Segal Consulting

Los Angeles City Employees' Retirement System

Actuarial Valuation and Review of Retirement and Health Benefits as of June 30, 2017

This report has been prepared at the request of the Board of Administration to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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November 7, 2017

Board of Administration
Los Angeles City Employees' Retirement System
202 W. 1st Street, Suite 500
Los Angeles, CA 90012-4401

Re: June 30, 2017 Actuarial Valuations

Dear Board Members:

Enclosed please find the June 30, 2017 actuarial valuations for the retirement, health, and family death benefit plans.

As requested by the System, we have attached the following supplemental schedules:

- Exhibit A - Summary of significant results for the retirement and health plans.
- Exhibit B - History of computed contribution rates for the retirement and health plans.
- Exhibit C - Solvency test for the retirement plan.[1]
- Exhibit D - Schedule of retirees and beneficiaries added to and removed from the rolls for the retirement plan.[2]

We look forward to discussing the reports and the enclosed schedules with the Board.

Sincerely,

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

Andy Yeung

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

JRC/hy

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[1] For the health plan, a similar schedule is provided in Exhibit I of Section 3 of the health valuation report.

[2] For the health plan, a similar schedule is provided in Exhibit C of the health valuation report.

Benefits, Compensation and HR Consulting. **Member of The Segal Group.** Offices throughout the United States and Canada

Exhibit A

Los Angeles City Employees' Retirement System
Summary of Significant Valuation Results

		June 30, 2017	June 30, 2016	Percent Change
I.	**Total Membership**			
	A. Active Members	25,457	24,446	4.1%
	B. Pensioners and Beneficiaries	18,805	18,357	2.4%
II.	**Valuation Salary**			
	A. Total Annual Projected Payroll	$2,062,316,129	$1,968,702,630	4.8%
	B. Average Projected Monthly Salary	6,751	6,711	0.6%
III.	**Benefits to Current Retirees and Beneficiaries**(1)			
	A. Total Annual Benefits	$819,515,912	$778,355,427	5.3%
	B. Average Monthly Benefit Amount	3,632	3,533	2.8%
IV.	**Total System Assets**(2)			
	A. Actuarial Value	$15,686,973,131	$14,752,102,625	6.3%
	B. Market Value	15,689,570,310	14,005,059,515	12.0%
V.	**Unfunded Actuarial Accrued Liability (UAAL)** (3)			
	A. Retirement Benefits	$5,279,854,069	$4,985,746,123	5.9%
	B. Health Subsidy Benefits	567,348,102	544,935,475	4.1%

(1) *Includes July COLA.*

(2) *Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits.*

(3) *Excludes liabilities for enhanced benefits for Airport Peace Officers effective January 7, 2018.*

Exhibit A (continued)

Los Angeles City Employees' Retirement System
Summary of Significant Valuation Results

	FY 2018-2019		FY 2017-2018		Difference	
VI. Budget Items (as a Percent of Pay)*	Beginning of Year**	July 15	Beginning of Year	July 15	Beginning of Year	July 15
A. Retirement Benefits (Tier 1 and Tier 3 Combined)						
1. Normal Cost	6.50%	6.52%	6.74%	6.76%	(0.24)%	(0.24)%
2. Amortization of UAAL	16.49%	16.54%	15.51%	15.56%	0.98%	0.98%
3. Total Retirement Contribution	22.99%	23.06%	22.25%	22.32%	0.74%	0.74%
B. Health Subsidy Benefits (Tier 1 and Tier 3 Combined)						
1. Normal Cost	3.61%	3.63%	3.48%	3.49%	0.13%	0.14%
2. Amortization of UAAL	1.47%	1.47%	1.43%	1.43%	0.04%	0.04%
3. Total Health Subsidy Contribution	5.08%	5.10%	4.91%	4.92%	0.17%	0.18%
C. Total Contribution (A + B)	28.07%	28.16%	27.16%	27.24%	0.91%	0.92%

VII. Funded Ratio	June 30, 2017	June 30, 2016	Difference
(Based on Valuation Value of Assets)			
A. Retirement Benefits	71.4%	71.4%	0.0%
B. Health Subsidy Benefits	81.1%	80.5%	0.6%
C. Total	72.8%	72.6%	0.2%
(Based on Market Value of Assets)			
D. Retirement Benefits	71.4%	67.8%	3.6%
E. Health Subsidy Benefits	81.1%	76.4%	4.7%
F. Total	72.8%	69.0%	3.8%

* *After reflecting enhanced benefits for Airport Peace Officers effective January 7, 2018.*

** *Alternative contribution payment date for FY 2018-2019:*

	Retirement	*Health*	*Total*
End of Pay Periods	*23.81%*	*5.26%*	*29.07%*

Exhibit B

Los Angeles City Employees' Retirement System
Computed Contribution Rates(1) – Historical Comparison

Valuation Date	Retirement	Health	Total	Projected Valuation Payroll (thousands)
06/30/1994	12.07%	2.99%	15.06%	$884,951
06/30/1995	7.34%	2.30%	9.64%	911,292
06/30/1996	6.51%	3.18%	9.69%	957,423
06/30/1997	6.57%	1.85%	8.42%	990,616
06/30/1998	6.43%	1.27%	7.70%	1,011,857
06/30/1999	4.93%	0.67%	5.60%	1,068,124
06/30/2000	2.54%	2.17%	4.71%	1,182,203
06/30/2001	3.84%	1.98%	5.82%	1,293,350
06/30/2002	9.22%	1.85%	11.07%	1,334,335
06/30/2003	11.95%	4.02%	15.97%	1,405,058
06/30/2004	14.76%	4.94%	19.70%	1,575,285
06/30/2005	17.51%	7.27%	24.78%	1,589,306
06/30/2006	17.18%	6.49%	23.67%	1,733,340
06/30/2007	15.52%	5.38%	20.90%	1,896,609
06/30/2008	14.65%	5.48%	20.13%	1,977,645
06/30/2009	18.73%	6.62%	25.35%	1,816,171
06/30/2010				
Before Additional Employee Contributions	21.19%	7.45%	28.64%	1,817,662
After Additional Employee Contributions	18.67%	6.94%	25.61%	1,817,662
06/30/2011(2)				
Before Additional Employee Contributions	24.31%	4.49%	28.80%	1,833,392
After Additional Employee Contributions	21.64%	4.49%	26.13%	1,833,392
06/30/2012(3)	21.34%	5.74%	27.08%	1,819,270
06/30/2013	22.24%	5.80%	28.04%	1,846,970
06/30/2014	24.05%	5.81%	29.86%	1,898,064
06/30/2015	23.65%	4.90%	28.55%	1,907,665
06/30/2016	22.96%	5.09%	28.05%	1,968,703
06/30/2017(4)	23.81%	5.26%	29.07%	2,062,316

(1) *Contributions are assumed to be made at the end of the pay period. For the 6/30/2014 and 6/30/2015 valuations, the contribution rates are the combined rates for Tiers 1 and 2. Beginning with the 6/30/2016 valuation, the contribution rates are the combined rates for Tiers 1 and 3 (Tier 2 was rescinded effective February 21, 2016).*

(2) *Beginning with the 6/30/2011 valuation date, the contribution rates are before adjustments to phase in over five years the impact of new actuarial assumptions (as a result of the June 30, 2011 Triennial Experience Study) on the City's contributions. Those adjustments no longer apply after the June 30, 2014 valuation.*

(3) *Beginning with the 6/30/2012 valuation date, the contribution rates are after additional employee contributions.*

(4) *Beginning with the 6/30/2017 valuation date, the contribution rates are after reflecting enhanced benefits for Airport Peace Officers effective January 7, 2018.*

Exhibit C

Los Angeles City Employees' Retirement System

Solvency Test for Retirement Benefits
For Years Ended June 30

($ In Thousands)

	Aggregate Actuarial Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
Valuation Date	Member Contributions	Retirees, Beneficiaries, & Inactives	Active Members	Valuation Value of Assets	Member Contributions	Retirees, Beneficiaries, & Inactives	Active Members
06/30/1996	$637,737	$2,357,798	$1,480,489	$4,468,433	100.0%	100.0%	99.5%
06/30/1997	683,048	2,598,432	1,604,857	4,802,509	100.0	100.0	94.8
06/30/1998	733,680	2,772,712	1,806,526	5,362,923	100.0	100.0	100.0
06/30/1999	776,617	2,989,218	1,918,751	5,910,948	100.0	100.0	100.0
06/30/2000	827,729	3,149,392	2,035,810	6,561,365	100.0	100.0	100.0
06/30/2001	889,658	3,444,240	2,134,168	6,988,782	100.0	100.0	100.0
06/30/2002	950,002	3,756,935	2,545,181	7,060,188	100.0	100.0	92.5
06/30/2003	1,005,888	4,021,213	2,632,745	6,999,647	100.0	100.0	74.9
06/30/2004	1,062,002	4,348,252	3,123,610	7,042,108	100.0	100.0	52.2
06/30/2005	1,128,101	4,858,932	3,334,492	7,193,142	100.0	100.0	36.2
06/30/2006	1,210,246	5,149,385	3,511,031	7,674,999	100.0	100.0	37.5
06/30/2007	1,307,008	5,365,437	3,854,429	8,599,700*	100.0	100.0	50.0
06/30/2008	1,408,074	5,665,130	4,113,200	9,438,318	100.0	100.0	57.5
06/30/2009	1,282,663	7,356,302	3,403,019	9,577,747	100.0	100.0	27.6
06/30/2010	1,379,098	7,507,945	3,707,982	9,554,027	100.0	100.0	18.0
06/30/2011	1,474,824	7,765,071	4,151,809	9,691,011	100.0	100.0	10.9
06/30/2012	1,625,207	7,893,684	4,875,068	9,934,959	100.0	100.0	8.5
06/30/2013	1,757,195	8,066,564	5,057,904	10,223,961	100.0	100.0	7.9
06/30/2014	1,900,068	8,700,896	5,647,889	10,944,751	100.0	100.0	6.1
06/30/2015	2,012,378	9,118,166	5,779,452	11,727,161	100.0	100.0	10.3
06/30/2016	2,137,269	9,439,001	5,848,726	12,439,250	100.0	100.0	14.8
06/30/2017	2,255,048	10,164,403	6,038,737	13,178,334	100.0	100.0	12.6

* *Excludes assets transferred for Port Police.*

Exhibit D

Los Angeles City Employees' Retirement System
Retirees and Beneficiaries Added To and Removed From the Rolls*
For Years Ended June 30

Year Ended	No. of New Retirees/ Beneficiaries	Annual Allowances Added**	No. of Retirees/ Beneficiaries Removed	Annual Allowances Removed	No. of Retirees/ Beneficiaries at 6/30	Annual Allowances at 6/30	Percent Increase in Annual Allowances	Average Annual Allowance
06/30/2002	844	$23,740,829	620	$11,316,344	13,589	$336,437,038	6.4%	$24,758
06/30/2003	827	24,729,535	611	12,008,132	13,805	359,036,215	6.7%	26,008
06/30/2004	986	53,452,133	654	13,220,316	14,137	399,268,032	11.2%	28,243
06/30/2005	934	43,454,836	749	14,769,736	14,322	427,953,132	7.2%	29,881
06/30/2006	890	42,821,079	642	15,061,287	14,570	455,712,924	6.5%	31,277
06/30/2007	821	34,131,744	555	13,210,740	14,836	476,633,928	4.6%	32,127
06/30/2008	748	40,680,279	609	14,956,623	14,975	502,357,584	5.4%	33,546
06/30/2009	632	36,887,854	616	17,386,042	14,991	521,859,396	3.9%	34,812
06/30/2010	2,893	144,594,918	620	17,604,486	17,264	648,849,828	24.3%	37,584
06/30/2011	528	24,282,965	595	16,585,589	17,197	656,547,204	1.2%	38,178
06/30/2012	620	38,314,256	594	17,986,700	17,223	676,874,760	3.1%	39,301
06/30/2013	772	40,966,952	633	18,776,770	17,362	699,064,942	3.3%	40,264
06/30/2014	831	38,666,905	661	21,175,777	17,532	716,556,070	2.5%	40,871
06/30/2015	1,083	55,849,106	683	22,013,426	17,932	750,391,750	4.7%	41,847
06/30/2016	1,082	51,056,286	657	23,092,610	18,357	778,355,426	3.7%	42,401
06/30/2017	1,142	65,583,105	694	24,422,619	18,805	819,515,912	5.3%	43,580

* *Does not include Family Death Benefit Plan members. Table based on valuation data.*

** *Effective 06/30/2004, also includes the COLA granted in July.*

Segal Consulting

Los Angeles City Employees' Retirement System

Actuarial Valuation and Review of Retirement Benefits as of June 30, 2017

This report has been prepared at the request of the Board of Administration to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

Segal Consulting

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November 7, 2017

Board of Administration
Los Angeles City Employees' Retirement System
202 W. 1st Street, Suite 500
Los Angeles, CA 90012-4401

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2017. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2018/2019 and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Plan. The census and unaudited financial information on which our calculations were based were prepared by LACERS. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of the Segal Group, Inc.

By: Andy Yeung

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

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

JRC/hy

SECTION 1

VALUATION SUMMARY

SECTION 2

VALUATION RESULTS

SECTION 3

SUPPLEMENTAL INFORMATION

SECTION 4

REPORTING INFORMATION

Purpose

This report has been prepared by Segal Consulting ("Segal") to present an actuarial valuation of the Los Angeles City Employees' Retirement System as of June 30, 2017. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board of Administration;
- The characteristics of covered active members, inactive members, and retired members and beneficiaries as of June 30, 2017, provided by LACERS;
- The assets of the Plan as of June 30, 2017, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The results of this valuation reflect changes in the economic actuarial assumptions as developed by Segal and adopted by the Board on September 26, 2017. These changes were documented in our Review of Economic Actuarial Assumptions report dated June 30, 2017 and in our Supplemental Information report dated August 10, 2017. They are also outlined in Section 4, Exhibit III of this report. These assumption changes, in particular, the reduction in the investment return assumption from 7.50% to 7.25%, resulted in an increase in the combined (Tier 1 and Tier 3) City contribution rate of 1.46% of payroll.
- Pursuant to Ordinance No. 184853 ("the Ordinance"), which was adopted by the City Council on March 28, 2017, Airport Peace Officers (APO) at LACERS can elect to remain in LACERS or transfer to Los Angeles Fire and Police Pension Plan (LAFPP) Tier 6 prior to January 7, 2018. All new APO hired after that date would be enrolled in LAFPP Tier 6, rather than in LACERS. Under the Ordinance, APO members who elect to remain in LACERS would be Tier 1 members and would be eligible for enhanced benefits at LACERS. A detailed description of how the cost of the enhanced benefits for APO members is reflected in this report may be found at the end of this section.

Ref: Pgs. 18 and 28

- The ratio of the valuation value of assets to actuarial accrued liabilities increased from 71.39% to 71.40%. On a market value of assets basis, the funded ratio increased from 67.77% to 71.41%. The unfunded actuarial accrued liability increased from $4.986 billion to $5.280 billion. The increase was due to: (i) a lower than expected return on the valuation value of assets (after smoothing) and (ii) changes in the economic actuarial assumptions, offset somewhat by (iii) actual contributions more than expected as a result of the anticipated one-year delay in implementing the lower contribution rate in the prior valuation, (iv) lower than expected salary increases for continuing active members, and (v) lower than expected COLAs granted to retirees and beneficiaries. A complete reconciliation of the System's UAAL is provided in Section 3, Exhibit G.

Ref: Pg. 16

- The aggregate employer rate (payable on July 15) calculated in this valuation has increased from 22.32% of payroll (after reflecting enhanced benefits for APO) to 23.06% of payroll. The annual dollar employer contributions calculated in this valuation increased from about $439.5 million (after reflecting enhanced benefits for APO) to $475.7 million. The increase in the employer rate was due to: (i) a lower than expected return on the valuation value of assets (after smoothing) and (ii) changes in the economic actuarial assumptions, offset somewhat by (iii) a decrease in the normal cost rate due, in part, to the enrollment of new employees in Tier 3, (iv) actual contributions more than expected as a result of the anticipated one-year delay in implementing the lower contribution rate calculated in the prior valuation, (v) amortizing the prior year's UAAL over a larger than expected projected total payroll, (vi) lower than expected salary increases for continuing active members, and (vii) lower than expected COLAs granted to retirees and beneficiaries. A complete reconciliation of the aggregate employer contribution is provided in Section 2, Chart 15.

Ref: Pg. 5

- As indicated in Section 2, Subsection B of this report, the total unrecognized investment gain as of June 30, 2017 is $2,597,179[1] for the assets for Retirement, Health, Family Death, and Larger Annuity Benefits. This investment gain will be recognized in the determination of the actuarial value of assets for funding purposes in the next several years. This implies that earning the assumed rate of investment return of 7.25% per year (net of investment and administrative expenses) on a market value basis will result in net investment gain on the actuarial value of assets after June 30, 2017. Item 9 in Chart 7 shows how, under the asset smoothing method, the $2.6 million in unrecognized gains will be recognized in the next six years.

  The deferred gains of $2.6 million represent 0.02% of the market value of assets as of June 30, 2017. Unless offset by future investment losses or other unfavorable experience, the recognition of the $2.6 million market gain is expected to have a minimal impact on the System's future funded percentage and contribution rate requirements. This potential impact may be illustrated as follows:

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[1] *For comparison purposes, the total unrecognized investment loss as of June 30, 2016 was $747,043,110.*

  - If the retirement plan component of the deferred gains were recognized immediately in the valuation value of assets, the funded percentage would increase from 71.40% to 71.41%.
  - If the retirement plan component of the deferred gains were recognized immediately in the valuation value of assets, the aggregate employer rate (payable on July 15, 2018) would decrease from 23.06% to about 23.05% of payroll.

- As in prior years, the employer contribution rates provided in this report have been developed assuming they will be paid by the City on any of the following dates:

  (1) The beginning of the fiscal year, or

  (2) On July 15, 2018, or

  (3) Throughout the year (i.e., the City will pay contributions at the end of every pay period).

Ref: Pg. 29

- Carrying over the prior instructions from the Board of Administration, the recommended contribution is set equal to the greater of the current funding policy or the minimum Annual Required Contribution (ARC) as determined by the then current GASB Statements 25 and 27. In particular, we have also continued to include in the calculation of the recommended contribution an additional contribution due to the application of the 40-year minimum amortization requirement for both fiscal year 2003/2004 and fiscal year 2004/2005.
- The actuarial valuation report as of June 30, 2017 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

Valuation of Benefits for Airport Peace Officers

- As noted above, pursuant to Ordinance No. 184853 ("the Ordinance"), which was adopted by the City Council on March 28, 2017, Airport Peace Officers (APO) at LACERS can elect to remain in LACERS or transfer to Los Angeles Fire and Police Pension Plan (LAFPP) Tier 6 prior to January 7, 2018. All new APO hired after that date would be enrolled in LAFPP Tier 6, rather than in LACERS. Under the Ordinance, APO members who elect to remain in LACERS would be a Tier 1 member and would be eligible for enhanced benefits at LACERS. A description of the enhanced benefits and the cost to provide those benefits were detailed in our APO report dated February 8, 2017. Subsequently, we issued a letter dated March 8, 2017 that provided LACERS with the adjusted fiscal year 2017/2018 employer contributions rates previously provided in our June 30, 2016 valuations for the retirement and health plans to reflect the enhanced Tier 1 benefits should some of the APO members decide to remain at LACERS on January 7, 2018. A copy of the letter and the APO report have been attached as an Appendix to this valuation report.

As noted in our March 8 letter, the increase in the annual employer contribution rate for the enhanced benefits was estimated at 0.05% of pay for normal cost (when expressed over pay of all Tier 1 members at the time of the study), and at 0.07% of pay for the unfunded actuarial accrued liability (UAAL; when expressed over pay of all Tier 1 and Tier 3 members at the time of the study). These additional contribution rates were estimated under the assumption that only APO members with five or more years of service would remain at LACERS, as the costs to those specific employees to transfer to LAFPP Tier 6 and upgrade their past service would be much higher. The rates were calculated assuming that they would be paid at the beginning of the plan year and that the benefit enhancements would be in force for a full year. In order to determine the adjusted fiscal year 2017/2018 employer contribution rates discussed above, we recommended in our March 8 letter that only one-half of the additional rate increases be added to the annual contribution rates originally recommended in our June 30, 2016 valuation report, since the benefit enhancements will only be provided effective January 7, 2018.

In this valuation report, we have restated the June 30, 2016 employer contribution rates to reflect the improvement. However, the restated rates have been adjusted to reflect a full year (rather than a half year) of the increase in rates for the enhanced benefits, in order to provide a proper comparison with the June 30, 2017 annual contribution rates developed herein. Furthermore, we have not revised the additional contribution rates for the enhanced benefits for the calculation of the June 30, 2017 employer rates from those provided in our March 8 letter, since the elections for APO members to remain at LACERS have not yet been completed. It should be noted that the additional contribution rates were originally determined based on the actuarial assumptions used to perform the June 30, 2016 valuation, and that remains true for the June 30, 2017 valuation.

Lastly, we note that only the employer contribution rates for the June 30, 2016 and 2017 valuations have been adjusted herein to reflect the enhanced benefits for APO members. That is, the liabilities shown in this report have not been adjusted to reflect any potential future elections for APO members to remain at LACERS. We will work with the Retirement System to determine when the additional liabilities and associated employer contribution rates for the enhanced benefits should be re-measured, after the elections to remain at LACERS have been completed.

Summary of Key Valuation Results

	2017	2016
Employer contributions calculated as of June 30:[1]		
Recommended as a percentage of pay (there is a 12-month delay until the rate is effective)		
Tier 1		
At the beginning of the year	23.17%	22.30%
On July 15	23.25%	22.37%
At the end of each pay period	24.00%	23.12%
Tier 3		
At the beginning of the year	20.15%	19.36%
On July 15	20.20%	19.41%
At the end of each pay period	20.86%	20.06%
Combined		
At the beginning of the year	22.99%	22.25%
On July 15	23.06%	22.32%
At the end of each pay period	23.81%	23.08%
Funding elements for plan year ended June 30:		
Normal cost(2)	$352,282,612	$340,758,622
Market value of assets (MVA)(3)	15,689,570,310	14,005,059,515
Actuarial value of assets (AVA)(3)	15,686,973,131	14,752,102,625
Valuation value of retirement assets (VVA)	13,178,333,884	12,439,250,206
Market value of retirement assets (MVA)	13,180,515,725	11,809,329,415
Actuarial accrued liability (AAL)(2)	18,458,187,953	17,424,996,329
Unfunded actuarial accrued liability (UAAL) on VVA basis	5,279,854,069	4,985,746,123
Unfunded actuarial accrued liability (UAAL) on MVA basis	5,277,672,228	5,615,666,914
Funded ratio on VVA basis for retirement (VVA/AAL)	71.40%	71.39%
Funded ratio on MVA basis for retirement (MVA/AAL)	71.41%	67.77%

(1) *After reflecting enhanced benefits for APO.*

(2) *Excludes enhanced benefits for APO.*

(3) *Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits.*

Summary of Key Valuation Results (continued)

	2017	2016
Employer contributions for fiscal year ended June 30:		
Actuarially determined employer contributions	$453,356,059	$440,546,011
Actual contributions	453,356,059	440,546,011
Percentage contributed	100.00%	100.00%
Demographic data for plan year ended June 30:		
Number of retired members and beneficiaries	18,805	18,357
Number of inactive members	7,428	6,895
Number of active members	25,457	24,446
Projected total payroll(2)	$2,062,316,129	$1,968,702,630
Projected average payroll(2)	$81,012	$80,533

(4) *Reflects annualized salaries for part-time members.*

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare an actuarial valuation, Segal relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Retirement Office. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the System. The System uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of LACERS. Segal is not responsible for the use or misuse of its report, particularly by any other party.

- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If LACERS is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. LACERS should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of LACERS, it is not a fiduciary in its capacity as actuaries and consultants with respect to LACERS.

Actuarial Certification

November 7, 2017

This is to certify that Segal Consulting (Segal) has conducted an actuarial valuation of the Los Angeles City Employees' Retirement System (LACERS or the "System") retirement program as of June 30, 2017, in accordance with generally accepted actuarial principles and practices. In particular, it is our understanding that the assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice (ASOPs). Actuarial valuations are performed annually for this retirement program with the last valuation completed on June 30, 2016. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of the historical funding methods used in determination of the liability for retirement benefits.

The actuarial valuation is based on the plan of benefits verified by LACERS and on participant and financial data provided by LACERS. Segal did not audit LACERS' financial statements, but we conducted an examination of all participant data for reasonableness and we concluded that it was reasonable and consistent with the prior year's data.

One of the general goals of an actuarial valuation is to establish contributions that fully fund the Retirement System's liabilities, and that, as a percentage of payroll, remain as level as possible for each generation of active members. Both the Normal Cost and the Actuarial Accrued Liability are determined under the Entry Age cost method.

The actuarial computations made are for funding plan benefits. Accordingly, additional determinations will be needed for other purposes, such as satisfying financial accounting requirements under Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 and judging benefit security at termination of the plan.

Segal prepared all of the supporting schedules in the Actuarial Section of the Comprehensive Annual Financial Report (CAFR) and certain supporting schedules in the Financial Section, based on the results of the June 30, 2017 actuarial valuation. A listing of the supporting schedules Segal prepared for inclusion in the Financial Section as Required Supplementary Information prescribed by GASB, and in the Actuarial Section, is provided below:

Financial Section

1) Schedule of Net Pension Liability*
2) Schedule of Changes in Net Pension Liability and Related Ratios*
3) Schedule of Contribution History*

Actuarial Certification (continued)

November 7, 2017

Actuarial Section
4) Summary of Significant Valuation Results
5) Active Member Valuation Data
6) Retirees and Beneficiaries Added to and Removed from Retiree Payroll
7) Solvency Test
8) Schedule of Funding Progress
9) Actuarial Analysis of Financial Experience
10) Actuarial Balance Sheet
11) Schedule of Changes in Net Pension Liability and Related Ratios*
12) Projection of Pension Plan's Fiduciary Net Position for use in Calculation of Discount Rate as of June 30, 2017*

* Source: Segal's GASB Statement No. 67 valuation report as of June 30, 2017.

LACERS' staff prepared other trend data schedules in the Statistical Section based on information supplied in Segal's valuation report.

To the best of our knowledge, this report is complete and accurate and in our opinion presents the plan's current funding information. The undersigned is a member of the American Academy of Actuaries and is qualified to render the actuarial opinion contained herein.

Andy Yeung

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

A. MEMBER DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive non-vested members (entitled to a refund of member contributions), inactive vested members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 1

Member Population: June 30, 2008 – 2017

Year Ended June 30	Active Members	Inactive Members*	Retired Members and Beneficiaries	Ratio of Non-Actives to Actives
2008	30,236	4,273	14,975	0.64
2009	30,065	4,554	14,991	0.65
2010	26,245	5,344	17,264	0.86**
2011	25,449	5,623	17,197	0.90
2012	24,917	5,808	17,223	0.92
2013	24,441	5,799	17,362	0.95
2014	24,009	6,031	17,532	0.98
2015	23,895	6,507	17,932	1.02
2016	24,446	6,895	18,357	1.03
2017	25,457	7,428	18,805	1.03

* *Includes terminated members due a refund of employee contributions.*

** *Reflects 2009 Early Retirement Incentive Program.*

Active Members
Plan costs are affected by the age, years of service and payroll of active members. In this year's valuation, there were 25,457 active members with an average age of 48.0, average years of service of 14.1 years and average payroll of $81,012.

The 24,446 active members in the prior valuation had an average age of 48.6, average service of 14.7 years and average payroll of $80,533.

Inactive Members
In this year's valuation, there were 7,428 members who were either non-vested and entitled to a refund of member contributions or vested with a right to a deferred or immediate benefit, versus 6,895 in the prior valuation.

These graphs show a distribution of active members by age and by years of service.

CHART 2

Distribution of Active Members by Age as of June 30, 2017

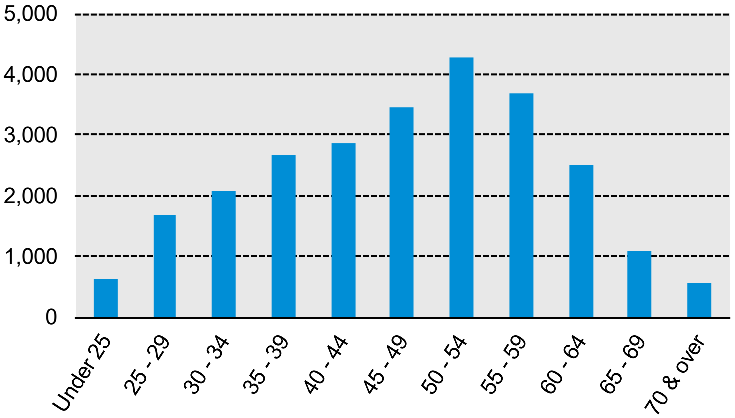
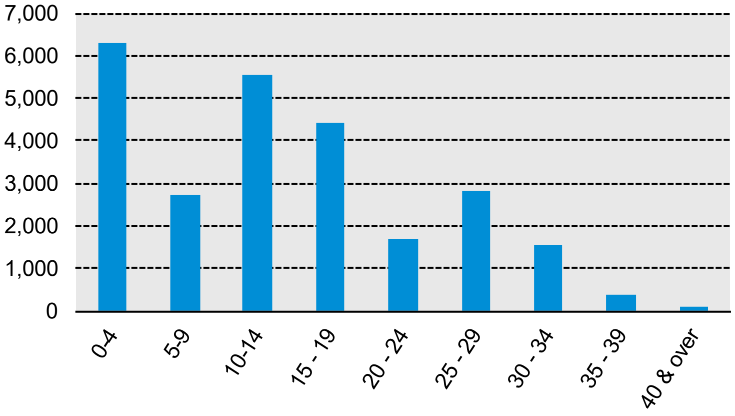


CHART 3

Distribution of Active Members by Years of Service as of June 30, 2017



Retired Members and Beneficiaries
As of June 30, 2017, 14,888 retired members and 3,917 beneficiaries were receiving total monthly benefits of $68,292,993. For comparison, in the previous valuation, there were 14,494 retired members and 3,863 beneficiaries receiving monthly benefits of $64,862,952. These monthly benefits have been adjusted for the COLA granted effective for the month of July.

