beneficiary receives the Member's one-year average monthly salary times years of completed service (not to exceed 6 years)

Tier 5

Eligible for Service Retirement

Service Requirement: 20 years of service

Amount: For former Tier 2, 100% of Member's accrued service retirement Member would have received, not to exceed 55% of Normal Pension Base. For members who are not former Tier 2, 40% of the Member's Final Average Salary

Service Connected

Service Requirement: None

Amount: 75% of the Member's Final Average Salary payable to an eligible spouse or designated beneficiary.

Nonservice Connected

Service Requirement: 5 years of service

Amount: For former Tier 2, 40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay. For members who are not former Tier 2, 30% of the Member's Final Average Salary.

Basic Death Benefit

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If Member has at least one year of service, in addition to return of contributions, beneficiary receives the Member's one-year average monthly salary times years of completed service (not to exceed 6 years)

Tier 6

Service Connected

Service Requirement: None

Amount: 80% of the Member's Final Average Salary

Nonservice Connected

Service Requirement: 5 years of service

Amount: 50% of the Member's Final Average Salary

Basic Death Benefit

If Member has at least one year of service, in addition to return of contributions, beneficiary receives the Member's two-year average monthly salary times years of completed service (not to exceed 6 years)

Disability (§ 1310, § 1312, § 1412, § 1506, § 1606, § 4.2006, § 1706)

Tier 1

Service Connected

Service Requirement: None

Amount: 50 % to 90% of Normal Pension Base depending on severity of disability, with a minimum of Member's service pension percentage rate.

Nonservice Connected

Service Requirement: 5 years of service

Amount: 40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.

Tier 2

Service Connected

Service Requirement: None

Amount: 50 to 90% of Normal Pension Base depending on severity of disability, with a minimum of Member's service pension percentage rate.

Nonservice Connected

Service Requirement: 5 years of service

Amount: 40% of highest monthly salary as of Member's retirement for basic rank of Police Officer III or Firefighter III, and the highest length of service pay.

Tier 3, 4, 5, 6

Service Connected

Service Requirement: None

Amount: 30% to 90% of Final Average Salary depending on severity of disability with a minimum of 2% of Final Average Salary per year of service.

APPENDIX A
RETIREMENT ASSUMPTIONS, METHODS AND PLAN PROVISIONS

Nonservice Connected

Service Requirement: 5 years of service

Amount: 30% to 50% of Final Average Salary depending on severity of disability.

Deferred Withdrawal Retirement Benefit (Vested) (§ 1504, § 1704, § 4.2004)

Tier 3

Age and Service Requirement: Age 50 with 10 years of service

Amount: See Tier 3 Service Retirement

Tier 5, Tier 6

Age and Service Requirement: Age 50 with 20 years of service

Amount: Member is entitled to receive a service pension using Tier 3 retirement formula.

Normal Member Contributions (§ 1324, § 1420, § 1514, § 1614, § 1714, § 4.2014)

Members are exempt from making contributions if their continuous service exceeds 30 years for Tier 1 through 4, and 33 years for Tier 5 and 6. Members not in Tier 6 may pay a 2% contribution on their base salary retroactive to August 15, 2011 for a period of 25 years or until retired from the Plan to avoid a freeze on their retiree health subsidy.

Tier 1 - Normal contribution rate of 6%.

Tier 2 - Normal contribution rate of 6% plus half of the cost of the cost of living benefit to a maximum of 1%.

Tier 3 - Normal contribution rate of 8%.

Tier 4 - Normal contribution rate of 8%

Tier 5 - Normal contribution rate of 9% with the city of Los Angeles paying 1% provided that LAFPP is at least 100% actuarially funded for pension benefits.

Tier 6 - Normal contribution rate of 9%, plus 2% additional contributions to support funding of retiree health benefits. The additional 2% contributions shall not be required for members with more than 25 years of service.

**APPENDIX B
HEALTH ASSUMPTIONS, METHODS AND PLAN PROVISIONS**

A. Actuarial Assumptions (Health-Specific)

In our audit process, we applied the following assumptions which are the same as those applied in the June 30, 2012 valuation by Segal. All assumptions not shown here are the same as in the June 30, 2012 retirement plan valuation.

1. Health Care Cost Trend Rates

Medical

The following trend rates apply to all medical plan premiums:

Year Ending June 30,	Annual Increase
2013	8.50%
2014	8.00%
2015	7.50%
2016	7.00%
2017	6.50%
2018	6.00%
2019	5.50%
2020+	5.00%

The maximum non-Medicare medical subsidy amount is assumed to increase at the lesser of 7% annually or the rate shown above.