These graphs show a distribution of the current retired members based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retired Members by Type and by Monthly Amount as of June 30, 2017

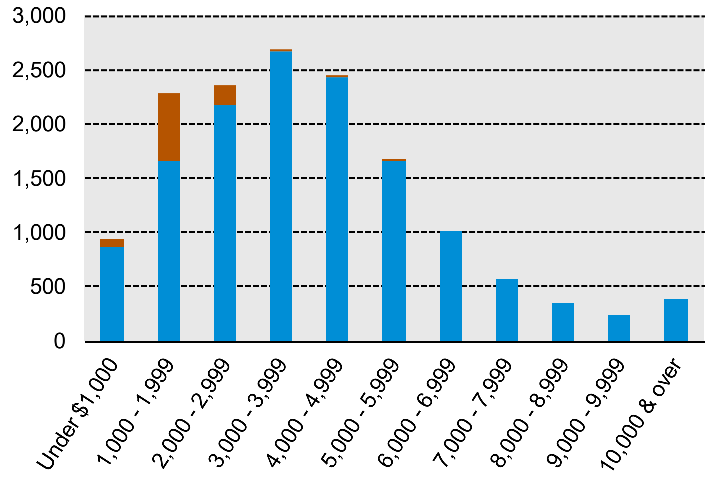
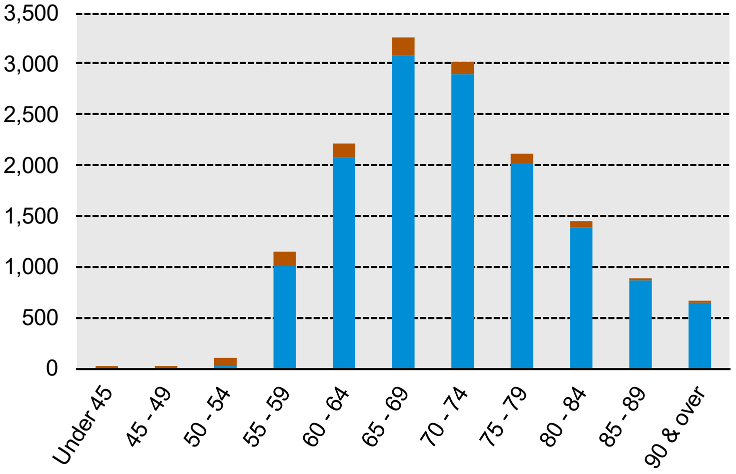


CHART 5

Distribution of Retired Members by Type and by Age as of June 30, 2017



B. FINANCIAL INFORMATION

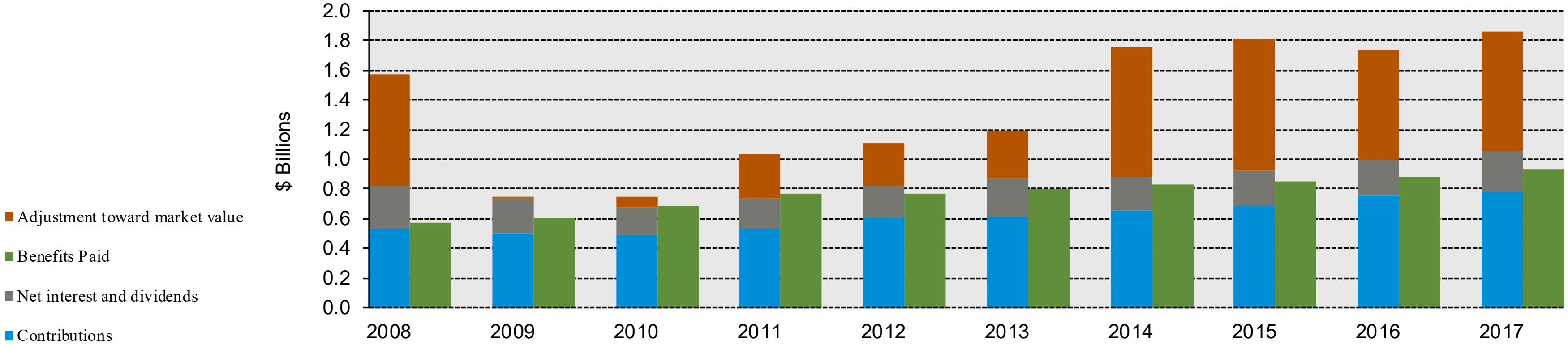
Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative expenses) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

The chart depicts the components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 2008 – 2017



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Administration has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7
Determination of Actuarial Value of Assets as of June 30, 2017

		Original Amount	Portion Not Recognized	Amount Not Recognized	
1.	Market value of assets				$15,689,570,310
2.	Calculation of unrecognized return[1]				
	(a) Year ended June 30, 2017	$770,969,472	6/7	$660,830,976	
	(b) Year ended June 30, 2016	-1,065,023,569	5/7	-760,731,121	
	(c) Year ended June 30, 2015	-707,760,540	4/7	-404,434,594	
	(d) Year ended June 30, 2014	1,246,285,581	3/7	534,122,392	
	(e) Combined net deferred loss as of June 30, 2013[2]	-81,571,421	2/6	-27,190,474	
	(f) Total unrecognized return				$2,597,179
3.	Preliminary actuarial value: (1) - (2f)				$15,686,973,131
4.	Adjustment to be within 40% corridor				0
5.	Final actuarial value of assets: (3) + (4)				$15,686,973,131
6.	Actuarial value as a percentage of market value: (5) ÷ (1)				100.0%
7.	Market value of retirement assets				$13,180,515,725
8.	Valuation value of retirement assets (5) ÷ (1) x (7)				$13,178,333,884
9.	Deferred return recognized in each of the next 6 years:				
	(a) Amount recognized on 6/30/2018				$21,329,183
	(b) Amount recognized on 6/30/2019				21,329,183
	(c) Amount recognized on 6/30/2020				34,924,420
	(d) Amount recognized on 6/30/2021				-143,116,377
	(e) Amount recognized on 6/30/2022				-42,007,728
	(f) Amount recognized on 6/30/2023				110,138,496
	(g) Subtotal (may not total exactly due to rounding)				$2,597,179

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[1] *Total return minus expected return on a market value basis.*

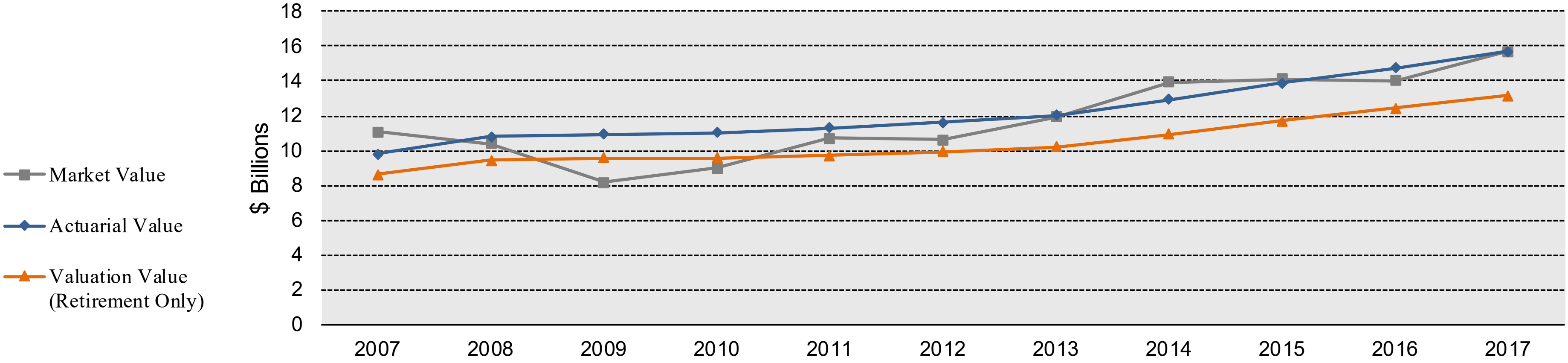
[2] *Based on action taken by the Board on September 9, 2014, the net unrecognized loss as of June 30, 2013 (i.e., $81,571,421) has been recognized in six level amounts, with two years of recognition remaining after the June 30, 2017 valuation.*

The actuarial value, market value and valuation value of assets are representations of LACERS' financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The portion of the total actuarial value of assets allocated for retirement benefits, based on a prorated share of market value, is shown as the valuation value of assets. The valuation value of assets is significant because LACERS' liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the assets over the past eleven years.

CHART 8

Market Value, Actuarial Value, and Valuation Value (Retirement Only) of Assets as of June 30, 2007– 2017



C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total gain of $99,814,895 was due to an investment loss of $75,706,073 (after smoothing), and a gain of $175,520,968 from all other sources. The net experience variation from all other sources was 0.95% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9

Actuarial Experience for Year Ended June 30, 2017

1.	Net loss from investments*	-$75,706,073
2.	Net gain from other experience**	146,474,065
3.	Net gain from scheduled one-year delay in implementing the lower contribution rate calculated in the June 30, 2016 valuation until fiscal year 2017/2018	29,046,903
4.	Net experience gain: (1) + (2) + (3)	$99,814,895

* *Details in Chart 10.*

** *Details in Chart 13. The net gain is attributed to actual liability experience from July 1, 2016 through June 30, 2017 compared to the projected experience based on the actuarial assumptions as of June 30, 2016.*

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on LACERS' investment policy. For valuation purposes, the assumed rate of return on the valuation value of assets is 7.50% (for the June 30, 2016 valuation). The actual rate of return on the valuation value of assets basis for the 2017 plan year was 6.90%.

Since the actual return for the year was less than the assumed return, LACERS experienced an actuarial loss during the year ended June 30, 2017 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 10

Investment Experience for Year Ended June 30, 2017

	Market Value	Actuarial Value	Valuation Value
	(Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits)	(Includes assets for Retirement, Health, Family Death, and Larger Annuity Benefits)	(Includes assets for Retirement Only)
1. Actual return	$1,834,657,728	$1,085,017,439	$867,987,899
2. Average value of assets	$14,182,510,076	$14,929,553,186	$12,582,586,289
3. Actual rate of return: (1) ÷ (2)	12.94%	7.27%	6.90%
4. Assumed rate of return	7.50%	7.50%	7.50%
5. Expected return: (2) x (4)	$1,063,688,256	$1,119,716,489	$943,693,972
6. Actuarial gain/(loss): (1) – (5)	$770,969,472	-$34,699,050	-$75,706,073

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the Retirement, Health, Family Death and Larger Annuity Benefits for the last ten years, including the five-year average.

CHART 11

Investment Return – Actuarial Value vs. Market Value: Years Ended June 30, 2008 – 2017

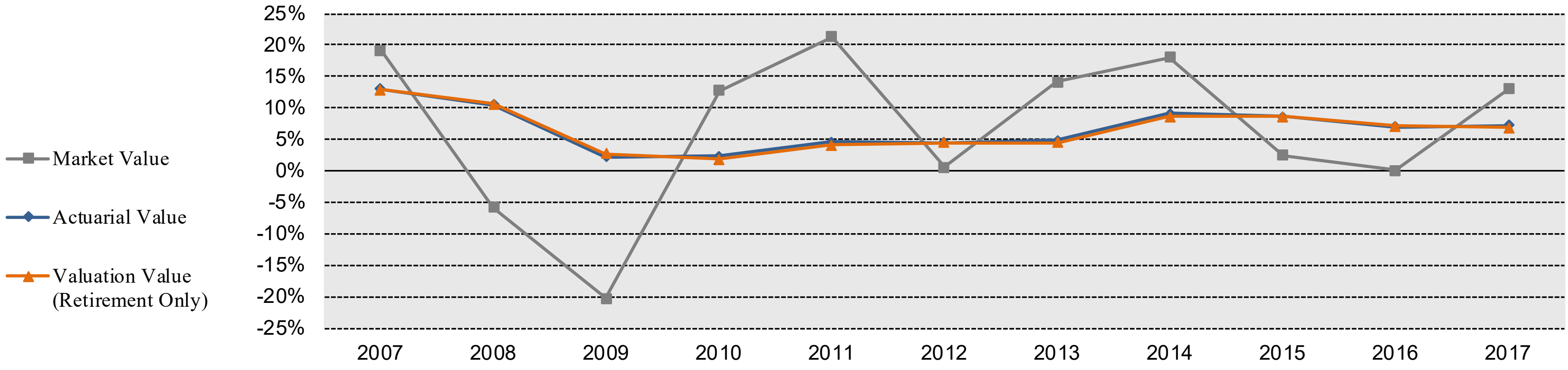
	Net Interest and Dividend Income		Recognition of Capital Appreciation		Actuarial Value Investment Return		Market Value Investment Return	
Year Ended June 30	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
2008	$290,092,182	2.91%	$752,500,487	7.53%	$1,042,592,669	10.44%	-$649,747,001	-5.78%
2009	237,249,377	2.17%	9,861,278	0.09%	247,110,655	2.26%	-2,125,637,471	-20.26%
2010	190,583,695	1.73%	71,009,369	0.64%	261,593,064	2.37%	1,049,769,484	12.79%
2011	211,685,408	1.91%	291,263,922	2.63%	502,949,330	4.54%	1,934,130,562	21.33%
2012	213,980,878	1.88%	290,831,650	2.55%	504,812,528	4.43%	67,093,447	0.62%
2013	253,877,178	2.17%	315,633,473	2.69%	569,510,651	4.86%	1,512,696,071	14.14%
2014	225,147,763	1.86%	873,017,519	7.19%	1,098,165,282	9.05%	2,180,005,303	18.09%
2015	231,942,743	1.77%	887,268,617	6.79%	1,119,211,360	8.56%	348,113,908	2.47%
2016	240,916,934	1.71%	742,488,219	5.28%	983,405,153	6.99%	7,190,895	0.05%
2017	277,724,021	1.86%	807,293,418	5.41%	1,085,017,439	7.27%	1,834,657,728	12.94%
Total	$2,373,200,179		$5,041,167,952		$7,414,368,131		$6,158,272,926	
					Five-year average return:	7.34%		9.31%
					Ten-year average return:	6.04%		4.91%

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2007 - 2017.

CHART 12

Market Value, Actuarial Value, and Valuation Value (Retirement Only) Rates of Return for Years Ended June 30, 2007– 2017



Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net gain from this other experience for the year ended June 30, 2017 amounted to $146,474,065 which is 0.79% of the actuarial accrued liability.

A brief summary of the demographic gain experience of LACERS for the year ended June 30, 2017 is shown in the chart below.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 13

Experience Due to Changes in Demographics for Year Ended June 30, 2017

1.	Gain due to lower than expected salary increases for continuing actives	$47,159,674
2.	Gain due to lower than expected COLA granted to retirees and beneficiaries	99,588,336
3.	Miscellaneous loss	-273,945
4.	Total gain	$146,474,065

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount, adjusted with interest for timing, is then divided by the projected payroll for active members to determine the funding rate of 23.06% of payroll, if paid by the City on July 15, 2018. We have continued to follow the method used in the June 30, 2005 valuation to adjust the contribution requirement if the GASB ARC minimum contribution under the old GASB Statements No. 25 and 27 is greater than the amount prescribed below. For 2017, the beginning of year minimum GASB ARC is $414.6 million, so no additional adjustment has been made to the recommended contributions.

A summary of the recommended contributions by Tier is shown on pages 13 through 15.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 14
Recommended Contribution

	Year Ended June 30			
Tier 1	2017		2016	
Before Reflecting Enhanced Benefits for APO	Amount	% Payroll	Amount	% Payroll
1. Total normal cost	$334,390,089	17.26%	$336,566,728	17.35%
2. Expected employee contributions(1)	-205,720,520	-10.63%	-205,768,747	-10.61%
3. Employer normal cost: (1) + (2)	$128,669,569	6.63%	$130,797,981	6.74%
4. Actuarial accrued liability	18,447,394,187		17,424,360,500	
5. Valuation value of assets	-13,161,660,563		-12,438,532,553	
6. Unfunded actuarial accrued liability	$5,285,733,624		$4,985,827,947	
7. Amortization of unfunded accrued liability	318,001,527	16.42%(2),(3)	299,521,454	15.44%(2)
8. Total recommended contribution, beginning of year: (3) + (7)	$446,671,096	23.05%	$430,319,435	22.18%
9. Total recommended contribution, July 15	447,957,750	23.13%	431,600,282	22.25%
10. Total recommended contribution, end of pay periods	462,579,626	23.88%	446,164,686	23.00%
After Reflecting Enhanced Benefits for APO				
11. Total recommended contribution, beginning of year	$448,800,203	23.17%	$432,532,090	22.30%
12. Total recommended contribution, July 15	450,349,794	23.25%	433,819,523	22.37%
13. Total recommended contribution, end of pay periods	464,877,207	24.00%	448,458,816	23.12%
Increase due to Enhanced Benefits for APO(4)				
14. Employer normal cost, July 15		0.05%		0.05%
15. Unfunded actuarial accrued liability, July 15		0.07%		0.07%
16. Total recommended contribution, July 15		0.12%		0.12%
17. Projected payroll	$1,936,988,361		$1,939,683,049	

(1) *Discounted to beginning of year. The average employee rate for contributions made at the end of each pay period is actually 11.01% for the June 30, 2016 and June 30, 2017 valuations. As of June 30, 2017, all active Tier 1 members are now paying an additional contribution rate of either 4.00% or 4.50%.*

(2) *In developing the UAAL contribution rate, we have combined the UAAL for Tiers 1 and 3 and amortized that total UAAL over the total payroll for Tiers 1 and 3.*

(3) *For purposes of purchasing service with the Water and Power Employees' Retirement Plan (WPERP) for Tier 1, the UAAL rate as of June 30, 2017 is 16.42% before reflecting enhanced benefits for APO, plus an additional 0.07% for the cost increase for the enhanced APO benefits for a total of 16.49%, if paid at the beginning of the year. If paid on July 15, the total UAAL rate of 16.49% increases to 16.55%.*

(4) *Reference: letter dated March 8, 2017 (copy attached as an appendix to this report). As previously discussed with LACERS, these rate increases have not been re-measured for the June 30, 2017 valuation, since the elections for APO members to remain at LACERS and receive enhanced benefits have not yet been completed. That is, the rate increases for enhanced benefits provided herein for both the June 30, 2016 and 2017 valuations are the same rates shown in our March 8, 2017 letter (adjusted with interest for the assumed July 15 payment timing), which were originally determined based on the actuarial assumptions used to perform the June 30, 2016 valuation.*

CHART 14
Recommended Contribution

Tier 3	Year Ended June 30			
	2017		2016	
Before Reflecting Enhanced Benefits for APO	**Amount**	**% Payroll**	**Amount**	**% Payroll**
1. Total normal cost	$17,892,523	14.28%	$4,191,894	14.45%
2. Expected employee contributions(1)	-13,307,624	-10.62%	-3,076,775	-10.60%
3. Employer normal cost: (1) + (2)	$4,584,899	3.66%	$1,115,119	3.85%
4. Actuarial accrued liability	10,793,766		635,829	
5. Valuation value of assets	-16,673,321		-717,653	
6. Unfunded actuarial accrued liability	-$5,879,555		-$81,824	
7. Amortization of unfunded accrued liability	20,575,457	16.42%(2),(3)	4,481,138	15.44%(2)
8. Total recommended contribution, beginning of year: (3) + (7)	$25,160,356	20.08%	$5,596,257	19.29%
9. Total recommended contribution, July 15	25,232,831	20.13%	5,612,914	19.34%
10. Total recommended contribution, end of pay periods	26,056,461	20.79%	5,802,323	19.99%
After Reflecting Enhanced Benefits for APO				
11. Total recommended contribution, beginning of year	$25,253,545	20.15%	$5,615,963	19.36%
12. Total recommended contribution, July 15	25,316,209	20.20%	5,632,679	19.41%
13. Total recommended contribution, end of pay periods	26,143,372	20.86%	5,822,754	20.06%
Increase due to Enhanced Benefits for APO(4)				
14. Employer normal cost, July 15		0.00%		0.00%
15. Unfunded actuarial accrued liability, July 15		0.07%		0.07%
16. Total recommended contribution, July 15		0.07%		0.07%
17. Projected payroll	$125,327,768		$29,019,581	

(1) *Discounted to beginning of year. The average employee rate for contributions made at the end of each pay period is actually 11.00% for the June 30, 2016 and June 30, 2017 valuations*

(2) *In developing the UAAL contribution rate, we have combined the UAAL for Tiers 1 and 3 and amortized that total UAAL over the total payroll for Tiers 1 and 3.*

(3) *For purposes of Government Service Buybacks for Tier 3, the UAAL rate as of June 30, 2017 is -0.40% before reflecting enhanced benefits for APO, if paid at the beginning of the year. It is calculated by: (i) amortizing -$5,879,555 over separate layers (i.e., 15 years for new actuarial (gains)/losses and 20 years for new assumption changes), or a credit of $497,048, and (ii) dividing that credit over Tier 3 payroll (or $125,327,768). If paid on July 15, the UAAL rate remains at -0.40% before reflecting enhanced benefits for APO, even though the credit increases to $498,480. After reflecting enhanced benefits for APO, the UAAL rate for Government Service Buybacks for Tier 3 increases by 0.07% of pay to -0.33% if paid on July 15. Note that, even though there are no Tier 3 APO members, Tier 1 and Tier 3 pay the same UAAL contribution rates, as noted in footnote (2) above.*

(4) *Reference: letter dated March 8, 2017 (copy attached as an appendix to this report). As previously discussed with LACERS, these rate increases have not been re-measured for the June 30, 2017 valuation, since the elections for APO members to remain at LACERS and receive enhanced benefits have not yet been completed. That is, the rate increases for enhanced benefits provided herein for both the June 30, 2016 and 2017 valuations are the same rates shown in our March 8, 2017 letter (adjusted with interest for the assumed July 15 payment timing), which were originally determined based on the actuarial assumptions used to perform the June 30, 2016 valuation.*

CHART 14
Recommended Contribution

		Year Ended June 30			
		2017		2016	
Combined					
	Before Reflecting Enhanced Benefits for APO	**Amount**	**% Payroll**	**Amount**	**% Payroll**
1.	Total normal cost	$352,282,612	17.08%	$340,758,622	17.31%
2.	Expected employee contributions	-219,028,144	-10.63%	-208,845,522	-10.61%
3.	Employer normal cost: (1) + (2)	$133,254,468	6.45%	$131,913,100	6.70%
4.	Actuarial accrued liability	18,458,187,953		17,424,996,329	
5.	Valuation value of assets	-13,178,333,884		-12,439,250,206	
6.	Unfunded actuarial accrued liability	$5,279,854,069		$4,985,746,123	
7.	Amortization of unfunded accrued liability	338,576,984	16.42%	304,002,592	15.44%
8.	Total recommended contribution, beginning of year: (3) + (7)	$471,831,452	22.87%	$435,915,692	22.14%
9.	Total recommended contribution, July 15	473,190,581	22.94%	437,213,196	22.21%
10.	Total recommended contribution, end of pay periods	488,636,087	23.69%	451,967,009	22.96%
	After Reflecting Enhanced Benefits for APO				
11.	Total recommended contribution, beginning of year	$474,053,748	22.99%	$438,148,053	22.25%
12.	Total recommended contribution, July 15	475,666,003	23.06%	439,452,202	22.32%
13.	Total recommended contribution, end of pay periods	491,020,579	23.81%	454,281,570	23.08%
	Increase due to Enhanced Benefits for APO				
14.	Employer normal cost, July 15		0.05%		0.04%
15.	Unfunded actuarial accrued liability, July 15		0.07%		0.07%
16.	Total recommended contribution, July 15		0.12%		0.11%
17.	Projected payroll	$2,062,316,129		$1,968,702,630	

The contribution rates as of June 30, 2017 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation.

Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 15

Reconciliation of Recommended Contribution(1) from June 30, 2016 to June 30, 2017

Recommended Contribution as of June 30, 2016 (Before Reflecting Enhanced Benefits for APO)	22.21%
Increase due to enhanced benefits for APO	0.11%(2)
Recommended Contribution as of June 30, 2016 (After Reflecting Enhanced Benefits for APO)	22.32%
Effect of decrease in employer normal cost due to payroll and demographic changes (including the enrollment of new employees in Tier 3)	-0.18%
Effect of anticipated one-year delay in implementing the lower combined contribution rate calculated in the prior valuation	-0.12%
Effect of investment loss	0.31%
Effect of amortizing prior year's UAAL over a larger than expected projected total payroll	-0.15%
Effect of lower than expected salary increases for actives	-0.19%
Effect of lower than expected COLAs granted to retirees and beneficiaries	-0.40%
Effect of changes in actuarial assumptions	1.46%
Effect of other losses on accrued liability	0.01%
Total change	0.74%
Recommended Contribution as of June 30, 2017	23.06%

(1) *Based on contributions paid on July 15.*

(2) *For comparison purposes only, this rate increase assumes the additional contribution rate would be paid on July 15, 2017 and that the benefit enhancement would be in force for the full 2017/2018 fiscal year (FY). In actuality, the benefit enhancements are effective beginning January 7, 2018 (i.e., for approximately one-half of FY 2017/2018).*

E. FUNDED RATIO

A commonly reported piece of information regarding the Plan's financial status is the funded ratio. The ratios compare the valuation value of assets and the market value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors. The chart below depicts a history of the funded ratios for this plan.

The funded status measures shown in this valuation are appropriate for assessing the need for or amount of future contributions. However, they are not necessarily appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. As the chart below shows, the measures are different depending on whether the valuation or market value of assets is used.

CHART 16

Funded Ratio for Years Ending June 30, 2007– 2017

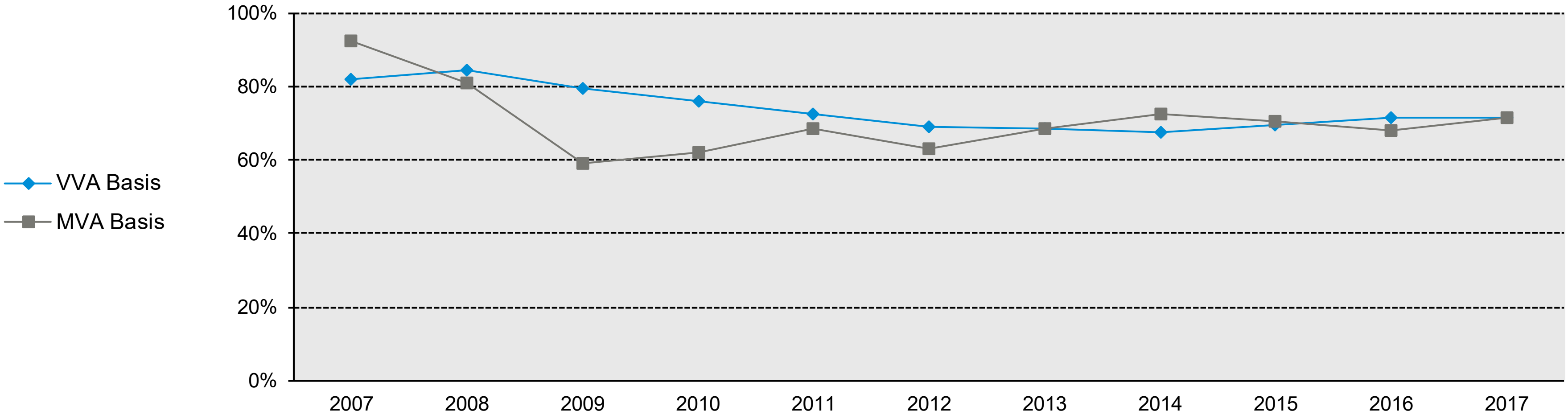


CHART 17

Schedule of Funding Progress

Actuarial Valuation Date	Valuation Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
06/30/2008	$9,438,318,300	$11,186,403,741	$1,748,085,441	84.37%	$1,977,644,640	88.39%
06/30/2009	9,577,747,421	12,041,983,936	2,464,236,515	79.54%	1,816,171,212	135.68%
06/30/2010	9,554,027,411	12,595,025,119	3,040,997,708	75.86%	1,817,662,284	167.30%
06/30/2011	9,691,011,496	13,391,704,000	3,700,692,504	72.37%	1,833,392,381	201.85%
06/30/2012	9,934,959,310	14,393,958,574	4,458,999,264	69.02%	1,819,269,630	245.10%
06/30/2013	10,223,960,886	14,881,663,162	4,657,702,276	68.70%	1,846,970,474	252.18%
06/30/2014	10,944,750,574	16,248,853,099	5,304,102,525	67.36%	1,898,064,175	279.45%
06/30/2015	11,727,161,378	16,909,996,380	5,182,835,002	69.35%	1,907,664,598	271.68%
06/30/2016	12,439,250,206	17,424,996,329	4,985,746,123	71.39%	1,968,702,630	253.25%
06/30/2017	13,178,333,884	18,458,187,953	5,279,854,069	71.40%	2,062,316,129	256.02%

F. VOLATILITY RATIOS

Retirement plans are subject to volatility in the level of required contributions. This volatility tends to increase as retirement plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measure since it is based on the current level of assets.

For LACERS, the current AVR is about 6.4. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 6.4% of one-year's payroll. Since LACERS amortizes actuarial gains and losses over a period of 15 years, there would be a 0.5% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions.

For LACERS, the current LVR is about 9.0. This is about 41% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long-term.

This chart shows how the asset and liability volatility ratios have varied over time.

CHART 18

Volatility Ratios for Years Ended June 30, 2008 – 2017

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2008	4.6	5.7
2009	3.8	6.5
2010	4.3	6.9
2011	5.0	7.3
2012	5.0	7.9
2013	5.5	8.1
2014	6.2	8.6
2015	6.2	8.9
2016	6.0	8.9
2017	6.4	9.0

EXHIBIT A

Table of Plan Coverage

i. Tier 1

Category	Year Ended June 30 2017	2016	Change From Prior Year
Active members in valuation:			
Number	23,426	23,985	-2.3%
Average age	48.9	48.8	0.1
Average service	15.2	15.0	0.2
Projected total payroll*	$1,936,988,361	$1,939,683,049	-0.1%
Projected average payroll*	$82,685	$80,871	2.2%
Account balances	$2,076,407,564	$1,987,350,554	4.5%
Total active vested members	19,187	20,078	-4.4%
Inactive members:			
Number	7,238	6,877	5.2%
Average age	44.9	44.7	0.2
Average contribution balance for those with under 5 years of service	$5,710	$5,367	6.4%
Average monthly benefit at age 60 for those with 5 or more years of service**	$1,562	$1,482	5.4%
Retired members:			
Number in pay status	13,986	13,572	3.1%
Average service at retirement	26.6	26.7	-0.1
Average age at retirement	60.3	60.2	0.1
Average age	71.9	71.9	0.0
Average monthly benefit (includes July COLA)	$4,167	$4,068	2.4%
Disabled members:			
Number in pay status	902	922	-2.2%
Average service at retirement	11.7	11.8	-0.1
Average age at retirement	47.1	47.1	0.0
Average age	65.9	65.5	0.4
Average monthly benefit (includes July COLA)	$1,669	$1,636	2.0%
Beneficiaries:			
Number in pay status	3,917	3,863	1.4%
Average age	76.3	76.5	-0.2
Average monthly benefit (includes July COLA)	$2,171	$2,108	3.0%

* *Reflects annualized salaries for part-time members.*

** *Based on salary at termination from LACERS.*

EXHIBIT A

Table of Plan Coverage

ii. Tier 3

Category	Year Ended June 30 2017	2016	Change From Prior Year
Active members in valuation:			
Number	2,031	461	340.6%
Average age	36.5	36.7	-0.2
Average service	0.6	0.2	0.4
Projected total payroll*	$125,327,768	$29,019,581	331.9%
Projected average payroll*	$61,707	$62,949	-2.0%
Account balances	$8,647,360	$569,778	1417.7%
Total active vested members	1	0	N/A
Inactive members:			
Number	190	18	955.6%
Average age	35.8	40.8	-5.0
Average contribution balance for those with under 5 years of service	$2,070	$912	127.0%
Average monthly benefit at age 60 for those with 5 or more years of service**	N/A	N/A	N/A
Retired members:			
Number in pay status	0	0	N/A
Average service at retirement	N/A	N/A	N/A
Average age at retirement	N/A	N/A	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A
Disabled members:			
Number in pay status	0	0	N/A
Average service at retirement	N/A	N/A	N/A
Average age at retirement	N/A	N/A	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A
Beneficiaries:			
Number in pay status	0	0	N/A
Average age	N/A	N/A	N/A
Average monthly benefit (includes July COLA)	N/A	N/A	N/A

* *Reflects annualized salaries for part-time members.*

** *Based on salary at termination from LACERS.*

EXHIBIT B

Members in Active Service as of June 30, 2017
By Age, Years of Service, and Average Payroll

i. Tier 1

		Years of Service								
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	398	398	- -	- -	- -	- -	- -	- -	- -	- -
	$43,885	$43,885	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	1,225	1,076	139	10	- -	- -	- -	- -	- -	- -
	54,869	55,058	$53,152	$58,371	- -	- -	- -	- -	- -	- -
30 - 34	1,721	838	509	359	15	- -	- -	- -	- -	- -
	68,815	64,018	72,417	74,778	$71,884	- -	- -	- -	- -	- -
35 - 39	2,362	565	469	1,013	308	7	- -	- -	- -	- -
	78,763	70,548	78,957	81,868	83,172	$85,548	- -	- -	- -	- -
40 - 44	2,651	400	367	924	818	137	4	1	- -	- -
	84,483	73,138	79,670	83,659	91,647	93,013	$94,009	$83,111	- -	- -
45 - 49	3,259	349	346	835	933	404	363	29	- -	- -
	87,234	71,074	76,032	79,181	92,664	102,090	100,914	94,334	- -	- -
50 - 54	4,110	235	302	791	851	437	996	467	31	- -
	90,380	72,471	72,890	77,300	89,246	100,600	104,290	95,731	$89,859	- -
55 - 59	3,594	219	268	644	673	321	758	560	150	1
	89,321	68,926	67,100	74,344	84,323	98,139	99,735	109,200	99,751	$99,407
60 - 64	2,456	117	173	563	467	230	439	320	114	33
	87,831	67,323	71,832	75,034	84,578	94,747	98,506	105,115	101,837	102,605
65 - 69	1,084	46	97	267	234	91	159	127	39	24
	83,762	68,407	61,275	68,037	85,049	90,762	96,005	103,416	102,621	124,181
70 & over	566	20	52	149	124	44	79	49	23	26
	71,702	52,672	51,502	55,724	73,101	77,169	86,507	90,267	88,767	107,312
Total	23,426	4,263	2,722	5,555	4,423	1,671	2,798	1,553	357	84
	$82,685	$62,979	$72,693	$77,680	$88,013	$97,844	$100,723	$102,943	$99,164	$110,188

EXHIBIT B

Members in Active Service as of June 30, 2017
By Age, Years of Service, and Average Payroll

ii. Tier 3

	Years of Service									
Age	**Total**	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**
Under 25	239	239	- -	- -	- -	- -	- -	- -	- -	- -
	$46,544	$46,544	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	458	458	- -	- -	- -	- -	- -	- -	- -	- -
	53,953	53,953	- -	- -	- -	- -	- -	- -	- -	- -
30 - 34	367	367	- -	- -	- -	- -	- -	- -	- -	- -
	61,510	61,510	- -	- -	- -	- -	- -	- -	- -	- -
35 - 39	298	298	- -	- -	- -	- -	- -	- -	- -	- -
	63,436	63,436	- -	- -	- -	- -	- -	- -	- -	- -
40 - 44	199	199	- -	- -	- -	- -	- -	- -	- -	- -
	69,859	69,859	- -	- -	- -	- -	- -	- -	- -	- -
45 - 49	180	180	- -	- -	- -	- -	- -	- -	- -	- -
	69,808	69,808	- -	- -	- -	- -	- -	- -	- -	- -
50 - 54	159	159	- -	- -	- -	- -	- -	- -	- -	- -
	76,420	76,420	- -	- -	- -	- -	- -	- -	- -	- -
55 - 59	93	92	1	- -	- -	- -	- -	- -	- -	- -
	70,224	70,375	$56,339	- -	- -	- -	- -	- -	- -	- -
60 - 64	31	31	- -	- -	- -	- -	- -	- -	- -	- -
	62,235	62,235	- -	- -	- -	- -	- -	- -	- -	- -
65 - 69	5	5	- -	- -	- -	- -	- -	- -	- -	- -
	125,713	125,713	- -	- -	- -	- -	- -	- -	- -	- -
70 & over	2	2	- -	- -	- -	- -	- -	- -	- -	- -
	154,218	154,218	- -	- -	- -	- -	- -	- -	- -	- -
Total	2,031	2,030	1	- -	- -	- -	- -	- -	- -	- -
	$61,707	$61,710	$56,339	- -	- -	- -	- -	- -	- -	- -

EXHIBIT C

Reconciliation of Member Data

	Active Members	Inactive Members	Disableds	Retired Members	Beneficiaries	Total
Number as of June 30, 2016	24,446	6,895	922	13,572	3,863	49,698
New members	2,451	N/A	N/A	N/A	N/A	2,451
Terminations – with vested rights	-861	861	0	0	0	0
Retirements	-754	-109	N/A	863	N/A	0
New disabilities	0	-24	24	N/A	N/A	0
Died with beneficiary	N/A	N/A	N/A	N/A	257	257
Deaths or benefits expired	-47	-29	-42	-449	-203	-770
Refund of members contributions	-50	-120	0	0	0	-170
Rehired	272	-270	-2	0	N/A	0
Data adjustments	0	224*	0	0	0	224
Number as of June 30, 2017	25,457	7,428	902	13,986	3,917	51,690

* *Includes members who were both hired and terminated during the year.*

Note: For the change in the annual benefits from the retirees and beneficiaries added to and removed from the rolls, refer to Exhibit D of the supplemental schedules that accompany this report.

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial Value Basis for Retirement, Health, Family Death, and Larger Annuity Benefits

	June 30, 2017		June 30, 2016	
Contribution income:				
Employer contributions	$550,961,514		$546,687,123	
Employee contributions	227,531,810		211,344,752	
Net contribution income		$778,493,324		$758,031,875
Investment income:				
Interest, dividends and other income	$371,193,752		$328,356,817	
Recognition of capital appreciation	807,293,418		742,488,219	
Less investment and administrative fees	-93,469,731		-87,439,883	
Net investment income		$1,085,017,439		$983,405,153
Total income available for benefits		$1,863,510,763		$1,741,437,028
Less benefit payments:				
Payment of benefits	-$918,837,634		-$877,204,804	
Refunds of contributions	-9,802,623		-7,718,826	
Net benefit payments		-$928,640,257		-$884,923,630
Change in reserve for future benefits		$934,870,506		$856,513,398

Note: Results may be slightly off due to rounding.

EXHIBIT E

Summary Statement of Assets for Retirement, Health, Family Death, and Larger Annuity Benefits

	June 30, 2017		June 30, 2016	
Cash equivalents		$491,514,054		$499,731,305
Accounts receivable:				
Accrued investment income	$52,776,887		$50,163,160	
Proceeds from sales of investments	112,600,821		102,333,983	
Other	13,529,376		28,008,361	
Total accounts receivable		$178,907,084		$180,505,504
Investments:				
Fixed income	$3,726,445,570		$3,674,318,513	
Equities	9,019,681,282		7,542,082,855	
Real estate and alternative investment	2,413,497,346		2,241,780,660	
Other	962,815,829		782,185,594	
Total investments at market value		$16,122,440,027		$14,240,367,622
Capital assets		$6,489,879		$4,951,637
Total assets		$16,799,351,044		$14,925,556,068
Less accounts payable:				
Accounts payable and accrued expenses		-$37,587,430		-$38,484,600
Accrued investment expenses		-10,779,563		-11,324,180
Derivative instruments		0		-870,314
Purchases of investments		-197,722,529		-174,028,137
Security lending collateral		-863,691,212		-695,789,322
Total accounts payable		-$1,109,780,734		-$920,496,553
Net assets at market value		$15,689,570,310		$14,005,059,515
Net assets at actuarial value		$15,686,973,131		$14,752,102,625
Net assets at valuation value (retirement benefits)		$13,178,333,884		$12,439,250,206

Note: Results may be slightly off due to rounding.

EXHIBIT F

Development of the Fund Through June 30, 2017 for Retirement, Health, Family Death, and Larger Annuity Benefits

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return[1]	Benefit Payments	Actuarial Value of Assets at End of Year
2008	$411,658,277	$114,678,456	$1,042,592,669[2]	$576,014,324[3]	$10,805,841,634
2009	383,637,842	118,592,071	247,110,655	605,798,000	10,949,384,202
2010	362,751,146	126,961,295	261,593,064	681,106,189	11,019,583,518
2011	414,133,032	114,731,434	502,949,330	770,755,578	11,280,641,736
2012	423,920,740	178,246,151	504,812,528	767,163,328	11,620,457,827
2013	419,266,581	197,880,631	569,510,651	803,005,352	12,004,110,338
2014	455,658,786	204,135,914	1,098,165,281	826,566,921	12,935,503,398
2015	481,765,868	207,564,465	1,119,211,360	848,455,864[4]	13,895,589,227
2016	546,687,123	211,344,752	983,405,153	884,923,630	14,752,102,625
2017	550,961,514	227,531,810	1,085,017,439	928,640,257	15,686,973,131

[1] *Based on actuarial value of assets. Net of investment fees and administrative expenses.*

[2] *Includes an $11,000,000 return of excess reserve from PPO carrier.*

[3] *Includes transfer of $6,220,076 to Fire and Police Pension for Harbor Port Police.*

[4] *Includes transfer of $2,614,765 to Fire and Police Pension for Office of Public Safety.*

EXHIBIT G

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2017

1. Unfunded actuarial accrued liability at beginning of year	$4,985,746,123
2. Normal cost at beginning of year	340,758,622
3. Expected contributions at beginning of year*	-639,108,356
4. Interest	351,554,729
5. Expected unfunded actuarial accrued liability	$5,038,951,118
6. Changes due to net experience gain**	-99,814,895
7. Changes due to new actuarial assumptions	340,717,846
8. Unfunded actuarial accrued liability at end of year	$5,279,854,069

* *Net of the additional expected employer contributions due to the application of the 40-year minimum amortization required for the two GASB 25/27 layers, since the beginning of year UAAL was developed without the liability associated with those two layers. These additional contributions will serve to reduce the contribution loss (if any) from the scheduled one-year delay in implementing the higher contribution rates calculated in the prior valuation.*

** *The breakdown of the net experience gain is as follows:*

Gain due to actual contributions more than expected (with interest to end of year)	*-$29,046,903*
Investment loss	*75,706,073*
Gain due to lower than expected salary increases for continuing actives	*-47,159,674*
Gain due to lower than expected COLAs granted to retirees and beneficiaries	*-99,588,336*
Miscellaneous loss	*273,945*
Total gain	*-$99,814,895*

EXHIBIT H

Table of Amortization Bases

Type	Date Established	Initial Years	Initial Amount	Outstanding Balance	Years Remaining	Annual Payment*
Plan amendment (2009 ERIP)	06/30/2009	15	$300,225,354	$220,154,898	7	$34,906,113
Combined base	06/30/2012	30	4,173,548,280	4,561,557,128	25	270,674,008
Experience loss	06/30/2013	15	116,022,989	106,096,768	11	11,451,098
Experience gain	06/30/2014	15	-215,549,892	-203,095,363	12	-20,429,567
Change in assumptions	06/30/2014	20	785,439,114	785,248,701	17	60,482,882
Experience gain	06/30/2015	15	-185,473,782	-179,254,539	13	-16,920,941
Experience gain	06/30/2016	15	-255,444,007	-251,756,475	14	-22,431,704
Experience gain	06/30/2017	15	-99,814,895	-99,814,895	15	-8,436,852
Change in assumptions	06/30/2017	20	340,717,846	340,717,846	20	23,393,675
Subtotal before GASB amount				$5,279,854,069		$332,688,712
40-year minimum GASB 25/27	06/30/2004	15	$29,189,615	$8,158,181	2	$4,151,672
40-year minimum GASB 25/27	06/30/2005	15	12,708,684	5,029,763	3	1,736,600
Total				$5,293,042,013		$338,576,984

* *Beginning of year payments, based on level percentage of payroll.*

Note: The equivalent single amortization period is about 23 years.

EXHIBIT I

Section 415 Limitations

Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of $160,000 indexed for inflation. That limit is $215,000 for 2017. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

Contribution rates determined in this valuation have not been reduced for the Section 415 limitations. Actual limitations will result in gains as they occur.

EXHIBIT J
Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions:	The estimates on which the cost of the Plan is calculated including: (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future; (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates; (c) Retirement rates — the rate or probability of retirement at a given age; and (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Normal Cost:	The amount of contributions required to fund the benefit allocated to the current year of service.
Actuarial Accrued Liability For Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability For Pensioners:	The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.
Unfunded Actuarial Accrued Liability:	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
Amortization of the Unfunded Actuarial Accrued Liability:	Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and market gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the market gains and losses to avoid significant swings in the value of assets from one year to the next.

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired members as of the valuation date (including 3,917 beneficiaries in pay status)		18,805
2. Inactive members during year ended June 30, 2017 (including 5,078 members with under 5 years of service eligible for a refund of contributions)		7,428
3. Members active during the year ended June 30, 2017		25,457
Fully vested	19,188	
Not vested	6,269	

The actuarial factors as of the valuation date are as follows:

Assets			
1. Valuation value of assets ($15,689,570,310 at market value as reported by LACERS and $15,686,973,131 at actuarial value*)		$13,178,333,884	
2. Present value of future normal costs			
Employee	$1,756,585,351		
Employer	1,071,055,834		
Total		2,827,641,185	
3. Unfunded actuarial accrued liability		5,279,854,069	
4. Present value of current and future assets		$21,285,829,138	
Liabilities			
5. Present value of future benefits			
Retired members and beneficiaries	$9,861,673,224		
Inactive members	472,723,550		
Active members	10,951,432,364		
Total			$21,285,829,138

* *Market value and actuarial value of assets include assets for Retirement, Health, Family Death, and Larger Annuity Benefits.*

EXHIBIT I (continued)
Summary of Actuarial Valuation Results

The determination of the recommended contribution is as follows:

		Tier 1	Tier 3	Combined
	Before Reflecting Enhanced Benefits for APO			
1.	Total normal cost(1)	$334,390,089	$17,892,523	$352,282,612
2.	Expected employee contributions(2)	-205,720,520	-13,307,624	-219,028,144
3.	Employer normal cost: (1) + (2)	$128,669,569	$4,584,899	$133,254,468
4.	Payment on projected unfunded actuarial accrued liability	$318,001,527	$20,575,457	$338,576,984
5.	Total recommended contribution: (3) + (4), payable beginning of year	$446,671,096	$25,160,356	$471,831,452
6.	Total recommended contribution: adjusted for July 15 payment	447,957,750	25,232,831	473,190,581
7.	Total recommended contribution: adjusted for biweekly payment	462,579,626	26,056,461	488,636,087
8.	Item 5 (beginning of year contribution) as a percentage of projected payroll: (5) ÷ (17)	23.05%	20.08%	22.87%
9.	Item 6 (July 15 contribution) as a percentage of projected payroll: (6) ÷ (17)	23.13%	20.13%	22.94%
10.	Item 7 (biweekly contribution) as a percentage of projected payroll: (7) ÷ (17)	23.88%	20.79%	23.69%
	After Reflecting Enhanced Benefits for APO			
11.	Total recommended contribution: payable beginning of year	$448,800,203	$25,253,545	$474,053,748
12.	Total recommended contribution: adjusted for July 15 payment	450,349,794	25,316,209	475,666,003
13.	Total recommended contribution: adjusted for biweekly payment	464,877,207	26,143,372	491,020,579
14.	Item 11 (beginning of year contribution) as a percentage of projected payroll: (11) ÷ (17)	23.17%	20.15%	22.99%
15.	Item 12 (July 15 contribution) as a percentage of projected payroll: (12) ÷ (17)	23.25%	20.20%	23.06%
16.	Item 13 (biweekly contribution) as a percentage of projected payroll: (13) ÷ (17)	24.00%	20.86%	23.81%
17.	Projected payroll	$1,936,988,361	$125,327,768	$2,062,316,129

(1) *The combined normal cost would normally be used as the service cost in next year's GAS 67 valuation for fiscal year ending June 30, 2018. However, since the enhanced benefits for APO are effective on January 7, 2018, an adjustment will need to be made to the GAS 67 service cost next year to include a partial year of normal cost for the enhanced benefits from January 7, 2018 to June 30, 2018 for the APO members who elect to remain at LACERS and receive the enhanced benefits.*

(2) *Discounted to beginning of year.*

EXHIBIT II
History of Employer Contributions

Plan Year Ended June 30	Actuarially Determined Employer Contributions (ADEC)*	Actual Contributions	Percentage Contributed
2008	$288,119,041	$288,119,041	100.00%
2009	274,554,786	274,554,786	100.00%
2010	258,642,795	258,642,795	100.00%
2011	303,560,953	303,560,953	100.00%
2012	308,539,905	308,539,905	100.00%
2013	346,180,852	346,180,852	100.00%
2014	357,649,232	357,649,232	100.00%
2015	381,140,923	381,140,923	100.00%
2016	440,546,011	440,546,011	100.00%
2017	453,356,059	453,356,059	100.00%

* Prior to plan year ending June 30, 2014, this amount was the Annual Required Contribution (ARC).

EXHIBIT III

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions: The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2011 through June 30, 2014 Actuarial Experience Study dated October 8, 2014 and the June 30, 2017 Review of Economic Actuarial Assumptions dated June 30, 2017. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 3 members. These assumptions have been adopted by the Board.

Economic Assumptions:

Net Investment Return: 7.25%, net of investment and administrative expenses.

Consumer Price Index: Increase of 3.00% per year; benefit increases due to CPI subject to 3.00% maximum for Tier 1 and 2.00% maximum for Tier 3.

Employee Contribution Crediting Rate: Based on average of 5-year Treasury note rate. An assumption of 3.00% is used to approximate that crediting rate in this valuation.

Salary Increases: Inflation: 3.00%; plus additional 0.50% “across the board” salary increases (other than inflation); plus the following merit and promotional increases:

Service	Percentage Increase
0	6.50%
1	6.20%
2	5.10%
3	3.10%
4	2.10%
5	1.10%
6	1.00%
7	0.90%
8	0.70%
9	0.60%
10+	0.40%

Demographic Assumptions:

Post-Retirement Mortality Rates:

Healthy Members and All Beneficiaries:	RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and with no setback for females.
Disabled Members:	RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set forward seven years for males and set forward eight years for females.

The above mortality tables contain about a 10% margin, based on actual to expected deaths, as a provision to reflect future mortality improvement, based on a review of mortality experience as of the measurement date.

Termination Rates Before Retirement:

Pre-Retirement Mortality:	RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and with no setback for females.

	Rate (%)	
Age	Disability	Termination*
25	0.01	5.75
30	0.03	5.75
35	0.05	4.85
40	0.09	3.50
45	0.15	2.70
50	0.19	2.50
55	0.20	2.35
60	0.20	2.25

* *Rates for members with five or more years of service. Termination rates are zero for members eligible to retire.*

Rates of termination for members with less than 5 years of service are as follows:

	Rate (%)
Service	**Termination (Based on Service)**
0	13.25
1	11.00
2	8.75
3	7.25
4	5.75

Retirement Rates:

	Rate (%)			
	Tier 1		Tier 3	
Age	**Non-55/30**	**55/30**	**Non-55/30**	**55/30**
50	6.0	0.0	6.0	0.0
51	3.0	0.0	3.0	0.0
52	3.0	0.0	3.0	0.0
53	3.0	0.0	3.0	0.0
54	16.0	0.0	15.0	0.0
55	6.0	20.0	0.0(1)	19.0
56	6.0	14.0	0.0(1)	13.0
57	6.0	14.0	0.0(1)	13.0
58	6.0	14.0	0.0(1)	13.0
59	6.0	14.0	0.0(1)	13.0
60	6.0	14.0	5.0	13.0
61	6.0	14.0	5.0	13.0
62	7.0	15.0	6.0	14.0
63	7.0	15.0	6.0	14.0
64	7.0	16.0	6.0	15.0
65	12.0	17.0	11.0	16.0
66	12.0	17.0	11.0	16.0
67	12.0	17.0	11.0	16.0
68	12.0	17.0	11.0	16.0
69	12.0	17.0	11.0	16.0
70	100.0	100.0	100.0	100.0

(1) *Not eligible to retire under the provisions of the Tier 3 plan.*

Retirement Age and Benefit for Inactive Vested Participants: Pension benefit paid at the later of age 58 or the current attained age.
For reciprocals, 3.90% compensation increases per annum.

Exclusion of Inactive Members: All inactive participants are included in the valuation.

Unknown Data for Members: Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.

Percent Married/Domestic Partner: 76% of male participants; 50% of female participants.

Age of Spouse: Male retirees are assumed to be 4 years older than their female spouses. Female retirees are assumed to be 2 years younger than their male spouses.

Service: Employment service is used for eligibility determination purposes. Benefit service is used for benefit calculation purposes.

Future Benefit Accruals: 1.0 year of service per year.

Other Reciprocal Service: 5% of future inactive vested members will work at a reciprocal system.

Actuarial Methods:

Actuarial Value of Assets: 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. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.

Actuarial Cost Method:	Entry Age Cost Method, level percent of salary.
Funding Policy:	The plan sponsor of the City of Los Angeles Employees' Retirement System makes contributions equal to the normal cost adjusted by an amount to amortize any surplus or unfunded actuarial accrued liability. The amortization method for the UAAL is a level percent of payroll, assuming annual increases in total covered payroll equal to inflation plus across the board increases (other than inflation). Both the normal cost and the actuarial accrued liability are determined under the Entry Age cost method and are calculated on an individual basis. Entry age is calculated as age on the valuation date minus years of employment service. Under the current funding policy, changes in the UAAL due to actuarial gains/losses are amortized over separate 15-year periods. Any changes in the UAAL due to assumption or method changes are amortized over separate 20-year periods. Plan changes, including the 2009 ERIP, are amortized over separate 15-year periods. Future ERIPs will be amortized over 5 years. Any actuarial surplus is amortized over 30 years. All the bases on or before June 30, 2012, except those arising from the 2009 ERIP and the two GASB 25/27 layers, were combined and amortized over 30 years effective June 30, 2012. The recommended contribution is set equal to the greater of the current funding policy or the minimum Annual Required Contribution (ARC) as determined by the then current GASB Statements 25 and 27. In particular, an additional contribution due to the application of the 40-year minimum amortization requirement for both fiscal year 2003/2004 and fiscal year 2004/2005 is included in the calculation of the recommended contribution.
Changes in Actuarial Assumptions:	Based on the June 30, 2017 Review of Economic Actuarial Assumptions, the following actuarial assumptions were changed. Previously, these assumptions were as follows:
Economic Assumptions:	
Net Investment Return:	7.50%, net of investment and administrative expenses.
Consumer Price Index:	Increase of 3.25% per year; benefit increases due to CPI subject to 3.00% maximum for Tier 1 and 2.00% maximum for Tier 3.

Changes in Actuarial Assumptions (continued):

Employee Contribution Crediting Rate: Based on average of 5-year Treasury note rate. An assumption of 3.25% is used to approximate that crediting rate in this valuation.

Salary Increases: Inflation: 3.25%; plus additional 0.75% “across the board” salary increases (other than inflation); plus the following merit and promotional increases:

Service	Percentage Increase
0	6.50%
1	6.20%
2	5.10%
3	3.10%
4	2.10%
5	1.10%
6	1.00%
7	0.90%
8	0.70%
9	0.60%
10+	0.40%

Retirement Age and Benefit for Inactive Vested Participants: Pension benefit paid at the later of age 58 or the current attained age. For reciprocals, 4.40% compensation increases per annum.

EXHIBIT IV
Summary of Plan Provisions

This exhibit summarizes the major provisions of LACERS included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions. Plan provisions for the enhanced benefits for Airport Peace Officers that are scheduled to take effect January 7, 2018 are included as an attachment to this report.

Plan Year:	July 1 through June 30
Census Date:	June 30
Membership Eligibility:	
Tier 1 *(§ 4.1002(a))*	All employees who became members of the Retirement System before July 1, 2013, and certain employees who became members of the Retirement System on or after July 1, 2013. In addition, pursuant to Ordinance No. 184134, all Tier 2 employees who became members of the Retirement System between July 1, 2013 and February 21, 2016 were transferred to Tier 1 effective February 21, 2016.
Tier 3 *(§4.1080.2(a))*	All employees who became members of the Retirement System on or after February 21, 2016, except as provided otherwise in Section 4.1080.2(b) of the Los Angeles Administrative Code.
Normal Retirement Benefit:	
Tier 1	
Age & Service Requirement	Age 70; or
(§ 4.1005(a))	Age 60 with 10 years of continuous City service; or
	Age 55 with at least 30 years of City service.
Amount (§ 4.1007(a))	2.16% per year of service credit (not greater than 100%) of the Final Average Monthly Compensation.

Normal Retirement Benefit: (continued)

Tier 3

➤ *With less than 30 Years of Service (§ 4.1080.5(a)(2)(i))*

Age & Service Requirement	Age 60 with 10 years of service, including 5 years of continuous City service.
Amount	1.50% per year of service credit at age 60 (not greater than 80%*) of the Final Average Monthly Compensation.

➤ *With 30 or more Years of Service (§ 4.1080.5(a)(2)(ii))*

Age & Service Requirement	Age 60 with 30 years of service, including 5 years of continuous City service.
Amount	2.00% per year of service credit at age 60 (not greater than 80%*) of the Final Average Monthly Compensation.

* *Except when benefit is based solely on the annuity component funded by the member's contributions.*

Early Retirement Benefit:

Tier 1

Age & Service Requirement (§ 4.1005(b))	Age 55 with 10 years of continuous City service; or Any age with 30 years of City service.
Amount (§ 4.1007(b))	2.16% per year of service credit (not greater than 100%) of the Final Average Monthly Compensation, reduced for retirement ages below age 60 using the following Early Retirement benefit adjustment factors:

Age	Factor	Age	Factor
45	0.6250	53	0.8650
46	0.6550	54	0.8950
47	0.6850	55	0.9250
48	0.7150	56	0.9400
49	0.7450	57	0.9550
50	0.7750	58	0.9700
51	0.8050	59	0.9850
52	0.8350	60	1.0000

Early Retirement Benefit: (continued)

Tier 3

Age & Service Requirement (§ 4.1080.5(a)(1))	Prior to age 60 with 30 years of service, including 5 years of continuous City service.
Amount (§ 4.1080.5(a)(1))	2.00% per year of service credit (not greater than 80%*) of the Final Average Monthly Compensation, reduced for retirement ages below age 55 using the following Early Retirement benefit adjustment factors:

Age	Factor	Age	Factor
45	0.6250	50	0.7750
46	0.6550	51	0.8050
47	0.6850	52	0.8350
48	0.7150	53	0.8650
49	0.7450	54	0.8950
		55 - 60	1.0000

* *Except when benefit is based solely on the annuity component funded by the member's contributions.*

Enhanced Retirement Benefit:

Tier 1

Age & Service Requirement	Not applicable - see Normal Retirement age and service requirement.
Amount	Not applicable - see Normal Retirement amount.