Dental

5.00% for all years

Medicare Part B Premium Trend

5.00% for all years

2. Medical Participation

Active members and retired members valued with a deferred benefit are assumed to elect medical coverage at the following rates:

Years of Service	Pre-Medicare	Medicare Eligible
10-14	45%	80%
15-19	60%	85%
20-24	70%	90%
25 +	95%	95%

**APPENDIX B
HEALTH ASSUMPTIONS, METHODS AND PLAN PROVISIONS**

3. Dental Participation

75% of retirees are assumed to elect dental coverage. All future retirees are assumed to receive the maximum dental subsidy.

4. Plan Election

All future retirees are assumed to elect a plan based on the assumptions shown below. For retirees who are currently under age 65, the Medicare-eligible assumptions also apply when they reach age 65.

Assumed Plan Elections for Fire Retirees		
Plan	Pre-Medicare	Medicare Eligible
Fire Medical	75%	90%
Kaiser	15%	10%
Blue Cross	5%	0%
California Care	5%	0%

Assumed Plan Elections for Police/Harbor Retirees		
Plan	Pre-Medicare	Medicare Eligible
Blue Cross	65%	75%
California Care	15%	10%
Kaiser	20%	15%

5. Family Composition

80% of retirees who receive a subsidy are assumed to be married or have a qualified domestic partner and elect dependent coverage. Males are assumed to be 4 years older than their female spouses.

6. Surviving Spouse Coverage

With regard to members who are currently alive, 100% of eligible spouses or domestic partners are assumed to elect continued health coverage after the Member's death.

7. Medicare Eligibility

100% of members not yet age 65 are assumed to be covered by both Medicare Parts A and B beginning at age 65.

8. Administrative Expenses

No administrative expenses separate from the premium costs are assumed.

APPENDIX B
HEALTH ASSUMPTIONS, METHODS AND PLAN PROVISIONS

B. Actuarial Methods

1. Asset Valuation Method

Market value of assets less unrecognized returns. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a seven-year period (unrecognized returns established before July 1, 2008 are recognized over a five-year period). The actuarial value of assets is further adjusted, if necessary, to be within 40% of the market value of assets.

2. Actuarial Funding Method

The Entry Age Normal actuarial funding method is used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement. The actuarial liability is the difference between the present value of future benefits and the present value of future normal cost. The unfunded actuarial liability (UAL) is the difference between the actuarial liability and the actuarial value of assets.

3. Claims Costs Development

No age-graded claims costs were developed. The valuation is based strictly on the expected health subsidy payments.

APPENDIX B
HEALTH ASSUMPTIONS, METHODS AND PLAN PROVISIONS

C. Summary of Key Substantive Plan Provisions

Eligibility:

All retirees and survivors receiving a monthly allowance from LAFPP who are age 55 or older (regardless of age at benefit commencement) and have at least 10 years of service are eligible for a health premium subsidy. Members generally must participate in medical and dental plans offered by Los Angeles Police Relief Association (LAPRA), Los Angeles Firemen's Relief Association (LAFRA), or United Firefighters of Los Angeles City (UFLAC). Harbor members may participate in the Los Angeles City Employees' Retirement System (LACERS) plans. In addition, members living outside the service areas of the plans offered by these organizations may receive a subsidy through the Health Insurance Premium Reimbursement Program (HIPRP).

Eligibility for pension plan allowances varies by tier and is described in Appendix A of this report.

Medical Subsidy Amount:

For **Pre-Medicare retirees**, the medical subsidy is 4% of the maximum medical subsidy for each whole year of service, up to 100% of the maximum medical subsidy. The subsidy is limited to the medical plan premium, however any difference may be applied toward the cost of dependent coverage.

For **Medicare-eligible retirees**, the medical subsidy is equal to a percentage of the maximum Medicare-eligible medical subsidy but no more than the premium for the plan in which the retiree is enrolled. The percentage of the maximum subsidy is determined based on service as shown below:

<u>Years of Service</u>	<u>Subsidy Percent</u>
10-14	75%
15-19	90%
20 +	100%

For Medicare-eligible retirees covering **spouses** (regardless of whether the spouse is Medicare-eligible or not), the dependent premium subsidy is based on the amount that would be available for dependent coverage if the retiree was enrolled in pre-Medicare coverage in the same plan.

Surviving spouses are eligible for a medical subsidy based on the age and service of the deceased member. The percentage of the maximum subsidy is determined as described above for pre- and post-Medicare coverage.

The maximum medical subsidy amounts were frozen at the 2011-12 plan year levels for all non-retired members not enrolled in DROP as of July 14, 2011 who did not begin to contribute an additional 2% of pay in employee contributions to the Pension Plan.