Tier 3

➤ *With less than 30 Years of Service (§ 4.1080.5(a)(3)(i))*

Age & Service Requirement	Age 63 with 10 years of service, including 5 years of continuous City service.
Amount	2.00% per year of service credit at age 63 (not greater than 80%*) of the Final Average Monthly Compensation.

* *Except when benefit is based solely on the annuity component funded by the member's contributions.*

Enhanced Retirement Benefit: (continued)

Tier 3

➤ *With 30 or more Years of Service (§ 4.1080.5(a)(3)(ii))*

Age & Service Requirement	Age 63 with 30 years of service, including 5 years of continuous City service.
Amount	2.10% per year of service credit at age 63 (not greater than 80%*) of the Final Average Monthly Compensation. * *Except when benefit is based solely on the annuity component funded by the member's contributions.*

Service Credit:

Tiers 1 & 3

(§ 4.1001(a) & § 4.1080.1(a))	The time component of the formula used by LACERS for purposes of calculating benefits.

Final Average Monthly Compensation:

Tier 1

(§ 4.1001(b))	Equivalent of monthly average salary of highest continuous 12 months (one year); includes base salary plus regularly assigned pensionable bonuses or premium pay.*

Tier 3

(§ 4.1080.1(b))	Equivalent of monthly average salary of highest continuous 36 months (three years); limited to base salary and any items of compensation that are designated as pension based.*

* *IRC Section 401(a)(17) compensation limit would apply to all employees who began membership in LACERS after June 30, 1996.*

Cost of Living Benefit:

Tier 1

(§ 4.1022) Based on changes to Los Angeles area Consumer Price Index, to a maximum of 3% per year; excess banked.

Tier 3

(§ 4.1080.17) Based on changes to Los Angeles area Consumer Price Index, to a maximum of 2% per year; excess not banked.

Death after Retirement:

Tier 1 & 3

(§ 4.1010(c) & § 4.1080.10(c))

(i) 50% of retiree's unmodified allowance continued to an eligible spouse or a domestic partner; or a modified continuance to an eligible spouse or a domestic partner at the time of member's death (or a designated beneficiary selected by member at the time of retirement)*;

(ii) $2,500 lump sum death benefit paid to a designated beneficiary; and

(iii) Any unused contributions if the member has elected the cash refund annuity option.

* *The retiree may elect at the time of retirement to take a reduced allowance in order to provide for a higher continuance percentage pursuant to the provisions of either Section 4.1015 (Tier 1) or Section 4.1080.14 (Tier 3).*

Death before Retirement:

Tier 1 & 3

(§ 4.1010(a) & § 4.1080.10(a)) Greater of:

Option #1:

(i) Eligibility – None.

(ii) Benefit – Refund of employee contributions plus a limited pension benefit equal to 50% of monthly salary paid, according to the following schedule:

Death before Retirement: (continued)

Tier 1 & 3 (continued)

Service Credit	Number of Monthly Payments
Less than 1 year	0
1 year	2
2 years	4
3 years	6
4 years	8
5 years	10
6+ years	12

Option #2:

(i) Eligibility – Duty-related death or after 5 years of continuous service.

(ii)Benefit – Continuance of service or disability benefit payable under 100% joint and survivor option to an eligible spouse or qualified domestic partner.

Member Contributions:

Tier 1

(§ 4.1003)

Effective July 1, 2011, the member contribution rate became 7% for all employees. Of the 7% rate, 0.5% is the survivor contribution portion and 6.5% is the normal contribution. The 7% member rate shall be paid until June 30, 2026 or until the ERIP Cost Obligation (defined in ERIP Ordinance No. 180926) is fully paid, whichever comes first*.

Beginning January 1, 2013, all non-represented members and members in certain bargaining groups are required to pay an additional 4% member contribution rate to defray the cost of providing a Retiree Medical Plan premium subsidy (this additional rate has increased to 4.5% for certain members).

Members with no eligible spouse or domestic partner at retirement can request a refund of the survivor portion of the member contributions (i.e., generally based on a contribution rate of 0.5% of pay).

* *The member contribution rate will drop down to 6% afterwards.*

Member Contributions: (continued)

Tier 3	
(§ 4.1080.3)	The member contribution rate is 7% for all employees. Of the 7% rate, 0.5% is the survivor contribution portion and 6.5% is the normal contribution. All members are required to pay an additional 4% member contribution rate to defray the cost of providing a Retiree Medical Plan premium subsidy. Members with no eligible spouse or domestic partner at retirement can request a refund of the survivor portion of the member contributions (i.e., generally based on a contribution rate of 0.5% of pay).

Disability

Tier 1 & 3	
Service Requirement	
(§ 4.1008(a) & § 4.1080.8(a))	5 years of continuous service
*Amount**	
(§ 4.1008(c) & § 4.1080.8(c))	1/70 (1.43%) of the Final Average Monthly Compensation per year of service or 1/3 of the Final Average Monthly Compensation, if greater.

* *The benefit calculated using the service retirement formula will be paid if the member is eligible and that benefit is greater than that calculated under the disability retirement formula.*

Deferred Retirement Benefit (Vested):

Tier 1	
(§ 4.1006)	
Age & Service Requirement	Age 70 with 5 years of continuous City service; or Age 60 with 5 years of continuous City service and at least 10 years elapsed from first date of membership; or Age 55 with at least 30 years of service. Deferred employee who meets part-time eligibility: age 60 and at least 10 years elapsed from first date of membership.
Amount	Normal retirement benefit (or refund of contributions and accumulated interest).

Deferred Retirement Benefit (Vested): (continued)

Tier 1 (continued)

Age & Service Requirement	Age 55 with 5 years of continuous City service and at least 10 years elapsed from first date of membership; or Age 55 with 10 years of continuous City service. Deferred employee who meets part-time eligibility: age 55 and at least 10 years elapsed from first date of membership.
Amount	Early retirement benefit (or refund of contributions and accumulated interest), using the following Early Retirement benefit adjustment factors:

Age	Factor
55	0.9250
56	0.9400
57	0.9550
58	0.9700
59	0.9850

Tier 3

(§ 4.1080.6)

Age & Service Requirement	Age 60 with 5 years of continuous City service and at least 10 years elapsed from first date of membership; or Age 70 with 5 years of continuous City service, regardless of the number of years that have elapsed from first date of membership.
Amount	Normal retirement benefit (based on a Retirement Factor of 1.50%; or refund of contributions and accumulated interest).
Age & Service Requirement	Age 60 with 30 years of continuous City service and at least 10 years elapsed from first date of membership; or Age 63 with 10 years of service, including 5 years of continuous City service.
Amount	Normal retirement benefit (based on a Retirement Factor of 2.00%; or refund of contributions and accumulated interest).

Deferred Retirement Benefit (Vested): (continued)

Tier 3 (continued)

Age & Service Requirement	Age 63 with 30 years of continuous City service and at least 10 years elapsed from first date of membership.
Amount	Enhanced retirement (benefit based on a Retirement Factor of 2.10%; or refund of contributions and accumulated interest).
Age & Service Requirement	Age 55 (but not yet 60) with 5 years of continuous City service and at least 10 years elapsed from first date of membership.
Amount	Early retirement benefit (based on a Retirement Factor of 1.50% instead of 2.00%; or refund of contributions and accumulated interest), using the following Early Retirement benefit adjustment factors:

Age	Factor
55	0.9250
56	0.9400
57	0.9550
58	0.9700
59	0.9850

Withdrawal of Contributions Benefit (Ordinary Withdrawal):

Refund of employee contributions with interest.

Changes in Plan Provisions: None.

NOTE: *The summary of major Plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the System should find the plan summary not in accordance with the actual provisions, the System should alert the actuary so that both parties can be sure the proper provisions are valued.*

APPENDIX A

Segal Consulting

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March 8, 2017

Mr. Tom Moutes
General Manager
Los Angeles City Employees' Retirement System
202 West First Street, Suite 500
Los Angeles, CA 90012-4401

Re: Los Angeles City Employees' Retirement System
2017/2018 Employer Rates Adjusted to Reflect Enhanced Tier 1 Benefit

Dear Tom:

In the attached report dated February 8, 2017, we calculated the additional costs under a proposed Ordinance to provide enhanced service retirement, disability retirement and death benefits for Airport Peace Officers (APO) if they decide to continue their membership at LACERS instead of transferring to Los Angeles Fire and Police Pensions (LAFPP) on January 7, 2018.

In this letter, we have adjusted the 2017/2018 contribution rates for LACERS previously provided in our June 30, 2016 valuations for the retirement and health plans to reflect the enhanced Tier 1 benefit[1,2] should some of those members decide to stay at LACERS on January 7, 2018.

Background

Under the proposed Ordinance, an enhanced benefit will be provided to APO members who decide to continue their membership at LACERS. Because the APO members will remain in the current Tier 1 plan (and not be transferred into a separate tier), we have taken the additional normal cost calculated in our February 8, 2017 report and expressed that as a percentage of all

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[1] Under the proposed Ordinance, all Tier 3 Airport Peace Officers would first receive an upgrade to the current (or pre-enhanced) Tier 1 plan. The cost to provide that upgrade will be paid in a lump sum and we have NOT included that lump sum cost in this letter.

[2] Under the proposed Ordinance, there is a mandatory $5,700 contribution per APO employee to receive the enhancement. The $5,700 contribution will be paid in a lump sum and we have NOT included the lump sum amount in this letter.

Tier 1 member payroll used in the June 30, 2016 valuations. Similarly, we have taken the additional cost to pay off the additional Unfunded Actuarial Accrued Liability (UAAL) calculated in our February report and expressed that as a percentage of all Tier 1 and Tier 3 member payrolls used in the June 30, 2016 valuations. We have included Tier 1 and Tier 3 member payrolls because the same UAAL contribution rate was developed in the June 30, 2016 valuations for all members in LACERS.

As we would not know until around January 7, 2018 which APO member will elect to continue LACERS membership, we included two scenarios in our February report. Under Scenario 1, we assumed all APO members would remain at LACERS while under Scenario 2, we assumed only APO members with 5 or more years of service would stay at LACERS. We chose Scenario 2 in preparing the results in this letter based on the presumption that members with 5 or more years of service would have to incur a higher cost to convert all of their past LACERS service at LAFPP as required by the Ordinance and could therefore be more likely to elect to stay at LACERS.[3] That is, we used the results from Scenario 2 in adjusting the rates for the City for 2017/2018.

The increases under Scenario 2 are as follows:

	Retirement Plan	**Health Plan**
Increase in Annual Employer Contribution Dollars[*]		
Normal Cost	$895,467	$33,633
UAAL[**]	$1,336,894	$58,857
Increase in Annual Employer Contribution Rates[*]		
Normal Cost, based on all Tier 1 Member (Payroll of $1,939,683,049)	0.05%	0.00%[***]
UAAL, based on all Tier 1 and Tier 3 Member (Payroll of $1,968,702,630)	0.07%	0.00%[***]

[*] The above contribution rates and amounts have been calculated assuming that they would be paid at the beginning of the plan year and that the improvement would be in force for the full year. While we would generally add a half-year of interest when we convert the above contribution amounts into a percent payroll rate if paid by the employer at the end of each pay period, here we would only add a quarter-year of interest to take into account that the enhanced benefit is only in effect during the second half of 2017/2018. As the rate increases are relatively small, there are no changes in the resulting rates after they are adjusted for interest.

[**] Reflects reduction in actuarial accrued liability for mandatory $5,700 contribution per remaining employee.

[***] After rounding the rates to the nearest 0.01% of payroll.

As the enhancement will only be provided effective January 7, 2018 for about one-half of a year, we would recommend that only one-half of the above rate increases be added to those

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[3] After going through the calculations for both Scenarios, we concluded the difference in cost between the two scenarios was quite small.

annual contribution rates originally recommended in our June 30, 2016 valuation reports if the intent is that a level employer contribution rate would be paid for 2017/2018. A comparison of the employer rates before and after reflecting the enhancement is as follows:

Retirement Plan Only	**Before Enhancement**	**After Enhancement**
Tier 1		
Employer Normal Cost	6.74%	6.76%
Employer UAAL	15.44%	15.48%
Total Recommended Contribution, beginning of year	22.18%	22.24%
Total Recommended Contribution, July 15	22.25%	22.31%
Total Recommended Contribution, end of pay period	23.00%	23.06%
Tier 3		
Employer Normal Cost	3.85%	3.85%
Employer UAAL	15.44%	15.48%
Total Recommended Contribution, beginning of year	19.29%	19.33%
Total Recommended Contribution, July 15	19.34%	19.38%
Total Recommended Contribution, end of pay period	19.99%	20.03%

As noted, the above table is with respect to the change in the rates for the retirement plan. There are no changes to the employer's contribution rates to the health plan.

We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. We look forward to discussing this with you and your Board.

Please let us know if you have any questions.

Sincerely,

Andy Yeung

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

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

AY/hy
Enclosure (5469882)

Los Angeles City Employees' Retirement System

Proposed Enhanced Benefits for Airport Peace Officers Who Elect to Remain at LACERS

Segal Consulting

Segal Consulting

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February 8, 2017

Mr. Richard H. Llewellyn
Interim City Administrative Officer
Attention: Ms. Maritta Aspen
Chief, Employee Relations Division
City of Los Angeles
200 North Main Street, Suite 1500
Los Angeles, CA 90012-4137

Dear Richard:

We are pleased to submit our study of proposed enhanced benefits for Airport Peace Officers (APO) at the Los Angeles City Employees' Retirement System (LACERS) who elect to remain at LACERS prior to January 7, 2018. Current APO members who do not elect to remain at LACERS would otherwise elect to be transferred to Los Angeles Fire and Police Pension Plan (LAFPP) Tier 6 by January 7, 2018. From that date (hereafter referred to as the "LAFPP transfer date") forward, all new Airport Peace Officers would be enrolled in LAFPP Tier 6, rather than in LACERS.

To conduct this study, we have utilized the membership data from the June 30, 2016 LACERS retirement and retiree health valuations pertaining to this group of active members, with an adjustment to exclude those employees who are expected to exit the workforce, using the actuarial assumptions used in this study, for the approximate 18-month period following the June 30, 2016 valuation. No current inactive vested members, retirees, or beneficiaries previously employed as Peace Officers have been included in this study. With the exception of the service retirement assumptions and a few other miscellaneous assumptions discussed herein, this study uses the same actuarial assumptions and methodologies adopted by the Retirement Board for use in the June 30, 2016 LACERS valuations. A brief description of the methodology used to select the service retirement assumptions for the proposed enhanced benefits is provided in Section 1.

The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, Enrolled Actuary and Thomas Bergman, ASA, MAAA, Enrolled Actuary. Both are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

Andy Yeung

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

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

DNA/bbf

cc: Tom Moutes

SECTION 1

REVIEW SUMMARY

SECTION 2

VALUATION RESULTS

SECTION 3

SUPPORTING EXHIBITS

BASIS FOR CONTRIBUTION RECOMMENDATIONS

- To estimate the potential cost impact of the proposed enhanced benefits for members who elect to remain at LACERS, we have utilized the data provided for the June 30, 2016 LACERS valuations of the retirement and retiree health plans pertaining to active Airport Peace Officers (APO). Based on prior discussions with LACERS when we prepared similar studies in the past few years, it is our understanding that this group of employees is represented by the following Bargaining Units: 30 (L. A. Airport Peace Officers), 39 (L. A. Airport Supervisory Peace Officers), and 40 (Airport Peace Command Officers). It is our further understanding there were no civilian employees within those Bargaining Units that should be excluded from our study. In addition, there were three active non-represented Airport Peace Officers as of June 30, 2016, and we have included those members in this study.

  As of the June 30, 2016 valuation date, Airport Peace Officers were enrolled in the LACERS Tier 1 plan if they were hired before July 1, 2013, or if they became a member of Tier 2 between July 1, 2013 and February 21, 2016 and were subsequently transferred to Tier 1 effective February 21, 2016 (pursuant to Ordinance No. 184134). Airport Peace Officers were enrolled in the LACERS Tier 3 plan if they were hired on or after February 21, 2016. Pursuant to the draft Ordinance upon which this study is based, the APO currently in Tier 1 who would be entitled to the enhanced benefits will remain in the current Tier 1, which also contains other Tier 1 members in all other City departments. That is, the APO Tier 1 members receiving enhanced benefits will not be placed in a separate tier. Furthermore, the draft Ordinance states that the APO currently in Tier 3 who will be entitled to the enhanced benefits will also be placed in the current Tier 1, effective January 7, 2018. *Note that, even though APO Tier 1 and Tier 3 members will be placed in the current Tier 1 with the other Tier 1 members in all other City departments, throughout the remainder of this report we have used the term "APO tier" to represent just the APO members in the combined Tier 1 group that are entitled to the enhanced benefits (i.e., the APO subgroup of the whole Tier 1 group that is included in this study).*

- Note that any inactive vested members, retired members, and beneficiaries as of June 30, 2016, and any members hired after June 30, 2016, are not included in this study. The adjustments we have made to account for expected terminations (including retirements, disabilities, deaths, deferred vested retirements, and refunds) between the June 30, 2016 valuation date and the January 7, 2018 LAFPP transfer date have been noted at the point where those adjustments were made. (In order to simplify the calculations, we have only adjusted the projected terminations over an 18-month period.) The demographic profile of the current Airport Peace Officers used in this study is provided in subsection 2B.

- Current APO members can elect to remain at LACERS and receive the enhanced benefits described in the draft Ordinance, or they can elect to purchase all of their past LACERS service and transfer that service to LAFPP Tier 6. At this time, we do not know specifically which members will elect to remain at LACERS and will be eligible for the enhanced benefits. In prior studies similar to this, we made the assumption that members with lower service would be most likely to purchase their past LACERS service and transfer to LAFPP, with the higher service members likely to remain at LACERS due to the higher cost to those members of purchasing their past service.

Accordingly, as we have previously discussed with the City, we have shown a range of costs for the enhanced LACERS benefits in this report based on including either all APO members (Scenario 1) or only APO members with 5 or more years of service (Scenario 2).

- For purposes of this study, we have determined the costs associated with transferring all of the current Airport Peace Officers from Tier 1 (i.e., after the APO Tier 3 members have been included in Tier 1 with APO Tier 1 members) to the new APO tier. We have also provided in subsections 2C-1 and 2C-2 the Normal Costs before and after they were re-calculated as if all Airport Peace Officers are already enrolled in Tier 1. As shown on page 16 for the retirement and health plans, under Scenario 1 there is a difference between the combined Tiers 1 and 3 employer Normal Cost rate of 8.42% versus the 8.45% Normal Cost rate re-calculated as if all Airport Peace Officers were already enrolled in Tier 1. However, under Scenario 2, there is no difference in the 8.25% combined Tiers 1 and 3 employer Normal Cost rate and the re-calculated Normal Cost rate shown on page 17, as there are no Tier 3 members under Scenario 2.

  It is beyond the scope of this study and, hence, we have excluded from our analysis the cost associated with providing LAFPP Tier 6 benefits for those APO members who elect to transfer out of LACERS. For a discussion of that cost, please refer to our letter dated July 7, 2016.

- In the on-going annual valuations, the City is paying the same Normal Cost contribution rates for all active members within their respective Tier, rates calculated based on the demographic profile of current active employees covered in all City departments. As a result, there is a pooling of actuarial experience, especially the average age at entry into LACERS, in determining the Normal Cost rates. For comparison purposes, we have re-calculated the employer and employee Normal Cost contribution rates for the pension and the retiree health plans based on only the data for the Airport Peace Officers included in this study under the current benefit formulas for Tiers 1 and 3, and compared these re-calculated rates with the Normal Cost contribution rates under the proposed APO tier.

  For the retirement plan, as we have shown on page 16, the employer Normal Cost rates developed in the June 30, 2016 valuation report based on employees covered in all departments were 6.74% for Tier 1 and 3.85% for Tier 3, payable at the beginning of the year. The re-calculated employer Normal Cost rates for only the Airport Peace Officers included in this study were 5.46% for Tier 1 and 2.51% for Tier 3 under Scenario 1 (all APO members), and 5.41% for Tier 1 under Scenario 2 (only APO members with 5 or more years of service; there were no Tier 3 APO members with 5 or more years of service, so no Tier 3 normal cost rate has been provided under this Scenario). The re-calculated employee Normal Cost rates for the Airport Peace Officers were 10.60% under both Scenarios 1 and 2. (This employee rate has been discounted with interest to the beginning of the year. Before discounting, the rate is 11.00% for both Tier 1 and Tier 3.) The lower employer Normal Cost rates calculated for the Airport Peace Officers is mainly attributable to the lower ages at entry, on average, for the Airport Peace Officers in comparison to employees in all City departments.

  On an aggregate basis, the re-calculated, combined Tier 1 and Tier 3 employer Normal Cost rate for only the Airport Peace Officers was 5.45% under Scenario 1 and 5.41% under Scenario 2. The re-calculated employer Normal Cost rate for all Airport Peace Officers included in this study after treating all Airport Peace Officers as Tier 1 employees was 5.47% under Scenario 1 and 5.41% under Scenario 2.

Similarly for the health plan, we have shown on page 16 that on an aggregate basis the re-calculated combined Tier 1 and Tier 3 employer Normal Cost rate for the Airport Peace Officers only was 2.97% under Scenario 1. The re-calculated employer Normal Cost rate for all Airport Peace Officers included in this study after treating all Airport Peace Officers as Tier 1 employees was 2.98%, under Scenario 1. Under Scenario 2, the combined Tier 1 and Tier 3 employer Normal Cost rate was 2.84% and the re-calculated Tier 1 employer Normal Cost rate was also 2.84%.

- In addition to the employer contribution rates provided in Section 2, subsections D-1and D-2, it is anticipated that the employer would have to continue to contribute the same Unfunded Actuarial Accrued Liability (UAAL) rates of 15.44% and 1.43% of total payroll for the pension and health plans[1], respectively, that were determined in the June 30, 2016 valuation. This is because the UAAL rates were determined as a level percent of pay including payrolls for all current active members plus new entrants who entered LACERS after June 30, 2016.

- The draft Ordinance mentions that an APO member who elects to remain at LACERS and who would be eligible for the enhanced benefits "…shall be responsible for making a lump sum mandatory additional contribution payment of $5,700 to LACERS…before January 8, 2019…" The Ordinance further mentions that "if an Airport Peace Officer Member fails to complete this $5,700 payment before January 8, 2019, or prior to his or her retirement date, whichever is earlier, the Member shall forfeit eligibility for the enhanced benefits…" For purposes of this study, we have assumed that all APO members who elect to remain at LACERS prior to the January 7, 2018 LAFPP transfer date will make their $5,700 lump sum contributions on that date, as long as they have not exited the workforce before then. This is consistent with the timing we have utilized in adjusting the Actuarial Accrued Liability (AAL) to reflect APO members exiting the workforce prior to the LAFPP transfer date.[2] Note that there could be some small additional cost if, instead, all $5,700 payments were to be made at the end of the one-year period on January 8, 2019. Based on the actuarial assumptions used in this study, we estimate that out of the original 530 APO members as of June 30, 2016 under Scenario 1, approximately 483 members are anticipated to remain active as of January 7, 2018. Based on a $5,700 payment from each of these remaining members, we have estimated that a lump sum amount of about $2,754,000 would be due to LACERS as of January 7, 2018. This amount is provided at the end of subsection D-1 of this report. In the chart that is shown at the beginning of subsection D-1, we have discounted this amount with interest to the June 30, 2016 valuation date in order to present costs all as of the June 30, 2016 valuation date.

  Similarly, under Scenario 2, we anticipate that about 417 of the original 453 APO members as of June 30, 2016 will remain in active service as of January 7, 2018. This equates to a lump sum amount of about $2,373,000 as of January 7, 2018 due on account of these remaining members. This amount is provided at the end of subsection D-2 of this report.

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[1] *Assumes contributions are made at the beginning of the year.*

[2] *That adjustment is referenced in the Retirement Plan Costs subsection of Section 2A in this report.*

- Increases in the UAAL rates due to changes in benefit provisions and/or actuarial assumptions are discussed in Section 2 of this report. When we calculate the increase in UAAL to reflect the benefit improvements offered under the proposed APO tier, we have separately identified (1) the contributions required to be made by the Department of Airports (which equals the difference between the Tier 1 and Tier 3 Normal Cost rates adjusted with interest at the assumed earnings rate of 7.50%) to upgrade the Tier 3 benefit to the Tier 1 benefit for the members expected to continue in employment as APO and elect to remain at LACERS on January 7, 2018 and (2) the lump sum amount expected to be paid by January 7, 2018 of $5,700 per employee for the Tier 1 members (including those that will convert to Tier 1 from Tier 3) expected to continue in employment as APO and elect to remain at LACERS on January 7, 2018. Item (2), regarding the $5,700 lump sum contribution per remaining employee, has been deducted from the UAAL contribution rate calculation. Item (1), regarding the transfer of Tier 3 APO members to Tier 1, does not need to be deducted from the UAAL contribution rate calculation, since our starting point for cost comparison assumes that all APO members are already in the Tier 1 plan. We have separately identified the cost of that Tier 3 to Tier 1 transfer at the end of subsection D-1, under Scenario 1. Note that there is no additional cost for Item (1) under Scenario 2, since there were no Tier 3 APO members under that Scenario.

- Even though there are no proposed changes in the health plan benefits (as mentioned later in the Benefit Provisions subsection of Section 1), we have determined there to be additional health plan costs. These additional costs are attributable to the changes in the actuarial assumptions used for this study (to anticipate earlier retirement because of the enhanced retirement benefit) as discussed in the Assumptions and Methodologies subsection of Section 1.

ASSUMPTIONS AND METHODOLOGIES

- Most of the actuarial assumptions used in this study are the same as those adopted by the Retirement Board for use in the June 30, 2016 valuations.

  Under the current pension formula for Tier 1, normal retirement age to receive an unreduced retirement benefit is based on attaining the earlier of: (1) age 55 with 30 years of City service, (2) age 60 with 10 years of continuous City service, or (3) age 70. A subsidized, reduced early retirement benefit is paid for those members attaining age 55 with 10 years of continuous City service or any age (under 55) with 30 years of City service. The reduction is 1.5% for each year of retirement between 55 and 60 plus 3.0% for each year of retirement before age 55.

  The current retirement rates (probabilities) for Tier 1 are structured to anticipate lower incidences of retirement for members who have not yet attained age 55 with 30 years of service but can retire with a reduced early pension benefit. The current rates also use relatively higher retirement rates for members after they attain age 55 with 30 years of service since they can receive an unreduced pension benefit.

- As discussed in the following Benefit Provisions subsection, we have been requested to estimate the cost impact of an enhanced level of benefits for Airport Peace Officers within LACERS Tier 1. When we prepared similar studies in the past, we retained the current structure of having two sets of retirement assumptions for members with and without 30 years of service, since normal and early retirement eligibility remained unchanged. Each of the retirement rates for the APO tier were increased by a flat 1% over the rates currently utilized for Tier 1 members, to reflect the higher level of retirement benefits under that proposed tier.[3]

  The detailed retirement rates under the APO tier are provided in Section 3, Exhibit I.

- Currently for Tier 1 and Tier 3 members, future inactive vested participants are assumed to begin collecting pension benefits at the later of age 58 or the current attained age. We have maintained that assumption under the APO tier, since the same normal and early retirement eligibility provisions apply under that tier. We have also left all the termination rates unchanged under the APO tier, similar to the assumptions we made in our earlier studies for Options B and E back in 2015 and 2016.

- For the LACERS Tier 1 and Tier 3 plans, there is no distinction made between service-connected disability and non-service connected disability benefits, whereas a distinction is made between those two types of disability benefits under the APO tier. Due to this distinction, we made an assumption regarding the proportion of disabilities assumed to be service connected and non-service connected. This is discussed further in the following Benefit Provisions subsection. Note, however, that we have not made any changes to the rates

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[3] *The retirement rates utilized in this study for the APO tier are the same rates used in our Option B and Option E reports dated September 28, 2015 and April 5, 2016, respectively, since both of those studies were based on a 2.3% service retirement factor as well.*

of disability for this study, since no experience is available under either the non-enhanced or the enhanced disability benefit formulas for just the APO members. This is consistent with our past practice in pooling the disability experience of all LACERS members in developing the disability rates for various City departments.

BENEFIT PROVISIONS

➤ Comparison of Benefits

A comparison of the major benefit provisions under the current Tier 1 and the proposed APO tier is provided in Section 3, Exhibit II.

The transfer of existing Airport Peace Officers into the APO tier is based on the election of each member, and Tier 3 members electing to remain at LACERS would have their past service converted to Tier 1. APO employees who remain at LACERS would be responsible for a mandatory lump sum additional contribution of $5,700 to be paid before January 8, 2019 (or prior to their retirement date, if earlier) in order to receive the APO tier enhanced benefits.

➤ Eligibility for Service Retirement

Under the current Tier 1 pension formula, normal retirement age to receive an unreduced retirement benefit is based on attaining the earlier of: (1) age 55 with 30 years of City service, (2) age 60 with 10 years of continuous City service, or (3) age 70. A subsidized, reduced early retirement benefit is paid for those members attaining age 55 with 10 years of continuous City service or any age (under 55) with 30 years of City service. The reduction is 1.5% for each year of retirement between 55 and 60 plus 3.0% for each year of retirement before age 55.

The same provisions discussed above apply to the APO tier.

➤ Service Retirement Benefit

The current Tier 1 pension formula is *Retirement Factor (2.16%) x Final Average Compensation x Service Credit x Early Retirement Reduction Factor (age based)*. The maximum pension benefit is 100% of Final Average Compensation.

Under the APO tier, the pension formula is *Retirement Factor (2.30%) x Final Average Compensation x Service Credit x Early Retirement Reduction Factor (age based)*. The maximum pension benefit is 100% of Final Average Compensation.

The same Early Retirement Reduction Factors that are used for the current Tier 1 also apply to the APO tier. Retirement Factors at sample ages, with the Early Retirement Reduction Factor applied, are provided below for the current Tier 1 and the APO tier.

**Retirement Factor
(with Early Retirement Reduction Factor applied)**

Age	Current Tier 1	APO Tier
45	1.35%	1.44%
50	1.67%	1.78%
55	2.00%	2.13%
60	2.16%	2.30%

- **Disability Retirement Benefits**

  For the LACERS Tier 1 plan, there is no distinction between service-connected disability and non-service connected disability benefits[4].

  Under the APO tier, there are no age or service requirements for service connected disability eligibility. For non-service connected disability benefits, members are eligible after five years of service. The service connected disability benefit is 30% to 90% of Final Average Compensation depending on the severity of the disability, with a minimum of 2% of Final Average Compensation per year of Service Credit. The non-service connected disability benefit is 30% to 50% of Final Average Compensation depending on the severity of the disability.

  For cost purposes, we have assumed that 90% of disability retirements are service connected and the remaining 10% are non-service connected. This is the same assumption currently utilized in the LAFPP valuation. In addition, for all disability benefits we have assumed that the benefit calculated using the service retirement formula would be paid if the member is eligible and that benefit is greater than that calculated under the disability retirement formula.

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[4] *The current disability benefit is the greater of 1/3 (or 33.33%) of Final Average Compensation or 1/70 (or 1.43%) of Final Average Compensation for each year of service.*

- **Survivor Benefits**

  Under the APO tier, there is a distinction for pre- and post-retirement death benefits depending on whether the pre-retirement death or the member's original disability retirement prior to death is classified as service connected or non-service connected[5]. A comparison of the death benefits is provided in Section 3, Exhibit II. Under the APO tier, all pre-retirement deaths are assumed to be service connected.

- **Member Contribution Rates**

  Effective July 1, 2011, the member normal contribution rate became 7% for all Tier 1 employees. The 7% member rate will be paid until June 30, 2026 or until the Early Retirement Incentive Program (ERIP) Cost Obligation defined in Ordinance 180926 is fully funded (whichever comes first). The member normal contribution rate will drop down to 6% afterwards. Beginning January 1, 2013, all non-represented Tier 1 members and Tier 1 members in certain bargaining groups are required to pay an additional 4% member contribution rate to defray the cost of providing a Retiree Medical Plan premium subsidy (this additional rate has increased to 4.5% for certain members). Currently, all Tier 1 (and Tier 3) APO members are paying a rate of 11%. We have assumed that they will continue to pay the same 11% rate under the APO tier.

  APO employees who remain at LACERS would be responsible for a mandatory lump sum additional contribution of $5,700 to be paid before January 8, 2019 (or prior to their retirement date, if earlier) in order to receive the APO tier enhanced benefits.

  Members with no eligible spouse or domestic partner at retirement can request a refund of the survivor portion of the member contributions (i.e., generally based on a contribution rate of 0.5% of pay). Again, we have assumed under the APO tier that members will continue paying the member rates they are currently paying. We have continued to assume that the member normal contribution rate for the APO tier will drop down to 6% after June 30, 2026 or until the ERIP Cost Obligation is fully paid, whichever comes first.

- **Health Benefits**

  There are no proposed changes in health plan benefits relative to the current Tier 1. The changes in the employer Normal Cost rates for the proposed health plans, as shown in Section 2, take into account the changes in the service retirement rates assumed for this study.

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[5] *Under the current Tier 1 plan, there is a distinction between the eligibility for service-connected death benefits and non-service connected death benefits in that for a service-connected death, the eligible survivor is eligible for a disability survivorship benefit even if the member did not have five years of continuous service.*

A. DISCUSSION OF RESULTS

➤ Adjustment to APO Members as of June 30, 2016 to Anticipate Those Expected to Remain in Employment as of January 7, 2018

- It is our understanding that under the proposed Ordinance, only active APO members (such as the 530 and 453 that we started with in our projections as of June 30, 2016 for Scenarios 1 and 2, respectively) who remain active as of January 7, 2018 would be eligible for the enhanced benefits.

- In order to estimate the number of active APO members as of January 7, 2018, we applied the actuarial assumptions used in this study to predict expected terminations (including retirements[6], disabilities, deaths, deferred vested retirements, and refunds). We then excluded the approximate payroll and increase in UAAL from those expected to terminate over an approximate 18-month period following June 30, 2016 from this calculation.

➤ Retirement Plan Costs

Normal Cost

- As shown in subsection B, the average entry age of the Airport Peace Officers included in this study (approximately age 29 under either Scenario 1 or Scenario 2) is about five years younger than the average entry age of all City employees included in the June 30, 2016 valuations for LACERS (approximately age 34). Generally, under the Entry Age actuarial cost method used by LACERS, a lower age at entry leads to a lower Normal Cost calculation.

- For the June 30, 2016 valuations, the Normal Cost rates were calculated based on the combined demographics of all City employees (including the Airport Peace Officers included in this study). However, for purposes of this study, we have established a baseline for cost comparison by calculating the separate Tier 1 and Tier 3 Normal Cost rates based only on the demographics of the Airport Peace Officers under the current LACERS benefit formulas, and we have aggregated those results. As shown in subsections C-1 and C-2 (pages 16 and 17), the Normal Cost rates calculated based on the demographics for Airport Peace Officers only are lower than the rates previously determined for all City employees, due to the lower average entry ages.

- As of the June 30, 2016 valuation date, Airport Peace Officers were enrolled in LACERS' Tier 1 plan if hired before July 1, 2013, or if they became a member of Tier 2 between July 1, 2013 and February 21, 2016 and were subsequently transferred to Tier 1 effective February 21, 2016 (pursuant to Ordinance No. 184134). For purposes of this study, we have included the normal costs associated with transferring all the current Airport Peace Officers from <u>Tier 1</u> to the APO tier under the enhanced benefits, and we

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[6] *As we have used the expected retirement assumptions used in this study under the enhanced benefit formula, we also tested the difference in the number of retirements anticipated under the enhanced and the non-enhanced benefit formulas over the 18-month period used in the projection. We do not deem the difference of 1 to 2 in expected retirements to be very significant.*

have reported separately the costs associated with treating all Tier 3 Peace Officers as Tier 1 employees. As shown on page 16, the employer Normal Cost rate increase associated with having all affected Peace Officers in Tier 1 is about 0.03% of pay (19.05% - 19.02%)[7], under Scenario 1.

AAL and UAAL

- In addition to the changes in the Normal Costs discussed above, we have also determined the increase in the actuarial accrued liability (AAL).[8] In order to fund the increase in the AAL for both of the Scenarios, we have presented the City with two illustrations. In the first illustration, we amortize the increase in the AAL over a 15-year period, which is the current amortization period used by LACERS for plan changes, expressed as a percentage of total Airport Peace Officer pay after accounting for APO members expected to exit the workforce according to the actuarial assumptions over the next 18 months. In the second illustration, we amortize the increase in the AAL over a 15-year period, expressed as a percentage of total LACERS pay for all members in all City departments. These additional AAL costs would need to be paid along with the additional Normal Costs discussed above.

- Increases in the UAAL rates due to changes in benefit provisions and/or actuarial assumptions are discussed in Section 2 of this report. When we calculate the increase in UAAL to reflect the benefit improvements offered under the proposed APO tier, we have separately identified (1) the contributions required to be made by the Department of Airports (which equals the difference between the Tier 1 and Tier 3 Normal Cost rates adjusted with interest at the assumed earnings rate of 7.50%) to upgrade the Tier 3 benefit to the Tier 1 benefit for the members expected to continue in employment as APO and elect to remain at LACERS on January 7, 2018 and (2) the lump sum amount expected to be paid by January 7, 2018 of $5,700 per employee for the Tier 1 members (including those that will convert to Tier 1 from Tier 3) expected to continue in employment as APO and elect to remain at LACERS on January 7, 2018. Item (2), regarding the $5,700 lump sum contribution per remaining employee, has been deducted from the UAAL contribution rate calculation. Item (1), regarding the transfer of Tier 3 APO members to Tier 1, does not need to be deducted from the UAAL contribution rate calculation, since our starting point for cost comparison assumes that all APO members are already in the Tier 1 plan. We have separately identified the cost of that Tier 3 to Tier 1 transfer at the end of subsection D-1, under Scenario 1. Note that there is no additional cost for Item (1) under Scenario 2, since there were no Tier 3 APO members under that Scenario.

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[7] *In addition to the changes in Normal Cost rates discussed above, classifying future new employees hired as Airport Peace Officers as Tier 1 members means the potential Tier 3 Normal Cost savings, as current Airport Peace Officers in Tier 1 leave and are replaced by future Airport Peace Officers in Tier 3, will not materialize.*

[8] *For active members, the actuarial accrued liability is the accumulated value of the past Normal Costs, assuming that the same Normal Cost rate (expressed as a level percentage of payroll) has always been contributed from the member's age at entry into LACERS through the date of this valuation as of June 30, 2016.*

Health Plan Costs

- As noted in the Benefit Provisions subsection of Section 1, there are no proposed changes in health plan benefits. However, as observed in this Section 2, we have calculated changes in the Normal Cost rates under both Scenarios, due to the changes in the service retirement rates assumed for this study.

Summary of Total Additional Costs

- Details on the additional costs under Scenarios 1 and 2, separately and combined for the retirement and the health plans, are provided in Section 2, subsections D-1 and D-2, respectively. Below we have provided a summary of the results for both plans combined, which are also shown in those subsections.

- It is beyond the scope of this study and, hence, we have excluded from our analysis the cost associated with providing LAFPP Tier 6 benefits for those APO members who elect to transfer out of LACERS. For a discussion of that cost, please refer to our letter dated July 7, 2016.

Additional Costs

Contribution rates are payable at the beginning of the year; expressed as a % of payroll

	Scenario 1 – All APO Members		Scenario 2 – Only APO Members with 5 or more Years of Service	
	Normal Retirement Factor of 2.30% with Death and Disability Benefits Identical to LAFPP Tier 6		Normal Retirement Factor of 2.30% with Death and Disability Benefits Identical to LAFPP Tier 6	
	% of Payroll	Annual Amount(1)	% of Payroll	Annual Amount(1)
Retirement and Health Plans Combined				
1. Increase in Total Normal Cost	2.23% (2)		2.21%	
2. Expected Employee Contributions	0.00%		0.00%	
3. Increase in Employer Normal Cost: (1) + (2)	2.23%	$1,032,229	2.21%	$929,099
4. (a) Actuarial Accrued Liability	$22,884,345		$22,669,277	
(b) Reduction in AAL due to Exiting Workforce	$3,779,656		$3,786,659	
(c) Mandatory $5,700 Contribution Per Remaining Employee(3)	$2,470,837		$2,128,863	
(d) Net AAL (4a) - (4b) - (4c)	$16,633,852		$16,753,755	
5. (a) 15-Yr Amortization of AAL / APO Pay(4)	2.99%	$1,384,020	3.32%	$1,395,751
(b) 15-Yr Amortization of AAL / Total Pay(4)	0.07%	$1,384,020	0.07%	$1,395,751

(1) Based on projected fiscal year 2016/2017 payroll after accounting for APO members expected to exit the workforce according to the actuarial assumptions over the next 18 months ($46,288,290 Scenario 1; $42,040,696 Scenario 2), except for item 5(b) which is based on payroll for all LACERS members in all City departments ($1,968,702,630).

(2) Excludes the cost of classifying current Tier 3 Airport Peace Officers as Tier 1.

(3) Discounted to June 30, 2016.

(4) We have presented two illustrations for paying off the additional AAL associated with these Scenarios.

Note that under Scenario 1, there is an additional cost to the costs shown above associated with upgrading the Tier 3 benefit to the Tier 1 benefit for the members expected to continue in employment as APO and elect to remain at LACERS on January 7, 2018. We have estimated the lump sum contribution amount for that upgrade to be about $14,600 as of January 7, 2018.

Scenarios 1 and 2

- The increase in the Normal Cost rate under Scenarios 1 and 2 is due to (a) the increase in the benefit level for the retirement plan, and (b) the changes in the assumed service retirement rates.

- As illustrated above, there in an increase in the AAL under these Scenarios. The increase in the AAL is due (a) the changes in the assumed service retirement rates, and (b) the assumption that the higher Normal Cost rates calculated under these Scenarios have been charged from the dates of entry into LACERS for the members included in the study to the date of this valuation, rather than the actual Normal Cost rates that have been charged over that period based on the current Tier 1 and Tier 3 plans[9].

- As we have mentioned throughout this report, the contribution rates provided herein assume that all contributions will be paid at the beginning of the year. If it is desired to consider results based on different timing for payment of contributions, such as July 15 or at the end of each pay period (similar to the timing scenarios utilized in the LACERS valuations), then the contribution rates provided herein will have to be adjusted. We will provide the adjustment factors if requested to do so by LACERS.

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[9] *This assumption is an intrinsic feature of LACERS' Entry Age Cost Method and the setting of the Normal Cost rates as a level percentage of payroll.*

B. Demographics as of June 30, 2016

	Tier 1	Tier 3	Tiers 1 and 3 Combined
Active Members in Valuation*:			
Scenario 1: All Airport Peace Officers			
Number of employees	524	6	530
Average entry age	28.9	31.7	29.0
Average employment service	14.5	0.1	14.3
Average attained age	43.4	31.8	43.3
Projected total compensation for FY 2016/2017, assuming each employee stays in employment during the entire fiscal year	$50,441,047	$313,657	$50,754,704
Projected average compensation	$96,262	$52,276	$95,764
Projected total compensation for FY 2016/2017, after accounting for APO members expected to exit the workforce according to the actuarial assumptions over the next 18 months**			$46,288,290
Scenario 2: Only Airport Peace Officers with 5 or more Years of Service			
Number of employees	453	0	453
Average entry age	28.7	N/A	28.7
Average employment service	16.5	N/A	16.5
Average attained age	45.2	N/A	45.2
Projected total compensation for FY 2016/2017, assuming each employee stays in employment during the entire fiscal year	$45,746,133	N/A	$45,746,133
Projected average compensation	$100,985	N/A	$100,985
Projected total compensation for FY 2016/2017, after accounting for APO members expected to exit the workforce according to the actuarial assumptions over the next 18 months**			$42,040,696

* *The data used for this study is from the June 30, 2016 valuation data, and it includes data for three non-represented members plus members hired under the following Bargaining Units only: 30 (L. A. Airport Peace Officers), 39 (L. A. Airport Supervisory Peace Officers), and 40 (Airport Peace Command Officers).*

** *Based on the actuarial assumptions utilized for the enhanced benefits.*

C-1. Current Normal Cost Contribution Rates and Actuarial Accrued Liability as of June 30, 2016 – All APO Members (Scenario 1)

Contribution rates payable at the beginning of the year, expressed as a % of payroll

	Paid by the City for all City Departments		Based on Demographic Profile of Airport Peace Officers Only			Re-calculated as if all Airport Peace Officers are Enrolled in Tier 1
	Tier 1	Tier 3	Tier 1	Tier 3	Combined	Tier 1
Retirement Plan						
1. Total Normal Cost	17.35%	14.45%	16.06%	13.11%	16.05%	16.07%
2. Expected Employee Contributions[1]	-10.61%	-10.60%	-10.60%	-10.60%	-10.60%	-10.60%
3. Employer Normal Cost: (1) + (2)	6.74%	3.85%	5.46%	2.51%	5.45%	5.47%
4. Actuarial Accrued Liability						$189,041,953
Health Plan						
1. Total Normal Cost	3.47%	3.81%	2.96%	4.57%	2.97%	2.98%
2. Expected Employee Contributions	-0.00%	-0.00%	-0.00%	-0.00%	-0.00%	-0.00%
3. Employer Normal Cost: (1) + (2)	3.47%	3.81%	2.96%	4.57%	2.97%	2.98%
4. Actuarial Accrued Liability						$32,908,389
Total						
1. Total Normal Cost	20.82%	18.26%	19.02%	17.68%	19.02%	19.05%
2. Expected Employee Contributions	-10.61%	-10.60%	-10.60%	-10.60%	-10.60%	-10.60%
3. Employer Normal Cost: (1) + (2)	10.21%	7.66%	8.42%	7.08%	8.42%	8.45%
4. Actuarial Accrued Liability						$221,950,342

(1) Discounted to beginning of year. The average employee rates for contributions made at the end of each pay period are actually 11.01% (Tier 1, All City Departments), 11.00% (Tier 3, All City Departments), 11.00% (Tier 1, Airport Peace Officers Only), 11.00% (Tier 3, Airport Peace Officers Only), and 11.00% (Combined, Airport Peace Officers Only).

As shown above, classifying current Tier 3 Airport Peace Officers as Tier 1 members has increased the total (retirement and health plan) employer and employee Normal Cost rate by 0.03% of pay (i.e., from 19.02% to 19.05%). In addition, future new employees hired as Airport Peace Officers will be enrolled in the LAFPP Tier 6 plan instead of the LACERS Tier 1 plan. It is also beyond the scope of this study and, hence, we have excluded from our analysis the cost associated with providing LAFPP Tier 6 benefits to those future new employees. For a discussion of that cost, please refer to our letter dated July 7, 2016.

C-2. Current Normal Cost Contribution Rates and Actuarial Accrued Liability as of June 30, 2016 – Only APO Members with 5 or more Years of Service (Scenario 2)

Contribution rates payable at the beginning of the year, expressed as a % of payroll

	Paid by the City for all City Departments		Based on Demographic Profile of Airport Peace Officers Only			Re-calculated as if all Airport Peace Officers are Enrolled in Tier 1
	Tier 1	**Tier 3**	**Tier 1**	**Tier 3**	**Combined**	**Tier 1**
Retirement Plan						
1. Total Normal Cost	17.35%	14.45%	16.01%	N/A	16.01%	16.01%
2. Expected Employee Contributions⁽¹⁾	-10.61%	-10.60%	-10.60%	N/A	-10.60%	-10.60%
3. Employer Normal Cost: (1) + (2)	6.74%	3.85%	5.41%	N/A	5.41%	5.41%
4. Actuarial Accrued Liability						$187,533,717
Health Plan						
1. Total Normal Cost	3.47%	3.81%	2.84%	N/A	2.84%	2.84%
2. Expected Employee Contributions	-0.00%	-0.00%	-0.00%	N/A	-0.00%	-0.00%
3. Employer Normal Cost: (1) + (2)	3.47%	3.81%	2.84%	N/A	2.84%	2.84%
4. Actuarial Accrued Liability						$32,589,257
Total						
1. Total Normal Cost	20.82%	18.26%	18.85%	N/A	18.85%	18.85%
2. Expected Employee Contributions	-10.61%	-10.60%	-10.60%	N/A	-10.60%	-10.60%
3. Employer Normal Cost: (1) + (2)	10.21%	7.66%	8.25%	N/A	8.25%	8.25%
4. Actuarial Accrued Liability						$220,122,974

(1) Discounted to beginning of year. The average employee rates for contributions made at the end of each pay period are actually 11.01% (Tier 1, All City Departments), 11.00% (Tier 3, All City Departments), 11.00% (Tier 1, Airport Peace Officers Only), and 11.00% (Combined, Airport Peace Officers Only).

D-1. Comparison of Costs – All APO Members (Scenario 1)

Contribution rates payable at the beginning of the year, expressed as a % of payroll

	Current Benefit Formula	New Benefit Formula	Difference	
	% of Payroll	% of Payroll	% of Payroll	Annual Amount(1)
Retirement Plan				
1. Total Normal Cost	16.07%	18.22%	2.15%	
2. Expected Employee Contributions(2)	-10.60%	-10.60%	-0.00%	
3. Employer Normal Cost: (1) + (2)	5.47%	7.62%	2.15%	$995,198
4. (a) Actuarial Accrued Liability (AAL)	$189,041,953	$210,981,739	$21,939,786	
(b) Reduction in AAL due to Exiting Workforce			$3,582,333	
(c) Net AAL (4a) - (4b)			$18,357,453	
5. (a) 15-Yr Amortization of AAL / APO Pay(3)			3.30%	$1,527,514
(b) 15-Yr Amortization of AAL / Total Pay(3)			0.08%	$1,527,514
Health Plan				
1. Total Normal Cost	2.98%	3.06%	0.08%	
2. Expected Employee Contributions	-0.00%	-0.00%	-0.00%	
3. Employer Normal Cost: (1) + (2)	2.98%	3.06%	0.08%	$37,031
4. (a) Actuarial Accrued Liability	$32,908,389	$33,852,948	$944,559	
(b) Reduction in AAL due to Exiting Workforce			$197,323	
(c) Net AAL (4a) - (4b)			$747,236	
5. (a) 15-Yr Amortization of AAL / APO Pay(3)			0.13%	$60,175
(b) 15-Yr Amortization of AAL / Total Pay(3)			0.00% (4)	$60,175
Total				
1. Total Normal Cost	19.05%	21.28%	2.23% (5)	
2. Expected Employee Contributions	-10.60%	-10.60%	-0.00%	
3. Employer Normal Cost: (1) + (2)	8.45%	10.68%	2.23%	$1,032,229
4. (a) Actuarial Accrued Liability	$221,950,342	$244,834,687	$22,884,345	
(b) Reduction in AAL due to Exiting Workforce			$3,779,656	
(c) Mandatory $5,700 Contribution Per Remaining Employee			$2,470,837 (6)	
(d) Net AAL (4a) - (4b) - (4c)			$16,633,852	
5. (a) 15-Yr Amortization of AAL / APO Pay(3)			2.99%	$1,384,020
(b) 15-Yr Amortization of AAL / Total Pay(3)			0.07%	$1,384,020

(1) Based on projected fiscal year 2016/2017 payroll of $46,288,290 after accounting for APO members expected to exit the workforce according to the actuarial assumptions over the next 18 months, except for item 5(b) which is based on payroll for all LACERS members in all City departments ($1,968,702,630).

(2) The average employee rate for contributions made at the end of each pay period is actually 11.00% for both the current and new formulas.

(3) We have presented two illustrations for paying off the additional AAL associated with this Scenario.

(4) Less than 0.01%.

(5) Excludes the cost of classifying current Tier 3 Airport Peace Officers as Tier 1 that was noted on the bottom of page 15 (i.e., 0.03% of pay) as that cost is already included under the current benefit formula.

(6) Discounted to June 30, 2016. The value of this amount as of January 7, 2018 is approximately $2,754,000.

D-1. Comparison of Costs – All APO Members (Scenario 1; continued)

In addition to the employer contribution rates provided above, it is anticipated that the employer would continue to contribute the same UAAL rates of 15.44% and 1.43% of total payroll for the pension and health plans[10], respectively, that were determined in the June 30, 2016 valuation. This is because the UAAL rates were determined as a level percent of pay including payrolls for all current members plus new entrants who entered LACERS after June 30, 2016.

As discussed in Section 1, we have also estimated the contributions required to be made by the Department of Airports to upgrade the Tier 3 benefit to the Tier 1 benefit for the members expected to continue in employment as APO and elect to remain at LACERS on January 7, 2018. This lump sum contribution amount equals the difference between the Tier 1 and Tier 3 Normal Cost rates, adjusted with interest at the assumed earnings rate of 7.50%. Based on the data provided for the June 30, 2016 valuation for the 6 active Tier 3 APO members as of that date, we have estimated the lump sum contribution amount to be about $14,600. This amount can be broken down as $15,600 for the Retirement Plan and negative $1,000 for the Health Plan. The Health Plan figure is actually a negative amount since the Tier 3 Health Plan Normal Cost rates have been higher than the Tier 1 Normal Cost rates over the period from February 21, 2016 (the inception date of Tier 3) through January 7, 2018.

Finally, we also discussed in Section 1 that we would provide in this subsection the lump sum contribution amount on January 7, 2018 representing a total payment of $5,700 from every Airport Peace Officer Member who elected to remain in LACERS as of that date. Based on the actuarial assumptions used in this study, we have estimated that a lump sum amount of about $2,754,000 would be due to LACERS as of January 7, 2018. In the chart shown on the previous page, we have discounted this amount with interest to the June 30, 2016 valuation date in order to present costs on that page all as of the June 30, 2016 valuation date.

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[10] *Assumes contributions made at the beginning of the year.*

D-2. Comparison of Costs – Only APO Members with 5 or more Years of Service (Scenario 2)

Contribution rates payable at the beginning of the year, expressed as a % of payroll

	Current Benefit Formula	New Benefit Formula	Difference	
	% of Payroll	% of Payroll	% of Payroll	Annual Amount(1)
Retirement Plan				
1. Total Normal Cost	16.01%	18.14%	2.13%	
2. Expected Employee Contributions(2)	-10.60%	-10.60%	0.00%	
3. Employer Normal Cost: (1) + (2)	5.41%	7.54%	2.13%	$895,467
4. (a) Actuarial Accrued Liability (AAL)	$187,533,717	$209,271,784	$21,738,067	
(b) Reduction in AAL due to Exiting Workforce			$3,587,557	
(c) Net AAL (4a) - (4b)			$18,150,510	
5. (a) 15-Yr Amortization of AAL / APO Pay(3)			3.59%	$1,509,261
(b) 15-Yr Amortization of AAL / Total Pay(3)			0.08%	$1,509,261
Health Plan				
1. Total Normal Cost	2.84%	2.92%	0.08%	
2. Expected Employee Contributions	0.00%	0.00%	0.00%	
3. Employer Normal Cost: (1) + (2)	2.84%	2.92%	0.08%	$33,633
4. (a) Actuarial Accrued Liability	$32,589,257	$33,520,467	$931,210	
(b) Reduction in AAL due to Exiting Workforce			$199,102	
(c) Net AAL (4a) - (4b)			$732,108	
5. (a) 15-Yr Amortization of AAL / APO Pay(3)			0.14%	$58,857
(b) 15-Yr Amortization of AAL / Total Pay(3)			0.00% (4)	$58,857
Total				
1. Total Normal Cost	18.85%	21.06%	2.21%	
2. Expected Employee Contributions	-10.60%	-10.60%	0.00%	
3. Employer Normal Cost: (1) + (2)	8.25%	10.46%	2.21%	$929,099
4. (a) Actuarial Accrued Liability	$220,122,974	$242,792,251	$22,669,277	
(b) Reduction in AAL due to Exiting Workforce			$3,786,659	
(c) Mandatory $5,700 Contribution Per Remaining Employee			$2,128,863 (5)	
(d) Net AAL (4a) - (4b) - (4c)			$16,753,755	
5. (a) 15-Yr Amortization of AAL / APO Pay(3)			3.32%	$1,395,751
(b) 15-Yr Amortization of AAL / Total Pay(3)			0.07%	$1,395,751

(1) Based on projected fiscal year 2016/2017 payroll of $42,040,696 after accounting for APO members expected to exit the workforce according to the actuarial assumptions over the next 18 months, except for item 5(b) which is based on payroll for all LACERS members in all City departments ($1,968,702,630).

(2) The average employee rate for contributions made at the end of each pay period is actually 11.00% for both the current and new formulas.

(3) We have presented two illustrations for paying off the additional AAL associated with this Scenario.

(4) Less than 0.01%.

(5) Discounted to June 30, 2016. The value of this amount as of January 7, 2018 is approximately $2,373,000.

D-2. Comparison of Costs – Only APO Members with 5 or more Years of Service (Scenario 2; continued)

In addition to the employer contribution rates provided above, it is anticipated that the employer would continue to contribute the same UAAL rates of 15.44% and 1.43% of <u>total</u> payroll for the pension and health plans[11], respectively, that were determined in the June 30, 2016 valuation. This is because the UAAL rates were determined as a level percent of pay including payrolls for all current members plus new entrants who entered LACERS after June 30, 2016.

We discussed in Section 1 that we would provide in this subsection the lump sum contribution amount on January 7, 2018 representing a total payment of $5,700 from every Airport Peace Officer Member who elected to remain in LACERS as of that date. Based on the actuarial assumptions used in this study, we have estimated that a lump sum amount of about $2,373,000 would be due to LACERS as of January 7, 2018. In the chart shown on the previous page, we have discounted this amount with interest to the June 30, 2016 valuation date in order to present costs on that page all as of the June 30, 2016 valuation date.

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[11] *Assumes contributions made at the <u>beginning</u> of the year.*

EXHIBIT I

Actuarial Assumptions for Current and Proposed Benefits

Actuarial Assumptions:

The service retirement assumptions used in determining the results under the current and the proposed tiers are shown on the following page. We have also shown the service connected disability, non-service connected disability, and pre-retirement death benefit assumptions under the APO tier.

Except as noted in this Exhibit, all other actuarial assumptions are the same as those adopted by the Retirement Board for use in the June 30, 2016 actuarial valuation.

Retirement Rates:

	Rate (%)			
	Current Tier 1		APO Tier	
Age	Non-55/30	55/30	Non-55/30	55/30
50	6.0	0.0	7.0	0.0
51	3.0	0.0	4.0	0.0
52	3.0	0.0	4.0	0.0
53	3.0	0.0	4.0	0.0
54	16.0	0.0	17.0	0.0
55	6.0	20.0	7.0	21.0
56	6.0	14.0	7.0	15.0
57	6.0	14.0	7.0	15.0
58	6.0	14.0	7.0	15.0
59	6.0	14.0	7.0	15.0
60	6.0	14.0	7.0	15.0
61	6.0	14.0	7.0	15.0
62	7.0	15.0	8.0	16.0
63	7.0	15.0	8.0	16.0
64	7.0	16.0	8.0	17.0
65	12.0	17.0	13.0	18.0
66	12.0	17.0	13.0	18.0
67	12.0	17.0	13.0	18.0
68	12.0	17.0	13.0	18.0
69	12.0	17.0	13.0	18.0
70	100.0	100.0	100.0	100.0

Service Connected Disability Benefits:

APO Tier:

Years of Service	Benefit
Less than 20	55% of Final Average Compensation
20 – 30	65% of Final Average Compensation
More than 30	75% of Final Average Compensation

Breakdown of Types of Disability Retirement: 90% of disabilities are assumed to be service connected. The other 10% are assumed to be non-service connected.

Non-Service Connected Disability Benefits:

APO Tier: 40% of Final Average Compensation.