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APPENDIX B
HEALTH ASSUMPTIONS, METHODS AND PLAN PROVISIONS

The maximum monthly medical subsidy amounts in effect for the plan year beginning July 1, 2012 are shown below:

	<u>Unfrozen Subsidy</u>	<u>Frozen Subsidy</u>
Pre-Medicare retiree	\$1,174.23	\$1,097.41
Medicare-eligible retiree	423.45	480.41
Pre-Medicare surviving spouse	593.62	595.60
Medicare-eligible surviving spouse	423.45	480.41

Note that in some cases the frozen subsidy amounts exceed the unfrozen amounts because maximum subsidies decreased from the 2011-12 plan year to the 2012-13 plan year.

Medicare Part B Premium Reimbursement:

Retired members who are enrolled in Medicare Parts A and B and receive a medical subsidy are reimbursed for the basic Medicare Part B premium. Neither dependents nor surviving spouses are eligible for the Medicare Part B premium reimbursement.

Dental Subsidy Amount:

The dental subsidy is 4% of the maximum dental subsidy amount for each whole year of service, up to 100% of the maximum medical subsidy. The subsidy is limited to the actual premium and may not be used for dependent coverage. The maximum monthly dental subsidy amount is \$44.14 for the 2012-13 plan year.

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**APPENDIX B
HEALTH ASSUMPTIONS, METHODS AND PLAN PROVISIONS**

Premiums:

The following table shows the premiums in effect at the valuation date:

	<u>Non-Medicare Coverage</u>		<u>Medicare-Eligible Coverage</u>	
	<u>Retiree Only</u>	<u>Retiree + 1</u>	<u>Retiree Only</u>	<u>Retiree + 1</u>
Plans offered to Fire members by LAFRA:				
Fire Medical	11,577.36	15,024.48	5,776.20	9,090.72
Kaiser	6,828.72	13,537.44	4,593.96	9,067.92
Plans offered to Fire members by UFLAC:				
Blue Cross	11,079.96	17,713.80	7,904.52	14,238.48
California Care	7,477.56	13,086.84	4,688.64	9,171.60
Plans offered to Police members by LAPRA:				
Blue Cross PPO	11,213.88	19,481.88	6,297.60	11,656.56
California Care	6,597.12	12,525.48	4,857.12	9,876.72
Kaiser	6,201.72	12,282.12	2,676.36	5,292.60
Plans offered to Harbor members via LACERS:				
Blue Cross	11,881.80	23,709.36	5,081.40	10,108.56
Kaiser	7,123.44	14,246.88	2,505.00	5,010.00
UHC	8,837.64	17,621.04	2,910.84	5,767.44

**APPENDIX C
GLOSSARY OF TERMS**

1. Actuarial Liability

The Actuarial Liability is the difference between the present value of all future Plan benefits and the present value of total future normal costs. This is also referred to by some actuaries as the “accrued liability” or “actuarial accrued liability”.

2. Actuarial Assumptions

Estimates of future experience with respect to rates of mortality, disability, turnover, retirement rate or rates of investment income and salary increases. Demographic actuarial assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

3. Accrued Service

Service credited under the Plan which was rendered before the date of the actuarial valuation.

4. Actuarial Equivalent

A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

5. Actuarial Funding Method

A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of a retirement Plan benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the “actuarial funding method”.

6. Actuarial Gain (Loss)

The difference between actual experience and actuarial assumption anticipated experience during the period between two actuarial valuation dates.

7. Actuarial Present Value

The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

**APPENDIX C
GLOSSARY OF TERMS**

8. Amortization

Paying off an interest-discounted amount with periodic payments of interest and principal— as opposed to paying off with a lump sum payment.

9. Annual Required Contribution (ARC) under GASB 25

The Governmental Accounting Standards Board (GASB) Statement No. 25 defines the Plan Sponsor’s “Annual Required Contribution” (ARC) that must be disclosed annually.

10. Normal Cost

The actuarial present value of retirement Plan benefits allocated to the current year by the actuarial funding method.

11. Set back/Set forward

Set back is a period of years that a standard published table (i.e. mortality) is referenced backwards in age. For instance, if the set back period is two years and the participant’s age is currently 40, then the table value for age 38 is used from the standard published table. It is the opposite for set forward. A Plan would use set backs or set forwards to compensate for mortality experience in their work force.

12. Unfunded Actuarial Liability (UAL)

The unfunded actuarial liability represents the difference between actuarial liability and valuation assets. This value is sometimes referred to as “unfunded actuarial accrued liability”.

Most retirement Plans have unfunded actuarial liabilities. They typically arise each time new benefits are added and each time experience losses are realized.

The existence of unfunded actuarial accrued liability is not in itself an indicator of poor funding. Also, unfunded actuarial liabilities do not represent a debt that is payable today. What is important is the ability of the plan sponsor to amortize the unfunded actuarial liability and the trend in its amount (after due allowance for devaluation of the dollar).