Pre-retirement Death Benefits:

APO Tier: 100% of pre-retirement death benefits are assumed to be service connected.

EXHIBIT II
Plan Summary for Current and Proposed Benefits

Plan Provisions: In the following table, we have provided a high-level comparison of the pertinent benefits for the proposed APO tier. Unless included in the table, all the other plan provisions are assumed to be the same as those used in the June 30, 2016 valuation for Tier 1 members.

Plan Design	**Current Tier 1**	**APO Tier**
Transfers	Not Applicable	Current members can elect to remain at LACERS under the APO tier of benefits or purchase their past LACERS service and transfer to LAFPP Tier 6.
Retirement Formula (Normal Retirement Age)	Retirement Factor * Final Average Compensation * Service Credit	Retirement Factor * Final Average Compensation * Service Credit
Retirement Factor	2.16%	2.30%
Final Average (Monthly) Compensation	Equivalent of monthly average salary of highest continuous 12 months (one year); includes base salary plus regularly assigned bonuses or premium pay.	Equivalent of monthly average salary of highest continuous 12 months (one year); includes base salary plus regularly assigned bonuses or premium pay.
Maximum Retirement Allowance	100% of Final Average Compensation	100% of Final Average Compensation
Normal Retirement	<u>Age and Service Requirement</u> Age 55 with 30 years of City service; or Age 60 with 10 years of continuous City service; or Age 70	<u>Age and Service Requirement</u> Age 55 with 30 years of City service; or Age 60 with 10 years of continuous City service; or Age 70
Early Retirement	<u>Age and Service Requirement</u> Age 55 with 10 years of continuous City service; or Any age with 30 years of City service	<u>Age and Service Requirement</u> Age 55 with 10 years of continuous City service; or Any age with 30 years of City service
Early Retirement Reduction Factor	3% per year of service before age 55; 1.5% per year of service after age 55	3% per year of service before age 55; 1.5% per year of service after age 55
Sample Early Retirement Factors	Age 45: 0.6250 Age 55: 0.9250 Age 50: 0.7750 Age 60: 1.0000	Age 45: 0.6250 Age 55: 0.9250 Age 50: 0.7750 Age 60: 1.0000
Vesting	5 years	5 years

Plan Design	**Current Tier 1**	**APO Tier**
Deferred Vested Retirement	Age and Service Requirement: Age 55 with 30 years of service; or Age 60 with 5 years of continuous City service and 10 years have elapsed from first date of membership; or Age 70 with 5 years of continuous City service	Age and Service Requirement: Age 55 with 30 years of service; or Age 60 with 5 years of continuous City service and 10 years have elapsed from first date of membership; or Age 70 with 5 years of continuous City service
	Benefit: Same as for Normal Retirement (or refund of contributions and accumulated interest)	Benefit: Same as for Normal Retirement (or refund of contributions and accumulated interest)
	Age and Service Requirement: Age 55 with 5 years of continuous City service and 10 years have elapsed from first date of membership; or Age 55 with 10 years of continuous City service	Age and Service Requirement: Age 55 with 5 years of continuous City service and 10 years have elapsed from first date of membership; or Age 55 with 10 years of continuous City service
	Benefit: Same as for Early Retirement (or refund of contributions and accumulated interest)	Benefit: Same as for Early Retirement (or refund of contributions and accumulated interest)
Service Connected Disability	There is no distinction between service connected and non-service connected disability. Age and Service Requirement: 5 years of continuous service Benefit: Greater of: 1/3 of Final Average Compensation, or 1/70 (1.43%) of Final Average Compensation for each year of service	Disability caused by the discharge of duties. Age and Service Requirement: No age or service requirements Benefit: 30% to 90% of Final Average Compensation depending on severity of disability with a minimum of 2% of Final Average Compensation per year of Service Credit
Non-Service Connected Disability	See Service Connected Disability	Disability not caused by the discharge of duties. Age and Service Requirement: 5 years of continuous service Benefit: 30% to 50% of Final Average Compensation depending on severity of disability

Plan Design	**Current Tier 1**	**APO Tier**
Service Connected Death or Death after Service Connected Disability	Age and Service Requirement: For beneficiaries of active members, benefits are based upon member's eligibility for retirement on the date of death and whether or not the member was enrolled in the Family Death Benefit Plan (FDBP). If service connected death, the eligible surviving spouse is eligible for a disability survivorship even if the member did not have five years of continuous service. Benefit: (1) Service survivorship (if eligible); or (2) Vested service survivorship on the date the member would have been age 55 and contributions on deposit for 10 years from date of entry; or (3) Disability survivorship and FDBP (if eligible); or (4) Refund of contributions and limited monthly pension (i.e., for every year of service, two monthly payments of ½ of the Final Average Compensation, not to exceed 12 monthly payments for 6 or more years of service) and FDBP (if eligible)	Age and Service Requirement: None (survivors are not eligible for FDBP benefits if the member was eligible for service retirement or deferred retirement benefits at the time of his/her death) Benefit: *Service Connected Death* 80% of member's Final Average Compensation *Death after Service Connected Disability* If the death occurs within three years of the member's effective date of pension, then the eligible survivor shall receive 80% of the Final Average Compensation. Otherwise, a pension equal to 80% of the pension received by the deceased member immediately preceding the date of death.
Non-Service Connected Death w/ less than 5 Years of Service	Age and Service Requirement: None Benefit: Return of contributions plus accrued interest, and, if member had at least one year of service, a limited monthly pension (i.e., for every year of service, two monthly payments of ½ of the Final Average Compensation, not to exceed 12 monthly payments for 6 or more years of service)	Age and Service Requirement: None Benefit: Return of contributions plus accrued interest, and, if member had at least one year of service, a limited monthly pension (i.e., for every year of service, two monthly payments of ½ of the Final Average Compensation, not to exceed 12 monthly payments for 6 or more years of service)
Non-Service Connected Death w/at least 5 Years of Service	Age and Service Requirement: Any age with 5 years of service Benefit: See service connected death benefit above (note: the exception does not apply to non-service connected deaths)	Age and Service Requirement: Any age with 5 years of service Benefit: 50% of member's Final Average Compensation
Death after Non-service Connected Disability or Service Retirement	50% of retired member's pension at no cost to member. Optional continuance up to 100% of retired member's pension at a cost to member.	Pension equal to 70% of the pension received by the deceased member
Burial Allowance	$2,500 for deceased retired member's beneficiary	$2,500 for deceased retired member's beneficiary

Plan Design	Current Tier 1	APO Tier
Cost of Living Benefit	Based on changes to Los Angeles area Consumer Price Index, to a maximum of 3% per year; excess banked	Based on changes to Los Angeles area Consumer Price Index, to a maximum of 3% per year; excess banked
Employee Contribution Rate	11% (or 11.5% for certain members) until June 30, 2026 or until the ERIP Cost Obligation is fully paid, then 10% (or 10.5% for members currently paying 11.5%). Members with no eligible spouse or domestic partner at retirement can request a refund of the survivor portion of the member contributions (i.e., generally based on a contribution rate of 0.5% of pay).	11% until June 30, 2026 or until the ERIP Cost Obligation is fully paid, then 10%. In addition, APO employees who remain at LACERS would be responsible for a mandatory lump sum additional contribution of $5,700 to be paid before January 8, 2019 (or prior to their retirement date, if earlier) in order to receive the APO tier enhanced benefits. Members with no eligible spouse or domestic partner at retirement can request a refund of the survivor portion of the member contributions (i.e., generally based on a contribution rate of 0.5% of pay).
Health Plan Benefits	Current Tier 1 benefits	Same as for LACERS Tier 1 members

Notes: (1) The cost of service credit purchases (such as back contributions, redeposit, public service buyback, and government service buyback) have not been reflected in the costs provided in this study, under any of the tier provisions listed above.

(2) Any costs associated with the Family Death Benefit Plan have not been included in this study.

Segal Consulting

Los Angeles City Employees' Retirement System

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2017 in accordance with GASB Statement No. 45

This report has been prepared at the request of the Board of Administration to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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November 7, 2017

Board of Administration
Los Angeles City Employees' Retirement System
202 W. 1st Street, Suite 500
Los Angeles, CA 90012-4401

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2017 for funding and financial reporting under Governmental Accounting Standards Board (GASB) Statement No. 45. The report summarizes the actuarial data used in the valuation, discloses the Net OPEB Obligation (NOO) as of June 30, 2017, establishes the Annual Required Contribution (ARC) for the Fiscal Year 2018/2019, and analyzes the preceding year's experience. This report was based on the census and unaudited financial data provided by the Retirement System and the terms of the Plan as summarized in Exhbit III. The actuarial calculations were completed under the supervision of Thomas Bergman, ASA, MAAA, Enrolled Actuary and Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions used in this valution and described in Exhibit II are reasonably related to the experience of and the expectations for the Plan. The actuarial projections are based on these assumptions and the plan of benefits as summarized in Exhibits II and III.

Sincerely,

Segal Consulting, a Member of the Segal Group, Inc.

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

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

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SECTION 1

VALUATION SUMMARY

SECTION 2

VALUATION RESULTS

SECTION 3

VALUATION DETAILS

SECTION 4

SUPPORTING INFORMATION

PURPOSE

This report presents the results of our actuarial valuation of the City of Los Angeles Employees' Retirement System OPEB plan as of June 30, 2017. The results are in accordance with the Governmental Accounting Standards, which prescribe an accrual methodology for accumulating the value of other postemployment benefits (OPEB) over participants' active working lifetimes.

HIGHLIGHTS OF THE VALUATION

- Pursuant to Ordinance No. 184853 ("the Ordinance"), which was adopted by the City Council on March 28, 2017, Airport Peace Officers (APO) at LACERS can elect to remain in LACERS or transfer to Los Angeles Fire and Police Pension Plan (LAFPP) Tier 6 prior to January 7, 2018. All new APO hired after that date would be enrolled in LAFPP Tier 6, rather than in LACERS. Under the Ordinance, APO members who elect to remain in LACERS would be a Tier 1 member and would be eligible for enhanced retirement benefits at LACERS. A description of the enhanced retirement benefits and the cost to provide those benefits were detailed in our APO report dated February 8, 2017. Subsequently, we issued a letter dated March 8, 2017 that provided LACERS with the adjusted fiscal year 2017/2018 employer contributions rates previously provided in our June 30, 2016 valuations for the retirement and health plans to reflect the enhanced Tier 1 benefits should some of the APO members decide to remain at LACERS on January 7, 2018. A copy of the letter and the APO report have been attached as an Appendix to the June 30, 2017 retirement valuation report.
- As noted in our March 8 letter, there was no change in the normal cost and UAAL contribution rates for the health plan because there was no change in the health benefit under the enhanced Tier 1 for APO. (That was the case even after we took into consideration that APO members would be expected to retire earlier and would receive health benefits for a longer period of time).
- In this valuation report, we note that both of the June 30, 2016 and 2017 employer contribution rates after reflecting the enhanced benefits for APO are the same as those before reflecting the enhanced benefits for the APO.
- The recommended contribution has increased from $96.9 million (4.92% of payroll) to $105.1 million (5.10% of payroll), assuming contributions are made by the City on July 15. The main reasons for this increase in contribution rate were a decrease in discount rate from 7.50% to 7.25%, offset somewhat by: lower than expected 2018 calendar year premiums and reduction of the ultimate trend rate assumption from 5.00% to 4.50%. A complete reconciliation of the change in the recommended contribution rate is provided in Exhibit H. Rates are shown separately for Tier 1 and Tier 3 in Chart 4.
- In the June 30, 2016 valuation, we used the minimum annual contributions calculated using a single 30-year amortization layer, as the UAAL contributions required by GASB and the Board's funding policy, because those annual contributions were greater than the net amount calculated using the various amortization layers. The same 30-year minimum contribution requirement has been triggered in the June 30, 2017

valuation. The Board's funding policy includes a provision that the amortization layers be combined and/or restarted when the calculated contribution rate is less than that required to comply with the amortization standards set forth by GASB. The results in this valuation would not have been affected if we had combined the bases in this report since the 30-year contribution requirement applied again in the June 30, 2017 valuation.

- The ratio of the actuarial value of assets to actuarial accrued liabilities increased from 80.49% to 81.12% On a market value of assets basis, the funded ratio increased from 76.42% to 81.14%. The unfunded actuarial accrued liability increased from $544.9 million to $567.3 million. A complete reconciliation of the System's unfunded actuarial accrued liability is provided in Chart 2.

- In prior valuations, based on directions provided by LACERS, we did not include in the report the projected excise tax that may be imposed by the Affordable Care Act (ACA) and related statutes. As ACA has not been repealed, the excise tax is scheduled to take effect in 2020 and is required to be disclosed under the new GASB for accounting purposes. We have been directed by LACERS to include the projected excise tax starting with this report. The inclusion of this excise tax reduced the funded ratio by about 1.1% and increased the contribution rate by 0.26% of pay.

- As of June 30, 2017, the Plan is subject to the new Governmental Accounting Standard No. 74 (GAS 74), which replaced GAS 43. The June 30, 2017 valuation under GASB 74 for financial reporting purposes has been provided as a separate report. As of June 30, 2018, the employer will be subject to the new Governmental Accounting Standard No. 75 (GAS 75), which replaces GAS 45. This is the last valuation to be used for GAS 45 financial reporting.

- The actuarial valuation report as of June 30, 2017 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.

- As in prior years, the employer contribution rates provided in this report have been developed assuming they will be paid by the City on any of the following dates:

  (1) The beginning of the fiscal year, or

  (2) On July 15, 2018, or

  (3) Throughout the year (i.e., the City will pay contributions at the end of every pay period).

The key valuation results for the current and prior years are shown.

SUMMARY OF VALUATION RESULTS

	June 30, 2017	June 30, 2016
Actuarial Accrued Liability (AAL)	$3,005,806,234	$2,793,688,955
Actuarial Value of Assets	2,438,458,132	2,248,753,480
Unfunded Actuarial Accrued Liability	567,348,102	544,935,475
Funded Ratio on Actuarial Value Basis	81.12%	80.49%
Market Value of Assets	2,438,861,850	2,134,877,117
Funded Ratio on Market Value Basis	81.14%	76.42%
Annual Required Contribution (ARC)(1)		
Normal cost (beginning of year)	$74,610,881	$68,385,120
Amortization of the unfunded actuarial accrued liability	30,230,115	28,182,806
Total Annual Required Contribution (beginning of year)	$104,840,996	$96,567,926
Total Annual Required Contribution (July 15)	$105,147,195	$96,859,359
Total Annual Required Contribution (end of each pay period)	$108,574,988	$100,123,757
Projected total payroll(2)	$2,062,316,129	$1,968,702,630
ARC as a percentage of pay (there is a 12-month delay until the rate is effective)(3)		
Beginning of year	5.08%	4.91%
July 15	5.10%	4.92%
End of each pay period	5.26%	5.09%
Total Participants	46,276	44,651
Annual OPEB Cost (AOC) for Coming Year		
Annual Required Contributions (July 15)	N/A(4)	$90,459,414
Interest on Net OPEB Obligations	N/A(4)	0
ARC Adjustments	N/A(4)	0
Total Annual OPEB Cost	N/A(4)	$90,459,414
AOC as a percent of pay	N/A(4)	4.74%

(1) *In future valuations, the ARC will be referred to as the Actuarially Determined Contribution (ADC).*

(2) *Reflects amount calculated in the pension valuation.*

(3) *A breakdown of the ARC by tier is provided in Chart 4.*

(4) *The AOC and NOO are not applicable to GASB 75, which replaces GASB 45 for fiscal years ended after June 30, 2017.*

IMPORTANT INFORMATION ABOUT ACTUARIAL VALUATIONS

An actuarial valuation is a budgeting tool with respect to the defining future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare an actuarial valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Retirement Office. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results and will have no impact on the actual cost of the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the Retirement Office.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of LACERS. Segal is not responsible for the use or misuse of its report, particularly by any other party.

- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If LACERS is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. LACERS should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of LACERS, it is not a fiduciary in its capacity as actuaries and consultants with respect to LACERS.

November 7, 2017

ACTUARIAL CERTIFICATION

This is to certify that Segal Consulting (Segal) has conducted an actuarial valuation of certain benefit obligations of Los Angeles City Employees' Retirement System's other postemployment benefit programs as of June 30, 2017, in accordance with generally accepted actuarial principles and practices. In particular, it is our understanding that the assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice (ASOPs). Actuarial valuations are performed annually for this other postemployment benefit program with the last valuation completed as of June 30, 2016. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of Governmental Accounting Standard Board (GASB) Statement No. 45 for the determination of the liability for postemployment benefits other than pensions.

The actuarial valuation is based on the plan of benefits verified by LACERS and on participant, premium, claims and financial data provided by LACERS. Segal did not audit LACERS' financial statements, but conducted an examination of all participant data for reasonableness and we concluded that it was reasonable and consistent with the prior year's data.

One of the general goals of an actuarial valuation is to establish contributions that fully fund the Retirement System's liabilities, and that, as a percentage of payroll, remain as level as possible for each generation of active members. Both the Normal Cost and the Actuarial Accrued Liability are determined under the Entry Age cost method.

The actuarial computations made are for funding plan benefits. Accordingly, additional determinations will be needed for other purposes, such as satisfying financial accounting requirements under Governmental Accounting Standards Board (GASB) Statements No. 74 and judging benefit security at termination of the plan.

Segal prepared all of the supporting schedules in the Actuarial Section of the Comprehensive Annual Financial Report (CAFR) and certain supporting schedules in the Financial Section, based on the results of the June 30, 2017 actuarial valuation. A listing of the supporting schedules Segal prepared for inclusion in the Financial Section as Required Supplementary Information prescribed by GASB, and in the Actuarial Section, is provided below:

<u>Financial Section</u>

1) Schedule of Net OPEB Liability*

2) Schedule of Changes in Net OPEB Liability and Related Ratios*

3) Schedule of Contribution History*

<u>Actuarial Section</u>

4) Summary of Significant Valuation Results

5) Active Member Valuation Data

6) Retirees and Beneficiaries Added to and Removed from Retiree Payroll

7) Solvency Test

8) Schedule of Funding Progress
9) Actuarial Analysis of Financial Experience
10) Actuarial Balance Sheet
11) Schedule of Changes in Net OPEB Liability and Related Ratios*
12) Projection of Pension Plan's Fiduciary Net Position for use in Calculation of Discount Rate as of June 30, 2017*

* Source: Segal's GASB Statement No. 74 valuation report as of June 30, 2017.

LACERS' staff prepared other trend data schedules in the Statistical Section based on information supplied in Segal's valuation report.

To the best of our knowledge, this report is complete and accurate and in our opinion presents the information necessary to comply with GASB Statement No. 45 with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, and/or the American Academy of Actuaries, as well as other professional actuarial organizations and collectively meet their "General Qualification Standards for Statements of Actuarial Opinions" to render the actuarial opinion contained herein.

Thomas Bergman
Thomas Bergman, ASA, MAAA, EA
Associate Actuary

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

The actuarial present value of total projected benefits uses the actuarial assumptions disclosed in Section 4 to calculate the value today of all benefits expected to be paid to current actives and retired plan members. The actuarial balance sheet shows the expected breakdown of how these benefits will be financed.

CHART 1

Actuarial Present Value of Total Projected Benefits (APB) and Actuarial Balance Sheet

	Actuarial Present Value of Total Projected Benefits (APB) June 30, 2017	Actuarial Present Value of Total Projected Benefits (APB) June 30, 2016
Participant Category		
Current retirees, beneficiaries, and dependents	$1,379,356,850	$1,275,604,225
Current active members	2,208,263,048	2,058,219,841
Terminated members entitled but not yet eligible	62,252,306	50,413,399
Total	$3,649,872,204	$3,384,237,465

	June 30, 2017	June 30, 2016
Actuarial Balance Sheet		
The actuarial balance sheet as of the valuation date is as follows:		
Assets		
1. Actuarial value of assets	$2,438,458,132	$2,248,753,480
2. Present value of future normal costs	644,065,970	590,548,510
3. Unfunded actuarial accrued liability	567,348,102	544,935,475
4. Present value of current and future assets	$3,649,872,204	$3,384,237,465
Liabilities		
5. Actuarial Present Value of total Projected Benefits	$3,649,872,204	$3,384,237,465

The actuarial accrued liability shows that portion of the APB (Chart 1) allocated to periods prior to the valuation date by the actuarial cost method. The chart below shows the portion of the liability for active and inactive members, and reconciles the unfunded actuarial accrued liability from last year to this year.

CHART 2

Actuarial Accrued Liability (AAL) and Unfunded AAL (UAAL)

	June 30, 2017	June 30, 2016
Participant Category		
Current retirees, beneficiaries, and dependents	$1,379,356,850	$1,275,604,225
Current active members	1,564,197,078	1,467,671,331
Terminated members entitled but not yet eligible	62,252,306	50,413,399
Total actuarial accrued liability	$3,005,806,234	$2,793,688,955
Unfunded Actuarial Accrued Liability		
Total actuarial accrued liability	$3,005,806,234	$2,793,688,955
Actuarial value of assets	2,438,458,132	2,248,753,480
Unfunded actuarial accrued liability	$567,348,102	$544,935,475

Development of Unfunded Actuarial Accrued Liability for the Year Ended June 30, 2017

1.	Unfunded actuarial accrued liability as of June 30, 2016	$544,935,475
2.	Employer normal cost as of June 30, 2016	68,385,120
3.	Expected employer contributions during 2016/2017 fiscal year	-96,567,926
4.	Interest	38,756,451
5.	Expected unfunded actuarial accrued liability as of June 30, 2017 (1 + 2 + 3 + 4)	$555,509,120
6.	Adjustment due to prior year's UAAL payment limited to reflect a 30-year effective amortization period	655,398
7.	Change due to investment gain	-40,687,726
8.	Change due to miscellaneous demographic gains and losses	5,599,147
9.	Change due to new economic assumptions	121,183,087
10.	Change due to updated 2017/2018 premium and subsidy levels	-22,045,062
11.	Change due to adopted future medical trend rates after 2017/2018	-87,671,160
12.	Change due to reflecting projected ACA excise tax on high-cost health plan under the old economic assumptions	34,805,298
13.	Unfunded actuarial accrued liability as of June 30, 2017 (5 + 6 + 7 + 8 + 9 + 10 + 11 + 12)	$567,348,102

Note that the expected employer contribution in (3) reflects a 30-year effective amortization of the UAAL. The adjustment to reflect the 30-year limit on the effective amortization period is not used in determining the experience gain and health assumptions change base for June 30, 2017 shown in Chart 3. In other words [(7) + (8) + (10) + (11) + (12)] above is equal to that new base.

The unfunded actuarial accrued liability may be amortized over periods of up to 30 years. Amortization payments may be calculated as level dollar amounts or as amounts designed to remain level as a percent of a growing payroll base. Los Angeles City Employees' Retirement System has elected to amortize the unfunded actuarial accrued liability using the following rules: The costs associated with the 2009 ERIP have been amortized over 15 years beginning with the June 30, 2009 valuation date. The unfunded actuarial accrued liability as of June 30, 2012 is amortized over a fixed period of 30 years beginning July 1, 2012. Assumption changes resulting from the triennial experience study will be amortized over 20 years. Health trend and premium assumption changes, plan changes, and gains and losses will be amortized over 15 years.

The recommended contribution is set equal to the greater of the current funding policy amount or the minimum Annual Required Contribution (ARC) as determined by GASB Statement No. 45. In this report, the minimum ARC requirement for fiscal year 2017/2018 (due to the application of the GASB 30-year maximum effective amortization period) is greater than the current funding policy amount due to the 15-year amortization of the experience gain bases created as of June 30, 2015 and 2017.

CHART 3

Table of Amortization Bases

Type	Date Established	Initial Year	Initial Amount	Outstanding Balance	Annual Payment*	Years Remaining
Plan Amendment (2009 ERIP)	06/30/2009	15	$54,735,645	$40,137,585	$6,363,915	7
Combined Base**	06/30/2012	30	597,984,614	653,578,395	38,782,082	25
Experience Loss	06/30/2013	15	16,206,142	14,819,644	1,599,494	11
Change in Assumptions	06/30/2014	20	135,287,549	135,254,751	10,417,842	17
Experience Gain	06/30/2014	15	-101,972,860	-96,080,840	-9,664,868	12
Experience Gain	06/30/2015	15	-193,346,818	-186,863,578	-17,639,205	13
Plan Change	06/30/2015	15	17,466,894	16,881,198	1,593,520	13
Experience Gain	06/30/2016	15	-21,878,470	-21,562,637	-1,921,248	14
Change in Assumptions	06/30/2017	20	121,183,087	121,183,087	8,320,426	20
Experience Gain and Health Assumption Changes	06/30/2017	15	-109,999,503	-109,999,503	-9,297,706	15
Total				$567,348,102	$30,230,115***	

* *Level percentage of pay.*

** *On October 23, 2012, the Board elected to combine all amortization bases as of June 30, 2012, except for the base associated with the 2009 ERIP, which remains on its original schedule. In addition, the Board adopted an initial amortization period of 30 years for the combined bases as of June 30, 2012.*

*** *Reflects adjustment so that the equivalent single amortization payment is 30 years. Before the adjustment, the payment amount is $28,554,252.*

The Annual Required Contribution (ARC) is the amount calculated to determine the annual cost of the OPEB plan for accounting purposes on an accrual basis. The calculation consists of adding the Normal Cost of the plan to an amortization payment. Both are determined as of the start of the accounting period and adjusted as if the annual cost were to be contributed throughout the fiscal year or on July 15th.

CHART 4

Determination of Annual Required Contribution (ARC)

Tier 1 - Cost Element	Determined as of June 30, 2017		June 30, 2016	
Before/After Reflecting Enhanced Benefits for APO	**Amount**	**Percentage of Compensation**	**Amount**	**Percentage of Compensation**
1. Normal cost	$69,351,491	3.58%	$67,278,447	3.47%
2. Amortization of the unfunded actuarial accrued liability	28,392,522	1.47%	27,767,379	1.43%
3. Total Annual Required Contribution (beginning of year)	$97,744,013	5.05%	$95,045,826	4.90%
4. Projected Payroll[1]	$1,936,988,361		$1,939,683,049	
5. Adjustment for timing (July 15)	$285,472	0.01%	$286,839	0.01%
6. Total Annual Required Contribution (July 15)	$98,029,485	5.06%	$95,332,665	4.91%
7. Adjustment for timing (end of pay period)	$3,481,227	0.18%	$3,499,784	0.18%
8. Total Annual Required Contribution (end of pay period)	$101,225,240	5.23%	$98,545,610	5.08%
Increase due to Enhanced Benefits for APO[2]				
9. Employer normal cost, July 15		0.00%		0.00%
10. Unfunded actuarial accrued liability, July 15		0.00%		0.00%
11. Total recommended contribution, July 15:		0.00%		0.00%

(1) *Reflects amount calculated in the pension valuation.*

(2) *Reference: letter dated March 8, 2017 (copy attached as an Appendix to the retirement report).*

CHART 4 (continued)

Determination of Annual Required Contribution (ARC)

Tier 3 - Cost Element		Determined as of June 30, 2017		Determined as of June 30, 2016	
Before/After Reflecting Enhanced Benefits for APO		**Amount**	**Percentage of Compensation**	**Amount**	**Percentage of Compensation**
1.	Normal cost	$5,259,390	4.20%	$1,106,673	3.81%
2.	Amortization of the unfunded actuarial accrued liability	1,837,593	1.47%(2)(3)	415,427	1.43%
3.	Total Annual Required Contribution (beginning of year)	$7,096,983	5.67%	$1,522,100	5.24%
4.	Projected Payroll(1)	$125,327,768		$29,019,581	
5.	Adjustment for timing (July 15)	$20,727	0.01%	$4,594	0.02%
6.	Total Annual Required Contribution (July 15)	$7,117,710	5.68%	$1,526,694	5.26%
7.	Adjustment for timing (end of pay period)	$252,765	0.19%	$56,047	0.20%
8.	Total Annual Required Contribution (end of pay period)	$7,349,748	5.86%	$1,578,147	5.44%
	Increase due to Enhanced Benefits for APO(4)				
9.	Employer normal cost, July 15		0.00%		0.00%
10.	Unfunded actuarial accrued liability, July 15		0.00%		0.00%
11.	Total recommended contribution, July 15:		0.00%		0.00%

(1) *Reflects amount calculated in the pension valuation.*

(2) *In developing the UAAL contribution rate, we have combined the UAAL for Tier 1 and Tier 3 and amortized that total UAAL over the total payroll for Tier 1 and Tier 3.*

(3) *For purposes of Government Service Buybacks for Tier 3, the UAAL rate as of June 30, 2017 is -0.06% before reflecting enhanced benefits for APO, if paid at the beginning of the year. It is calculated by: (i) amortizing -$779,272 over separate layers (i.e., 15 years for new actuarial (gains)/losses and 20 years for new assumption changes), or a credit of $69,260, and (ii) dividing that credit over Tier 3 payroll (or $125,327,768). If paid on July 15, the UAAL rate remains at -0.06% before reflecting enhanced benefits for APO, even though the credit increases to $69,460. After reflecting enhanced benefits for APO, the UAAL rate for Government Service Buybacks for Tier 3 remains the same.*

(4) *Reference: letter dated March 8, 2017 (copy attached as an Appendix to the retirement report).*

CHART 4 (continued)

Determination of Annual Required Contribution (ARC)

Combined - Cost Element	Determined as of			
	June 30, 2017		June 30, 2016	
Before/After Reflecting Enhanced Benefits for APO	**Amount**	**Percentage of Compensation**	**Amount**	**Percentage of Compensation**
1. Normal cost	$74,610,881	3.61%	$68,385,120	3.48%
2. Amortization of the unfunded actuarial accrued liability	30,230,115	1.47%	28,182,806	1.43%
3. Total Annual Required Contribution (beginning of year)	$104,840,996.09	5.08%	$96,567,926	4.91%
4. Projected Payroll(1)	$2,062,316,129		$1,968,702,630	
5. Adjustment for timing (July 15)	$306,199	0.02%	$291,433	0.01%
6. Total Annual Required Contribution (July 15)	$105,147,195	5.10%	$96,859,359	4.92%
7. Adjustment for timing (end of pay period)	$3,733,992	0.18%	$3,555,831	0.18%
8. Total Annual Required Contribution (end of pay period)	$108,574,988	5.26%	$100,123,757	5.09%
Increase due to Enhanced Benefits for APO				
9. Employer normal cost, July 15		0.00%		0.00%
10. Unfunded actuarial accrued liability, July 15		0.00%		0.00%
11. Total recommended contribution, July 15:		0.00%		0.00%

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(1) *Reflects amount calculated in the pension valuation.*

The OPEB Cost (AOC) adjusts the ARC for any past differences between the ARC and contributions in relation to the ARC as tracked in the Net OPEB Obligation (NOO). The AOC is the cost of OPEB actually recognized as an expense for the Fiscal Year under GASB 45.

CHART 4 (continued)

Determination of Annual OPEB Cost (AOC)

	Determined as of			
Cost Element	June 30, 2017[1] (For 2018/2019 Fiscal Year)		June 30, 2016[1] (For 2017/2018 Fiscal Year)	
	Amount	Percentage of Compensation	Amount	Percentage of Compensation
1. Annual Required Contribution (July 15)	N/A	N/A	N/A	N/A
2. Interest on Beginning of Year Net OPEB Obligation (NOO)	N/A	N/A	N/A	N/A
3. ARC adjustment	N/A	N/A	N/A	N/A
4. Annual OPEB Cost (July 15)	N/A	N/A	N/A	N/A

[1] *The AOC and NOO are not applicable to GASB 75, which replaces GASB 45 for fiscal years ended after June 30, 2017. The AOC for fiscal year ended June 30, 2017 was determined as of June 30, 2015.*

For GASB 45 (employer reporting) purposes, the schedule of employer contributions compares actual contributions to the AOC.

CHART 5

Required Supplementary Information – Schedule of Employer Contributions

GASB 45

Fiscal Year Ended June 30	Annual OPEB Cost	Actual Contributions	Percentage Contributed
2012	$115,208,835	$115,208,835	100.00%
2013	72,916,729	72,916,729	100.00%
2014	97,840,554	97,840,554	100.00%
2015	100,466,945	100,466,945	100.00%
2016	105,983,112	105,983,112	100.00%
2017	97,457,455	97,457,455	100.00%

(1) *Since 2008, the AOC has been equal to the ARC calculated by LACERS, based on percentage of actual payroll. In future valuations, the ARC will be referred to as the Actuarially Determined Contribution (ADC).*

This schedule of funding progress presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

CHART 6

Required Supplementary Information – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll* (c)	UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]
06/30/2012	$1,642,373,560	$2,292,400,227	$650,026,667	71.64%	$1,819,269,630	35.73%
06/30/2013	1,734,733,258	2,412,483,968	677,750,710	71.91%	1,846,970,474	36.70%
06/30/2014	1,941,224,810	2,662,853,153	721,628,343	72.90%	1,898,064,175	38.02%
06/30/2015	2,108,924,651	2,646,989,367	538,064,716	79.67%	1,907,664,598	28.21%
06/30/2016	2,248,753,480	2,793,688,955	544,935,475	80.49%	1,968,702,630	27.68%
06/30/2017	2,438,458,132	3,005,806,234	567,348,102	81.12%	2,062,316,129	27.51%

* *Reflects amount calculated in the pension valuation.*

The Net OPEB obligation measures the accumulated differences between the annual OPEB cost and the actual contributions in relation to the ARC.

The dollar amounts shown below reflect the contribution rates applied to actual payrolls.

CHART 7

Required Supplementary Information – Net OPEB Obligation (NOO)

Fiscal Year End	Annual Required Contribution (a)	Interest on Existing NOO (b)	ARC Adjustment (c)	Annual OPEB Cost (a) + (b) + (c) (d)	Actual Contribution Amount (e)	Net Increase in NOO (d) - (e) (f)	NOO as of Fiscal Year (g)
06/30/2012	$115,208,835	$0	$0	$115,208,835	$115,208,835	$0	$0
06/30/2013	72,916,729	0	0	72,916,729	72,916,729	0	0
06/30/2014	97,840,554	0	0	97,840,554	97,840,554	0	0
06/30/2015	100,466,945	0	0	100,466,945	100,466,945	0	0
06/30/2016	105,983,112	0	0	105,983,112	105,983,112	0	0
06/30/2017	97,457,455	0	0	97,457,455	97,457,455	0	0

VOLATILITY RATIOS

OPEB plans are subject to volatility in the level of required contributions. This volatility tends to increase as OPEB plans become more mature.

The Asset Volatility Ratio (AVR), which is equal to the market value of assets divided by total payroll, provides an indication of the potential contribution volatility for any given level of investment volatility. A higher AVR indicates that the plan is subject to a greater level of contribution volatility. This is a current measure since it is based on the current level of assets.

For LACERS, the current AVR is about 1.18. This means that a 1% asset gain/(loss) (relative to the assumed investment return) translates to about 1.18%% of one-year's payroll. Since LACERS amortizes actuarial gains and losses over a period of 15 years, there would be a 0.1% of payroll decrease/(increase) in the required contribution for each 1% asset gain/(loss).

The Liability Volatility Ratio (LVR), which is equal to the Actuarial Accrued Liability divided by payroll, provides an indication of the longer-term potential for contribution volatility for any given level of investment volatility. This is because, over an extended period of time, the plan's assets should track the plan's liabilities. For example, if a plan is 50% funded on a market value basis, the liability volatility ratio would be double the asset volatility ratio and the plan sponsor should expect contribution volatility to increase over time as the plan becomes better funded.

The LVR also indicates how volatile contributions will be in response to changes in the Actuarial Accrued Liability due to actual experience or to changes in actuarial assumptions.

For LACERS, the current LVR is about 1.46. This is about 23% higher than the AVR. Therefore, we would expect that contribution volatility will increase over the long-term.

This chart shows how the asset and liability volatility ratios have varied over time.

CHART 8

Volatility Ratios for Years Ended June 30, 2011 – 2017

Year Ended June 30	Asset Volatility Ratio	Liability Volatility Ratio
2011	0.80	1.07
2012	0.82	1.26
2013	0.93	1.31
2014	1.10	1.40
2015	1.12	1.39
2016	1.08	1.42
2017	1.18	1.46

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, inactive non-vested members (entitled to a refund of member contributions), inactive vested members, retired members and beneficiaries.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibit A.

A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.

CHART 9

Member Population: 2008 – 2017

Year Ended June 30	Active Participants	Inactive Members	Retired Members and Surviving Spouses**	Ratio of Non-Actives to Actives
2008	30,236	703	12,004	0.42
2009	30,065	674	11,893	0.42
2010	26,245	806	13,442	0.54*
2011	25,449	813	13,436	0.56
2012	24,917	858	13,431	0.57
2013	24,441	861	13,592	0.59
2014	24,009	955	13,686	0.61
2015	23,895	1,032	14,012	0.63
2016	24,446	1,119	14,313	0.63
2017	25,457	1,280	14,652	0.63

* *Reflects 2009 Early Retirement Incentive Program.*

** *Excludes retirees and surviving spouses not yet enrolled in retiree health benefits.*

This exhibit summarizes the participant data used for the current and prior valuations.

EXHIBIT A
Summary of Participant Data
All

	Year Ended June 30		Change From Prior Year
Category	**2017**	**2016**	
Active members in valuation:			
Number	25,457	24,446	4.1%
Average age	47.9	48.6	N/A
Average service	14.1	14.7	N/A
Projected total payroll	$2,062,316,129	$1,968,702,630	4.8%
Inactive members:			
Number	1,280	1,119	14.4%
Average age	50.8	50.5	N/A
Retirees:*			
Number of non-disabled	12,529	12,174	2.9%
Number of disabled	325	336	-3.3%
Total number of retirees	12,854	12,510	2.7%
Average age of retirees	71.9	71.9	N/A
Number of spouses	4,887	4,773	2.4%
Average age of spouses	68.5	68.4	N/A
Surviving Spouses:*			
Number in pay status	1,798	1,803	-0.3%
Average age	79.7	79.6	N/A

* *Excludes retirees and surviving spouses not receiving health benefits.*

EXHIBIT A (continued)

Summary of Participant Data

Tier 1

Category	Year Ended June 30 2017	2016	Change From Prior Year
Active members in valuation:			
Number	23,426	23,985	-2.3%
Average age	48.9	48.8	N/A
Average service	15.2	15.0	N/A
Projected total payroll	$1,936,988,361	$1,939,683,049	-0.1%
Inactive members:			
Number	1,280	1,119	14.4%
Average age	50.8	50.5	N/A
Retirees:*			
Number of non-disabled	12,529	12,174	2.9%
Number of disabled	325	336	-3.3%
Total number of retirees	12,854	12,510	2.7%
Average age of retirees	71.9	71.9	N/A
Number of spouses	4,887	4,773	2.4%
Average age of spouses	68.5	68.4	N/A
Surviving Spouses:*			
Number in pay status	1,798	1,803	-0.3%
Average age	79.7	79.6	N/A

* *Excludes retirees and surviving spouses not receiving health benefits.*

EXHIBIT A (continued)

Summary of Participant Data

Tier 3

Category	Year Ended June 30 2017	2016	Change From Prior Year
Active members in valuation:			
Number	2,031	461	340.6%
Average age	36.5	36.7	N/A
Average service	0.6	0.2	N/A
Projected total payroll	$125,327,768	$29,019,581	331.9%
Inactive members:			
Number	0	0	N/A
Average age	N/A	N/A	N/A
Retirees:			
Number of non-disabled	0	0	N/A
Number of disabled	0	0	N/A
Total number of retirees	0	0	N/A
Average age of retirees	N/A	N/A	N/A
Number of spouses	N/A	N/A	N/A
Average age of spouses	N/A	N/A	N/A
Surviving Spouses:			
Number in pay status	0	0	0
Average age	N/A	N/A	N/A

EXHIBIT B

Reconciliation of Participant Data with Pension Valuation

	Year Ended June 30	
	2017	**2016**
Active		
Pension valuation	25,457	24,446
Health valuation	25,457	24,446
Retirees		
Pension valuation	13,986	13,572
Retirees with no subsidy due to service or decision not to enroll	-1,431	-1,373
Deferred retirees eligible for future health benefits	-26	-25
Health valuation	12,529	12,174
Disableds		
Pension valuation	902	922
Disabled with no subsidy due to service or decision not to enroll	-519	-516
Deferred disableds eligible for future health benefits	-58	-70
Health valuation	325	336
Surviving Spouses		
Pension valuation	3,917	3,863
Surviving spouses with no subsidy due to service or decision not to enroll	-2,041	-1,978
Deferred surviving spouses eligible for future health benefits	-78	-82
Health valuation	1,798	1,803
Inactive Vested		
Pension valuation	7,428	6,895
Inactive vesteds with less than 10 years of service	-6,148	-5,776
Health valuation	1,280	1,119

EXHIBIT C
Retirees and Beneficiaries Added to and Removed from the Rolls

Year Ended 6/30	No. of New Retirees/ Beneficiaries	Annual Allowances Added*	No. of Retirees/ Beneficiaries Removed	Annual Allowances Removed	No. of Retirees/ Beneficiaries at 6/30	Annual Allowances at 6/30	Percent Increase in Annual Allowances	Average Annual Allowance
2012	433	-$540,583	438	$2,516,835	13,431	$94,046,643	-3.1	$7,002
2013	635	9,263,844	474	2,463,967	13,592	100,846,520	7.2	7,420
2014	616	7,160,148	522	3,047,436	13,686	104,959,232	4.1	7,669
2015	860	10,844,333	534	3,174,045	14,012	112,629,520	7.3	8,038
2016	837	2,185,058	536	3,102,492	14,313	111,712,086	-0.8	7,805
2017	913	13,706,185	574	3,316,380	14,652	122,101,891	9.3	8,333

**Also reflects changes in subsidies for continuing retirees and beneficiaries.*

EXHIBIT D
Cash Flow Projections

The ARC generally exceeds the current pay-as-you-go ("paygo") cost of an OPEB plan. Over time the paygo cost will tend to grow and may even eventually exceed the ARC in a well-funded plan. The following table projects the paygo cost as the projected net fund payment over the next ten years.

Year Ending June 30	Projected Number of Retirees*			Projected Benefit Payments		
	Current	Future	Total	Current	Future	Total
2018	19,539	1,559	21,098	$117,059,987	$10,739,157	$127,799,144
2019	19,009	2,587	21,596	117,417,232	20,078,385	137,495,617
2020	18,443	3,666	22,109	118,737,595	31,712,442	150,450,037
2021	17,859	4,803	22,662	118,684,333	44,820,886	163,505,219
2022	17,264	5,937	23,201	118,721,760	58,939,161	177,660,921
2023	16,665	7,034	23,699	117,536,002	73,348,115	190,884,117
2024	16,051	8,121	24,172	116,862,599	88,510,252	205,372,851
2025	15,430	9,123	24,553	115,074,790	103,456,266	218,531,056
2026	14,802	10,089	24,891	113,421,315	117,769,336	231,190,651
2027	14,165	11,006	25,171	111,524,820	131,342,227	242,867,047

* *Includes spouses of retirees, but excludes those not receiving a subsidy from LACERS.*

EXHIBIT E

Summary Statement of Income and Expenses on an Actuarial Value Basis for Retirement, Health, Family Death and Larger Annuity Benefits

	June 30, 2017		June 30, 2016	
Contribution income:				
Employer contributions	$550,961,514		$546,687,123	
Employee contributions	227,531,810		211,344,752	
Net contribution income		$778,493,324		$758,031,875
Investment income:				
Interest, dividends and other income	$371,193,752		$328,356,817	
Recognition of capital appreciation	807,293,418		742,488,219	
Less investment and administrative fees	-93,469,731		-87,439,883	
Net investment income		$1,085,017,439		$983,405,153
Total income available for benefits		$1,863,510,763		$1,741,437,028
Less benefit payments:				
Payment of benefits	-$918,837,634		-$877,204,804	
Refunds of contributions	-9,802,623		-7,718,826	
Net benefit payments		-$928,640,257		-$884,923,630
Change in reserve for future benefits		$934,870,506		$856,513,398

Note: Results may be slightly off due to rounding.

EXHIBIT F

Summary Statement of Assets for Retirement, Health, Family Death, and Larger Annuity Benefits

	June 30, 2017		June 30, 2016	
Cash equivalents		$491,514,054		$499,731,305
Accounts receivable:				
Investment income	$52,776,887		$50,163,160	
Proceeds from sales of investments	112,600,821		102,333,983	
Other	13,529,376		28,008,361	
Total accounts receivable		$178,907,084		$180,505,504
Investments:				
Fixed Income	$3,726,445,570		$3,674,318,513	
Equities	9,019,681,282		7,542,082,855	
Real Estate and Alternative Investment	2,413,497,346		2,241,780,660	
Other	962,815,829		782,185,594	
Total investments at market value		$16,122,440,027		$14,240,367,622
Capital assets		$6,489,879		$4,951,637
Total assets		$16,799,351,044		$14,925,556,068
Less accounts payable:				
Accounts payable and accrued expenses		-$37,587,430		-$38,484,600
Accrued investment expenses		-10,779,563		-11,324,180
Derivative instruments		0		-870,314
Purchases of investments		-197,722,529		-174,028,137
Security lending collateral		-863,691,212		-695,789,322
Total accounts payable		-$1,109,780,734		-$920,496,553
Net assets at market value		$15,689,570,310		$14,005,059,515
Net assets at actuarial value		$15,686,973,131		$14,752,102,625
Net assets at valuation value (health benefits)		$2,438,458,132		$2,248,753,480

Note: Results may be slightly off due to rounding.

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Administration has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

EXHIBIT G

Determination of Actuarial Value of Assets as of June 30, 2017

1. Market value of assets				$15,689,570,310
2. Calculation of unrecognized return(1)	Original Amount	Portion Not Recognized	Amount Not Recognized	
(a) Year ended June 30, 2017	$770,969,472	6/7	$660,830,976	
(b) Year ended June 30, 2016	-1,065,023,569	5/7	-760,731,121	
(c) Year ended June 30, 2015	-707,760,540	4/7	-404,434,594	
(d) Year ended June 30, 2014	1,246,285,581	3/7	534,122,392	
(e) Combined net deferred loss as of June 30, 2013(2)	-81,571,421	2/6	-27,190,474	
(f) Total unrecognized return				$2,597,179
3. Preliminary actuarial value: (1) - (2f)				$15,686,973,131
4. Adjustment to be within 40% corridor				0
5. Final actuarial value of assets: (3) + (4)				$15,686,973,131
6. Actuarial value as a percentage of market value: (5) ÷ (1)				100.0%
7. Market value of health assets				$2,438,861,850
8. Valuation value of health assets (5) ÷ (1) x (7)				$2,438,458,132
9. Deferred return recognized in each of the next 6 years:				
(a) Amount recognized on 6/30/2018				$21,329,183
(b) Amount recognized on 6/30/2019				21,329,183
(c) Amount recognized on 6/30/2020				34,924,420
(d) Amount recognized on 6/30/2021				-143,116,377
(e) Amount recognized on 6/30/2022				-42,007,728
(f) Amount recognized on 6/30/2023				110,138,496
(g) Subtotal (may not total exactly due to rounding)				$2,597,179

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(1) *Total return minus expected return on a market value basis.*

(2) *Based on action taken by the Board on September 9, 2014, the net unrecognized loss as of June 30, 2013 (i.e., $81,571,421) has been recognized in six level amounts, with two years of recognition remaining after the June 30, 2017 valuation.*

The chart below details the changes in the ARC from the prior valuation to the current year's valuation.

EXHIBIT H

Reconciliation of Recommended Contribution from June 30, 2016 to June 30, 2017[1]

Recommended Contribution as of June 30, 2016[1]	4.92%
Change due to investment gain	-0.16
Change due to miscellaneous demographic gains and losses, including change in the normal cost	0.24
Change due to new economic assumptions	0.57
Change due to updated 2017/2018 premium and subsidy levels	-0.12
Change due to adopting future medical trend rates after 2017/2018	-0.57
Change due to reflecting projected ACA excise tax on high-cost health plans under the old economic assumptions	0.26
Effect of decrease in UAAL rate from greater than expected increase in payroll	-0.04
Recommended Contribution as of June 30, 2017[1]	5.10%

[1] *Based on contributions at July 15.*

[2] *Changes in unfunded actuarial accrued liability were amortized over 15 years.*

EXHIBIT I
Solvency Test for OPEB

	Aggregate Actuarial Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
Valuation Date	Terminated Members	Retirees, Beneficiaries, & Dependents	Active Members	Valuation Value of Retiree Health Assets	Terminated Members	Retirees, Beneficiaries, & Dependents	Active Members
06/30/2012	$24,454,075	$1,083,168,136	$1,184,778,016	$1,642,373,560	100%	100%	45%
06/30/2013	26,868,636	1,104,832,577	1,280,782,755	1,734,733,258	100	100	47
06/30/2014	41,188,181	1,196,769,321	1,424,895,651	1,941,224,810	100	100	49
06/30/2015	42,943,089	1,210,066,527	1,393,979,751	2,108,924,651	100	100	61
06/30/2016	50,413,399	1,275,604,225	1,467,671,331	2,248,753,480	100	100	63
06/30/2017	62,252,306	1,379,356,850	1,564,197,078	2,438,458,132	100	100	64

EXHIBIT I

Summary of Required Supplementary Information

Valuation date	June 30, 2017	
Actuarial cost method	Entry Age Cost Method, level percent of salary.	
Amortization method	Level percent of payroll – assuming a 3.50% increase in total covered payroll.	
Amortization period	Multiple Layers:	
	2009 ERIP	15 years
	2012 Combined Base	30 years
	Actuarial Experience	15 years
	Change in non-health related assumptions	20 years
	Change in health related assumptions	15 years
	Future ERIP	5 years
	AVA in excess of AAL	30 years
	Plan Amendment	15 years
Asset valuation method	Market value of assets less unrecognized returns in each of the last seven years. 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. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.	
Actuarial assumptions:		
Investment rate of return	7.25%	
Inflation rate	3.00%	
Real across-the-board salary increase	0.50%	
Projected salary increases	Ranges from 10.00% to 3.90%	
Medical, dental, Medicare Part B trend rates	See table on page 39.	
Plan participants:	June 30, 2017	June 30, 2016
Current retirees, beneficiaries, and dependents receiving benefits	19,539	19,086
Current active participants	25,457	24,446
Terminated participants entitled but not yet eligible	1,280	1,119
Total	46,276	44,651

EXHIBIT II

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions: The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the July 1, 2011 through June 30, 2014 Actuarial Experience Study dated October 8, 2014, economic assumption review dated June 30, 2017 and retiree health assumptions letter dated September 20, 2017. Unless otherwise noted, all actuarial assumptions and methods shown below apply to both Tier 1 and Tier 3 members. These assumptions have been adopted by the Board.

Measurement Date: June 30, 2017

Data: LACERS provided detailed census data and financial data for post-employment benefits.

Post-Retirement Mortality Rates:

Healthy Members and All Beneficiaries: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and with no setback for females.

Disabled Members: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set forward seven years for males and set forward eight years for females.

The above mortality tables contain about a 10% margin, based on actual to expected deaths, as a provision to anticipate future mortality improvement, based on a review of mortality experience as of the measurement date.

Termination Rates Before Retirement:

Pre-Retirement Mortality: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and with no setback for females.

	Rate (%)	
Age	**Disability**	**Termination***
25	0.01	5.75
30	0.03	5.75
35	0.05	4.85
40	0.09	3.50
45	0.15	2.70
50	0.19	2.50
55	0.20	2.35
60	0.20	2.25

* *Rates for members with five or more years of service. Termination rates are zero for members eligible to retire.*

Rates of termination for members with less than 5 years of service are as follows:

	Rate (%)
Service	Termination (Based on Service)
0	13.25
1	11.00
2	8.75
3	7.25
4	5.75

Retirement Rates:

	Rate (%)			
	Tier 1		Tier 3	
Age	Non-55/30	55/30	Non-55/30	55/30
50	6.0	0.0	6.0	0.0
51	3.0	0.0	3.0	0.0
52	3.0	0.0	3.0	0.0
53	3.0	0.0	3.0	0.0
54	16.0	0.0	15.0	0.0
55	6.0	20.0	0.0(1)	19.0
56	6.0	14.0	0.0(1)	13.0
57	6.0	14.0	0.0(1)	13.0
58	6.0	14.0	0.0(1)	13.0
59	6.0	14.0	0.0(1)	13.0
60	6.0	14.0	5.0	13.0
61	6.0	14.0	5.0	13.0
62	7.0	15.0	6.0	14.0
63	7.0	15.0	6.0	14.0
64	7.0	16.0	6.0	15.0
65	12.0	17.0	11.0	16.0
66	12.0	17.0	11.0	16.0
67	12.0	17.0	11.0	16.0
68	12.0	17.0	11.0	16.0
69	12.0	17.0	11.0	16.0
70	100.0	100.0	100.0	100.0

(1) *Not eligible to retire under the provisions of the Tier 3 plan.*

Retirement Age and Benefit for Inactive Vested Participants:	Assume retiree health benefit will be paid at the later of age 58 or the current attained age.
Exclusion of Inactive Vested:	Inactive vested with less than 10 years of service are excluded.
Definition of Active Members:	First day of biweekly payroll following employment for new department employees or immediately following transfer from other city department.
Unknown Data for Members:	Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.
Service:	Employment service is used for eligibility determination purposes. Benefit service is used for benefit calculation purposes.
Future Benefit Accruals:	1.0 year of service per year.
Net Investment Return:	7.25%
Salary Increases:	Inflation: 3.00%; plus additional 0.50% "across the board" salary increases (other than inflation); plus the following merit and promotional increases:

Service	Percentage Increase
0	6.50%
1	6.20%
2	5.10%
3	3.10%
4	2.10%
5	1.10%
6	1.00%
7	0.90%
8	0.70%
9	0.60%
10+	0.40%

Actuarial Value of Assets:	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. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.
Actuarial Cost Method:	Entry Age Cost Method, level percent of salary.
Per Capita Cost Development:	The assumed costs on a composite basis are the future costs of providing postemployment health care benefits at each age. To determine the assumed costs on a composite basis, historical premiums are reviewed and adjusted for increases in the cost of health care services.

Maximum Dental Subsidy

Carrier	Election Percent	Monthly 2017-2018 Fiscal Year Subsidy
Delta Dental PPO	79.0%	$44.50
DeltaCare USA	21.0%	$12.50

Per Capita Cost Development – Tier 1, Not Subject to Medical Subsidy Cap:

Participant Under Age 65 or Not Eligible for Medicare A & B

2017-2018 Fiscal Year		Single Party			Married/With Domestic Partner			Eligible Survivor		
CARRIER	Observed and Assumed Election Percent	Monthly Premium*	Maximum Subsidy	**Subsidy**	Monthly Premium*	Maximum Subsidy	**Subsidy**	Monthly Premium*	Maximum Subsidy	**Subsidy**
Kaiser HMO	**61.9%**	$839.91	$1,763.84	**$839.91**	$1,679.82	$1,763.84	**$1,679.82**	$839.91	$839.91	**$839.91**
Anthem Blue Cross PPO	**22.5%**	$1,226.65	$1,763.84	**$1,226.65**	$2,448.77	$1,763.84	**$1,763.84**	$1,226.65	$839.91	**$839.91**
Anthem Blue Cross HMO	**15.6%**	$1,018.18	$1,763.84	**$1,018.18**	$2,031.82	$1,763.84	**$1,763.84**	$1,018.18	$839.91	**$839.91**

* With the exception of Kaiser, the amounts above reflect the inclusion of the vision insurance plan premium.

Participant Eligible for Medicare A & B

2017-2018 Fiscal Year		Single Party			Married/With Domestic Partner			Eligible Survivor		
CARRIER	Observed and Assumed Election Percent	Monthly Premium*	Maximum Subsidy	**Subsidy**	Monthly Premium*	Maximum Subsidy	**Subsidy**	Monthly Premium*	Maximum Subsidy	**Subsidy**
Kaiser Senior Advantage HMO	**58.0%**	$251.25	$251.25	**$251.25**	$502.50	$502.50	**$502.50**	$251.25	$251.25	**$251.25**
Anthem Blue Cross Medicare Supplement	**30.3%**	$524.22	$524.22	**$524.22**	$1,043.91	$1,034.95	**$1,034.95**	$524.22	$524.22	**$524.22**
UHC Medicare Adv. HMO for California**	**11.7%**	$267.26	$267.26	**$267.26**	$529.98	$529.98	**$529.98**	$267.26	$267.26	**$267.26**

* With the exception of Kaiser, the amounts above reflect the inclusion of the vision insurance plan premium.

** Rates for CA plan.

Members who are subject to the retiree medical subsidy cap will have monthly health insurance subsidy maximums capped at the levels in effect at July 1, 2011, as shown in the table below:

	Single Party	**Married/With Domestic Partner**	**Eligible Survivor**
Under 65 – All Plans	$1,190.00	$1,190.00	$593.62
Over 65			
Kaiser HMO	$203.27	$406.54	$203.27
Blue Cross Medicare Supplement	$478.43	$482.19	$478.43
UHC Medicare Adv. HMO for California	$219.09	$390.92	$219.09

Adjustments to per-capita costs (as shown on page 36) based on age, gender, and status, are as follows:

	Retiree		**Spouse**	
Age	**Male**	**Female**	**Male**	**Female**
55	0.9003	0.9295	0.7085	0.8025
60	1.0692	1.0019	0.9485	0.9308
64	1.2266	1.0628	1.1974	1.0476
65	0.9188	0.7809	0.9188	0.7809
70	1.0648	0.8416	1.0648	0.8416
75	1.1475	0.9059	1.1475	0.9059
80+	1.2357	0.9766	1.2357	0.9766

Spouse/Domestic Partner Coverage:	60% of male and 30% of female retirees who receive a subsidy are assumed to be married or have a qualified domestic partner and elect dependent coverage. Of these covered spouses/domestic partners, 100% are assumed to continue coverage if the retiree predeceases the spouse/domestic partner.
Spouse Age Difference:	Male retirees are assumed to be 4 years older than their female spouses. Female retirees are assumed to be 2 years younger than their male spouses.
Participation:	Retiree Medical and Dental Coverage Participation:

Service Range	Percent Covered*
10 – 14	65%
15 – 19	80%
20 – 24	90%
25 and Over	95%

* *Inactive members are assumed to elect coverages at 50% of the rates shown above.*

100% of retirees becoming eligible for Medicare are assumed to be covered by both Parts A and B.

Health Care Cost Subsidy Trend Rates:

PROPOSED MEDICAL TRENDS FOR THE JUNE 30, 2017 VALUATION

Trends to be applied in following fiscal years, to all health plans.

Trend is to be applied to premium for shown fiscal year to calculate next fiscal year's projected premium

First Fiscal Year (July 1, 2017 through June 30, 2018)

Plan	Anthem Blue Cross PPO, Under Age 65	Anthem Blue Cross Medicare Supplement	Kaiser HMO, Under Age 65	Kaiser Senior Advantage	Anthem Blue Cross HMO, Under 65	UHC Medicare HMO
Trend to be applied to 2017-2018 Fiscal Year premium	7.23%	6.85%	5.16%	5.72%	7.18%	5.74%

The fiscal year trend rates are based on the following calendar year trend rates:

	Trend (Approx.)			Trend (applied to calculate following year premium)	
Fiscal Year	Non-Medicare	Medicare	Calendar Year	Non-Medicare	Medicare
2018-2019	6.87%	6.37%	2018	7.00%*	6.50%*
2019-2020	6.62%	6.12%	2019	6.75%	6.25%
2020-2021	6.37%	5.87%	2020	6.50%	6.00%
2021-2022	6.12%	5.62%	2021	6.25%	5.75%
2022-2023	5.87%	5.37%	2022	6.00%	5.50%
2023-2024	5.62%	5.12%	2023	5.75%	5.25%
2024-2025	5.37%	4.87%	2024	5.50%	5.00%
2025-2026	5.12%	4.62%	2025	5.25%	4.75%
2026-2027	4.87%	4.50%	2026	5.00%	4.50%
2027-2028	4.62%	4.50%	2027	4.75%	4.50%
2028 and later	4.50%	4.50%	2028	4.50%	4.50%

Dental Premium Trend	4.50% for all years
Medicare Part B Premium Trend	Trend for the 2017-18 fiscal year will be calculated based on the actual increase in Medicare B premium from 2017 to 2018, when it becomes available. 4.50% for years following the 2018 calendar year.

** For example, the 7.00% assumption when applied to the 2018 non-Medicare medical premiums would provide the projected 2019 non-Medicare medical premiums. This trend would also be applied to the maximum medical subsidy, based on the non-Medicare Kaiser premium.*

Health Care Reform:	As directed by LACERS, we have reflected in the current valuation the impact of potential excise tax imposed by the Affordable Care Act (ACA) and related statutes on certain health plans in calculating the contribution rates for the employer. We understand that Statements No. 74 and No. 75 by the Governmental Accounting Standards Board (GASB) for financial reporting purposes is expected to require the inclusion of the excise tax in the liability. Statement No. 74 is effective for fiscal years beginning after June 15, 2016 for plan reporting and Statement No. 75 is effective for fiscal years beginning after June 15, 2017 for employer reporting.
Administrative Expenses:	No administrative expenses were valued separately from the premium costs.
Plan Design:	Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III.
Assumption Changes Since Prior Valuation:	The discount rate was lowered from 7.50% to 7.25%. The salary scale assumption was updated Different trend rates for Medicare and non-Medicare medical plans was introduced. The ultimate trend rate was reduced from 5.00% to 4.50%. Starting premium costs and first year trends were revised to reflect 2018 calendar year premium data. Medical and dental carrier election assumptions were updated.

EXHIBIT III

Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

Membership Eligibility:

Tier 1 (§4.1002(a))	All employees who became members of the Retirement System before July 1, 2013, and certain employees who became members of the Retirement System on or after July 1, 2013. In addition, pursuant to Ordinance No. 184134, all Tier 2 employees who became members of the Retirement System between July 1, 2013 and February 21, 2016 were transferred to Tier 1 effective February 21, 2016.
Tier 3 (§4.1080.2(a))	All employees who became members of the Retirement System on or after February 21, 2016, except as provided otherwise in Section 4.1080.2(b) of the Los Angeles Administrative Code.

Benefit Eligibility:

Tier 1 (§4.1111(a)) and Tier 3 (§4.1126(a))	Retired age 55 or older with at least 10 years of service (including deferred vested members who terminate employment and receive a retirement benefit from LACERS), or if retirement date is between October 2, 1996, and September 30, 1999 at age 50 or older with at least 30 years of service. Benefits are also payable to spouses, domestic partners, or other qualified dependents while the retiree is alive. Please note that the health subsidy is not payable to a disabled retiree before the member reaches age 55.

Medical Subsidy for Members Not Subject to Cap:

Under Age 65 or Over Age 65 Without Medicare Part A

Tier 1 (§4.1111(d)) and Tier 3 (§4.1126(c))	The System will pay 4% of the maximum health subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum health subsidy. As of July 1, 2017, the maximum health subsidy is $1,736.88 per month, increasing to $1,790.80 in calendar year 2018.

Over Age 65 and Enrolled in Both Medicare Parts A and B

Tier 1 (§4.1111(e)) and Tier 3 (§4.1126(d))

For retirees, a maximum health subsidy shall be paid in the amount of the single-party monthly premium of the approved Medicare supplemental or coordinated plan in which the retiree is enrolled, subject to the following vesting schedule:

Completed Years of Service	Vested Percentage
1-14	75%
15-19	90%
20+	100%

Subsidy Cap for Tier 1:

(§4.1111(b))

As of the June 30, 2011 valuation, the retiree health benefits program was changed to cap the medical subsidy for non-retired members who do not contribute an additional 4% or 4.5% of employee contributions to the Pension Plan.

The capped subsidy is different for Medicare and non-Medicare retirees.

The cap applies to the medical subsidy limits at the 2011 calendar year level.

The cap does not apply to the dental subsidy or the Medicare Part B premium reimbursement.

Dependents:

Tier 1 (§4.1111(e)(4)) and Tier 3 (§4.1126(d)(4))

An additional amount is added for coverage of dependents which shall not exceed the amount provided to a retiree not enrolled in Medicare Parts A and B and covered by the same medical plan with the same years of service. The combined member and dependent subsidy shall not exceed the actual premium.

Dental Subsidy for Members:

Tier 1 (§4.1114(b)) and Tier 3 (§4.1129(b))

The System will pay 4% of the maximum dental subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum dental subsidy. As of July 1, 2017, the maximum dental subsidy is $44.60 per month; remaining unchanged in calendar year 2018.

There is no subsidy available to spouses or domestic partners or for dependent coverage. There is also no reimbursement for dental plans not sponsored by the System.

Medicare Part B Reimbursement for Members:

Tier 1 (§4.1113) and Tier 3 (§4.1128)

If a Retiree is covered by both Medicare Parts A and B, and enrolled in a LACERS medical plan or participates in the LACERS Retiree Medical Premium Reimbursement Program, LACERS will reimburse the retiree the basic Medicare Part B premium.

Surviving Spouse Medical Subsidy

Tier 1 (§4.1115) and Tier 3 (§4.1129.1)

The surviving spouse or domestic partner will be entitled to a health subsidy (limited to the actual lowest cost plan available single-party premium) based on the member's years of service and the surviving dependent's eligibility for Medicare.

Under Age 65 or Over Age 65 Without Medicare Part A

The maximum health subsidy available for survivors is the lowest cost plan available (currently Kaiser) single-party premium ($826.43 per month as of July 1, 2017, increasing to $853.39 on January 1, 2018).

Over Age 65 and Enrolled in Both Medicare Parts A and B

For survivors, a maximum health subsidy limited to the single-party monthly premium of the plan in which the survivor is enrolled, is provided subject to the following vesting schedule:

Completed Years of Service	Vested Percentage
1-14	75%
15-19	90%
20+	100%

Changes in Plan Provisions: None

NOTE: *The summary of major Plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the System should find the plan summary not in accordance with the actual provisions, the System should alert the actuary so that both parties can be sure the proper provisions are valued.*

EXHIBIT IV

Definitions of Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions:	The estimates on which the cost of the Plan is calculated including: (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future; (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates; (c) Retirement rates — the rate or probability of retirement at a given age; (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.
Actuarial Present Value of Total Projected Benefits (APB):	Present value of all future benefit payments for current retirees and active employees taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions.
Normal Cost:	The amount of contributions required to fund the benefit allocated to the current year of service.
Actuarial Accrued Liability For Actives:	The equivalent of the accumulated normal costs allocated to the years before the valuation date.
Actuarial Accrued Liability For Retirees:	The single sum value of lifetime benefits to existing retirees. This sum takes account of life expectancies appropriate to the ages of the retirees and of the interest which the sum is expected to earn before it is entirely paid out in benefits.

Actuarial Value of Assets (AVA):	The value of assets used by the actuary in the valution. These may be at market value or some other method used to smooth variations in market value from one valuation to the next.
Funded Ratio:	The ratio AVA/AAL.
Unfunded Actuarial Accrued Liability (UAAL):	The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.
Amortization of the Unfunded Actuarial Accrued Liability:	Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.
Investment Return (discount rate):	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next. If the plan is funded on a pay-as-you-go basis, the discount rate is tied to the expected rate of return on day-to-day employer funds.
Covered Payroll:	Annual reported salaries for all active participants on the valuation date.
ARC as a Percentage of Covered Payroll:	The ratio of the annual required contribution to covered payroll.
Health Care Cost Trend Rates:	The annual rate of increase in net claims costs per individual benefiting from the Plan.
Annual Required Contribution (ARC):	The ARC is equal to the sum of the normal cost and the amortization of the unfunded actuarial accrued liability.

Net OPEB Obligation (NOO):	The NOO is the cumulative difference between the annual OPEB cost and actual contributions made. If the plan is not pre-funded, the actual contribution would be equal to the annual benefit payments less retiree contributions.
Annual OPEB Cost (AOC):	Annual OPEB cost is the measure required by GASB 45 of a sole or agent employer's "cost" of participating in an OPEB plan. When an employer has no net OPEB obligation, annual OPEB cost is equal to the ARC. When a net OPEB obligation has a liability (positive) balance, annual OPEB cost is equal to (a) the ARC, plus (b) one year's interest on the beginning balance of the net OPEB obligation, less (c) an adjustment to the ARC to offset, approximately, the amount included in the ARC for amortization of the past contribution deficiencies. When a net OPEB obligation has an asset (negative) balance, the interest adjustment should be deducted from and the ARC adjustment should be added to the ARC, to determine annual OPEB cost.
ARC Adjustment:	The ARC adjustment is an amortization payment based on the prior year NOO. The purpose of the interest and ARC adjustments is to avoid "double-counting" annual OPEB cost and liabilities. Without the adjustments, annual OPEB cost and the net OPEB obligation (liability) would be overstated by the portion of the amortization amount previously recognized in annual OPEB cost. With the adjustments, annual OPEB cost should be approximately equal to the ARC that would have been charged if all prior ARCs had been paid in full, plus one year's interest on the net OPEB obligation.
Employer Contributions:	For the purposes of GASB 43/45, an employer has contributed to an OPEB plan if the employer has (a) provided benefits directly to retired plan members or their beneficiaries, (b) paid insurance premiums to insure the payment of benefits, or (c) irrevocably transferred assets to a qualifying trust, or equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator.

EXHIBIT V

Accounting Requirements

The Governmental Accounting Standards Board (GASB) issued Statement Number 45 – *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions.* Under this statement, all state and local government entities that provide other post-employment benefits (OPEB) are required to report the cost of these benefits on their financial statements. The accounting standards supplement cash accounting, under which the expense for postemployment benefits is equal to benefit and administrative costs paid on behalf of retirees and their dependents (*i.e.*, a pay-as-you-go basis).

The statement covers postemployment benefits of health, prescription drug, dental, vision and life insurance coverage for retirees; long-term care coverage, life insurance and death benefits that are *not* offered as part of a pension plan; and long-term disability insurance for employees. The benefits valued in this report are limited to those described in Exhibit III of Section 4, which are based on those provided under the terms of the substantive plan in effect at the time of the valuation and on the pattern of sharing costs between the employer and plan members. The projection of benefits is not limited by legal or contractual limits on funding the plan unless those limits clearly translate into benefit limits on the substantive plan being valued.

The new standards introduce an accrual-basis accounting requirement, thereby recognizing the employer cost of postemployment benefits over an employee's career. The standards also introduce a consistent accounting requirement for both pension and non-pension benefits.

The total cost of providing postemployment benefits is projected, taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions. These assumptions are summarized in Exhibit II of Section 4. This amount is then discounted to determine the actuarial present value of the total projected benefits (APB). The actuarial accrued liability (AAL) is the portion of the present value of the total projected benefits allocated to years of employment prior to the measurement date. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and actuarial value of assets in the Plan.

Once the UAAL is determined, the Annual Required Contribution (ARC) is determined as the normal cost (the APB allocated to the current year of service) and the amortization of the UAAL. This ARC is compared to actual contributions made and any difference is reported as the Net OPEB Obligation (NOO). In addition, Required Supplementary Information (RSI) must be reported, including historical information about the UAAL and the progress in funding the Plan. Exhibit IV of Section 4 contains a definition of terms.

The calculation of an accounting obligation does not, in and of itself, imply that there is any legal liability to provide the benefits valued, nor is there any implication that the Employer is required to implement a funding policy to satisfy the projected expense.

Actuarial calculations reflect a long-term perspective, and the methods and assumptions use techniques designed to reduce short-term volatility in accrued liabilities and the actuarial value of assets, if any.

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and the actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

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Segal Consulting

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November 7, 2017

Board of Administration
Los Angeles City Employees' Retirement System
202 West First Street, Suite 500
Los Angeles, CA 90012-4401

Re: Los Angeles City Employees' Retirement System
Family Death Benefit Plan (FDBP) Costs as of June 30, 2017

Dear Board Members:

We have developed our recommended contribution rates for the voluntary Family Death Benefit Plan ("Plan") as of June 30, 2017. These rates are effective for the two plan years beginning July 1, 2018 and ending June 30, 2020. The last review of the Plan was conducted as part of the June 30, 2015 actuarial valuation. That study yielded the current employee monthly contribution rate of $3.70. The City matches the employees' cost at the same level.

RECOMMENDATIONS

Based on the census data and the actuarial assumptions used for the June 30, 2017 actuarial valuation, our observations and recommendations are as follows:

- The current employee monthly rate is $3.70 through the end of the current plan year (June 30, 2018). Based on this rate, the estimated total annual contributions would be about $274,000 ($137,000 each for the members and the City) for plan year 2017/2018.
- It is our understanding that the earnings credited to the Family Death Benefits Reserve include realized and unrealized gains or losses. Therefore, the crediting procedure for the Family Death Benefits Reserve is in line with the procedure utilized for the Retirement Plan reserves (with the exceptions of the Reserve for Member Contributions and the Annuity Reserve). Since the future payment liability for this program has been discounted at the valuation assumed earnings rate of 7.25% per year for this valuation, we believe the crediting procedure is consistent with the valuation discount rate assumption.

- For several years, Plan assets have exceeded the Plan's liability reserve. The Plan does not currently have a formal policy on how the monthly premium rate should be adjusted to reflect any such funding surplus. Based on discussions with LACERS staff, Segal has been directed to provide some possible alternatives on how the monthly premium rate could be adjusted in years when there is a surplus. Accordingly, we have provided as an Appendix to this report two alternatives for the Board to consider.
- After discussions with LACERS, we recommend that the current employee monthly rate of $3.70 be decreased to $3.00 for the two plan years beginning July 1, 2018 and ending June 30, 2020. This is developed using Alternative 2 in the Appendix to this report, where the surplus is amortized over 30 years.

ANALYSIS AND ASSUMPTIONS

It is our understanding that the Plan is funded on a term cost basis and the premium charged for the current year is only supposed to be sufficient to pay for the present value of the projected death benefits for those expected to die in the same period. However, there is an adjustment in the monthly premium based on the Plan's funded status to reflect the relative value of the actual plan reserve compared to the actual present value of death benefits in pay status for those who previously died. As of June 30, 2017, the Plan's term cost is $323,290 for the 3,075 active members participating at June 30, 2017. This translates to an employee and City monthly rate of $4.38 each. However, the Plan is in a surplus position as of June 30, 2017, with the Plan's actuarial value of assets of $15,858,684 exceeding the liability reserve of $7,576,611 by $8,282,073.[1] This surplus is about $1.3 million higher than the surplus as of the last review as of June 30, 2015.

We anticipate that the surplus reserve of $8,282,073 will be more than sufficient to sustain the recommended monthly premium rates of $3.00 for the employee and the City for the two plan years beginning July 1, 2018. As surplus would be depleted at the rate of about $102,000 per year, which is substantially less than the expected investment return on the surplus assets of $8,282,073, we expect that at June 30, 2020 there would be an even larger surplus remaining from the June 30, 2017 surplus balance of $8,282,073. The surplus continues to grow because some active FDBP members are paying premiums even though their survivors may not receive benefits from the Plan. This is discussed in item 5 below and under Alternative 1 in the Appendix.

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[1] If the Plan's June 30, 2017 market value of assets of $15,861,310 were to be used in the above analysis, the Plan would have a surplus of $8,284,699 instead of $8,282,073.

As noted, all of the calculations are based on the June 30, 2017 actuarial valuation participant data and actuarial assumptions shown in the Retirement Plan valuation report. In addition, this Plan requires further assumptions in the valuation as shown below:

1) Each participating active member is assumed to have two children with an average age of about 13.
2) The children are assumed to be eligible for a monthly benefit of about $938 each until they reach age 18.
3) A surviving spouse is assumed to be eligible for a monthly benefit of about $312 until the children reach age 16.
4) A surviving spouse of a member who has paid FDBP premiums for 10 or more years is assumed to be eligible for an additional monthly benefit of about $613 starting at age 60.[2]
5) As previously discussed with LACERS and included in our 2015 valuation report, survivors may not receive benefits from the FDBP if they receive a service retirement survivorship benefit from the Retirement Plan. Therefore, those FDBP participants who are currently eligible to retire under the Retirement Plan do not have an FDBP liability in our valuation even though it is assumed that they would continue to pay premiums to the FDBP. We believe this is one of the primary contributors to the surplus balance of $8,282,073 as of June 30, 2017, because 1,397 of the 3,075 active participants in the Plan as of June 30, 2017 will not be eligible for a benefit from the FDBP.

The above costs were certified by Andy Yeung, ASA, Enrolled Actuary.

Sincerely,

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

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

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[2] Larger amounts are available if the surviving spouse begins receiving payments after age 60.

Los Angeles City Employees' Retirement System
FDBP Costs as of June 30, 2017

APPENDIX

Possible Alternatives On How To Adjust The Monthly Premium Rate In Years Where There Is A Surplus

SURPLUS HISTORY

Below we provide the historical progression of the surplus Family Death Benefit Reserves, based on the actuarial (smoothed) value of assets, for the last five biennial valuations:

Valuation Date	Actuarial Value of FDBP Assets	FDBP Liability Reserve	Excess FDBP Reserves
June 30, 2009	$15,891,776	$9,907,080	$5,984,696
June 30, 2011	15,085,615	9,542,709	5,542,906
June 30, 2013	14,456,893	8,453,914	6,002,979
June 30, 2015	15,402,402	8,378,370	7,024,032
June 30, 2017	15,858,684	7,576,611	8,282,073

ALTERNATIVES FOR REDUCING SURPLUS IN FDBP

Following are two possible alternatives on how to reduce the FDBP surplus and to adjust the monthly premium rate for the FDBP when there is a surplus:

Alternative 1. Permanent Cessation of Contributions to FDBP for Certain Members

As previously discussed with LACERS and included in our 2015 valuation report, current or future survivors may not receive any benefits from the FDBP if they are currently receiving a service retirement survivorship benefit from the Retirement Plan because the member has already passed away, or will become entitled to a future service retirement survivorship benefit because the active member has already satisfied the requirements under the Retirement Plan to receive a benefit. However, we understand there are FDBP active participants who are currently eligible to retire under the Retirement Plan (and whose potential survivors will not receive any benefits from the FDBP) and who are continuing to pay employee premiums. As of the June 30, 2017 valuation date, there were 3,075 active employees who were paying employee premiums. We have estimated that slightly less than ½ of those members, or 1,397 members, were eligible to retire as of the valuation date and so their future survivors would not be eligible for any benefits from the FDBP, leaving 1,678 members who may have future survivors eligible for FDBP benefits.

For this alternative, Segal proposes that LACERS determine exactly which FDBP participants are currently eligible for service retirement and suggest that LACERS inform these participants to consider de-selecting the voluntary FDBP contributions. (This would have the added effect of allowing the City to suspend matching contributions to the FDBP for these participants.) As noted on page 2 in the body of this report, the Plan's term cost of $323,290 as of June 30, 2017 for the 3,075 active members participating in the Plan as of that date translates to an employee and City monthly rate of $4.38 each. This term cost reflects no liabilities for the 1,397 members who are eligible to retire under the Retirement Plan. Should these 1,397 members terminate their participation in the FDBP, the term cost as of June 30, 2017 for the remaining 1,678 members would translate to an employee and City monthly rate of $8.03 each. In this case, maintaining the current monthly premium at $3.70 would mean that the surplus is depleted at a rate of about $174,000 per year, which is less than the expected investment return on the surplus of about $600,000.

While this alternative may be considered to be more of a communication issue than a funding policy issue, it would help to prevent the Plan from accumulating even more surplus going forward.

Alternative 2. Reduction in Contributions

Under the Retirement Plan's funding policy, actuarial surplus is amortized over a 30-year open (non-decreasing) period. For the FDBP, the Board may want to consider amortizing actuarial surplus over the same 30-year open period. In addition, since the benefits and the associated employer and employee contributions for FDBP are not dependent on salary, we would suggest amortizing the surplus as a level dollar amount, rather than a level percentage of salary. The amortization of the surplus would serve as a reduction in the current $3.70 per month charge to the FDBP. An annual amortization credit of about $638,000 would be available at the beginning

APPENDIX

Possible Alternatives On How To Adjust The Monthly Premium Rate In Years Where There Is A Surplus

of the year by amortizing over 30 years the surplus of $8,282,073 available as of June 30, 2017. We note this credit would be more than the $3.70 monthly charge. This credit would be approximately $8.65 per month each (for the employee and for the City), assuming for this calculation that the same 3,075 active employees as of June 30, 2017 would continue to participate in the Plan (i.e., before considering Alternative 1).

For this alternative, we propose that the monthly charge be reduced below the current $3.70 and possibly to $0 for the two plan years beginning July 1, 2018 and ending June 30, 2020. However, before the Board considers this alternative, the following ramifications should be considered: 1) A reduction or cessation of contributions for 2018/2019 and 2019/2020 could be viewed by some members as a permanent cessation of all contributions, rather than a temporary cessation. 2) As of the June 30, 2017 valuation date, there were about 25,500 active members. Of those, we have roughly estimated that about 7,300 members were eligible to retire as of the valuation date, leaving about 18,200 not yet eligible. Of those not yet eligible to retire, about 1,700 members are currently contributing FDBP premiums. This leaves approximately 16,500 (i.e., 18,200 - 1,700) additional active employees who may want to participate in the FDBP if contributions are temporarily reduced or ceased, which is about a ten-fold increase over the number of retirement ineligible members currently contributing.

We have reviewed various scenarios for applying the annual surplus amortization credit of $638,000 for purposes of reducing the excess FDBP reserves. For instance, if we were to recommend no change in the current $3.70 employee monthly rate, we have estimated that approximately 4,500 new FDBP participants out of the remaining 16,500 eligible participants mentioned above would need to enroll in the FDBP in order to reduce the excess FDBP reserves by the entire annual credit of $638,000. These hypothetical 4,500 new FDBP participants would represent about 27% of all remaining eligible participants.

If, instead, we were to recommend a large change in the current $3.70 employee monthly rate, such as a 50% reduction to $1.85, we have estimated that approximately 2,600 new FDBP participants would need to enroll in the FDBP in order for the surplus to be reduced by the annual credit of $638,000. These hypothetical 2,600 new FDBP participants would represent about 16% of all remaining eligible participants.

APPENDIX

Possible Alternatives On How To Adjust The Monthly Premium Rate In Years Where There Is A Surplus

Both of these scenario results reflect the assumption that the current participants who will not have a survivor eligible for FDBP benefits (i.e., the 1,397 participants mentioned above in Alternative 1) will opt out of the Plan.

Based on discussions with LACERS, we recommend that the current employee monthly rate of $3.70 be decreased to $3.00 per month, in order to reflect a reasonable expectation of additional FDBP participants. This reduction in the monthly rate would mean that about 3,600 new participants would need to enroll in the FDBP in order for the surplus reserves to be reduced by the annual credit of $638,000.

It should be noted that in preparing the above premium reduction amounts, we have assumed the term cost of the new FDBP participants to be the same as the $8.03 calculated above based on 1,678 members covered under the Plan as of June 30, 2017.

RECOMMENDATION

As noted above, we recommend that only a partial reduction to the current monthly premiums, from the current $3.70 to $3.00, occurs for 2018/2019 and 2019/2020 (Alternative 2). In addition, we recommend that it be communicated to members who are currently contributing to the FDBP but who are currently retirement eligible (Alternative 1) to cease contributing to the Plan.

Segal Consulting

Los Angeles City Employees' Retirement System

Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2017

This report has been prepared at the request of the Board of Administration to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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November 7, 2017

Board of Administration
Los Angeles City Employees' Retirement System
202 W. 1st Street, Suite 500
Los Angeles, CA 90012-4401

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards (GAS) 67 Actuarial Valuation as of June 30, 2017. It contains various information that will need to be disclosed in order to comply with GAS 67.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the System. The census and financial information on which our calculations were based was prepared by LACERS. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Andy Yeung, ASA, MAAA, FCA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the System.

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

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

Paul Angelo, FSA, MAAA, FCA, EA *Senior Vice President and Actuary*	Andy Yeung *Andy Yeung, ASA, MAAA, FCA, EA* *Vice President and Actuary*

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SECTION 1

VALUATION SUMMARY

SECTION 2

GASB 67 INFORMATION

Purpose

This report has been prepared by Segal Consulting ("Segal") to present certain disclosure information required by Statement No. 67 of the Governmental Accounting Standards Board as of June 30, 2017. This valuation is based on:

- The benefit provisions of the Pension Plan, as administered by the Board of Administration;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2017, provided by LACERS;
- The assets of the Plan as of June 30, 2017, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

General Observations on GAS 67 Valuation

The following points should be considered when reviewing this GAS 67 report:

- The Governmental Accounting Standards Board (GASB) rules only define pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes. Employers and plans still develop and adopt funding policies under current practices.
- When measuring pension liability, GASB uses the same actuarial cost method (Entry Age) and the same type of discount rate (expected return on assets) as LACERS uses for funding. This means that the Total Pension Liability (TPL) measure for financial reporting shown in this report is determined on the same basis as LACERS' Actuarial Accrued Liability (AAL) measure for funding. We note that the same is true for the Normal Cost component of the annual plan cost for funding and financial reporting.
- The Net Pension Liability (NPL) is equal to the difference between the TPL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets and therefore, the NPL measure is the same as the Unfunded Actuarial Accrued Liability (UAAL) calculated on a market value basis. The NPL reflects all investment gains and losses as of the measurement date. This is different from the UAAL calculated on an actuarial value of assets basis in the funding valuation that reflects investment gains and losses over a seven-year period.

- The NPLs measured as of June 30, 2017 and 2016 have been determined from the actuarial valuations as of June 30, 2017 and June 30, 2016, respectively.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The NPL decreased from \$5.62 billion as of June 30, 2016 to \$5.28 billion as of June 30, 2017 mainly due to the return on the market value of retirement plan assets of 12.71%[1] during 2016/2017 that was more than the assumption of 7.50% used in the June 30, 2016 valuation (that gain was about \$0.62 billion), offset somewhat by the change in the economic actuarial assumptions (that change was about \$0.34 billion). Changes in these values during the last two fiscal years ending June 30, 2016 and June 30, 2017 can be found in Exhibit 3.
- The discount rate used to determine the TPL and NPL as of June 30, 2017 and 2016 were 7.25% and 7.50%, respectively following the same assumption used by the System in the pension funding valuations as of the same dates. The detailed calculations used in the derivation of the discount rate of 7.25% used in the calculation of the TPL and NPL as of June 30, 2017 can be found in Exhibit 5 of Section 2. Various other information that is required to be disclosed can be found throughout Exhibits 1 through 4 in Section 2.
- Pursuant to Ordinance No. 184853 ("the Ordinance"), which was adopted by the City Council on March 28, 2017, Airport Peace Officers (APO) at LACERS can elect to remain in LACERS or transfer to Los Angeles Fire and Police Pension Plan (LAFPP) Tier 6 prior to January 7, 2018. All new APO hired after that date would be enrolled in LAFPP Tier 6, rather than in LACERS. Under the Ordinance, APO members who elect to remain in LACERS would be a Tier 1 member and would be eligible for enhanced benefits at LACERS. A description of the enhanced benefits and the cost to provide those benefits were detailed in our APO report dated February 8, 2017. The additional costs in that report were estimated under the assumption that only APO members with five or more years of service would remain at LACERS, as the costs to those specific employees to transfer to LAFPP Tier 6 and upgrade their past service would be much higher. It should be noted that in this GAS 67 valuation report, we have not included the liabilities to reflect any potential future elections for APO members to remain at LACERS, since the elections for APO members to remain at LACERS have not yet been completed. We will work with the Retirement System to determine when the additional liabilities for the enhanced benefits should be re-measured and reported, after the elections to remain at LACERS have been completed.

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[1] *Net of investment expenses only.*

Summary of Key Valuation Results

	2017	2016
Disclosure elements for fiscal year ending June 30:		
Service cost[1]	$340,758,622	$322,574,274
Total Pension Liability	18,458,187,953	17,424,996,329
Plan Fiduciary Net Position	13,180,515,725	11,809,329,415
Net Pension Liability	5,277,672,228	5,615,666,914
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions	$453,356,059	$440,546,011
Actual contributions	453,356,059	440,546,011
Contribution deficiency / (excess)	0	0
Demographic data for plan year ending June 30:		
Number of retired members and beneficiaries	18,805	18,357
Number of vested terminated members[2]	7,428	6,895
Number of active members	25,457	24,446
Key assumptions as of June 30:		
Investment rate of return	7.25%	7.50%
Inflation rate	3.00%	3.25%
Projected salary increases[3]	Ranges from 10.00% to 3.90%, based on years of service	Ranges from 10.50% to 4.40%, based on years of service

(1) *The service cost is based on the previous year's valuation, meaning the 2017 and 2016 values are based on the valuations as of June 30, 2016 and June 30, 2015, respectively. Both of the service costs have been calculated using the assumptions shown in the 2016 column as there had been no changes in the actuarial assumptions between the June 30, 2015 and 2016 valuations.*

(2) *Includes terminated members due a refund of employee contributions.*

(3) *Includes inflation at 3.00% (3.25% for the June 30, 2016 valuation) plus real across the board salary increase of 0.50% (0.75% for the June 30, 2016 valuation) plus merit and promotional increases*

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare an actuarial valuation, Segal relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in this report (as well as the plan summary included in our funding valuation report) to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the System. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the System. The System uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, termination, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Board to assist the sponsors of the Fund in preparing items related to the pension plan in their financial reports. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If the System is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Board should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Retirement System.

EXHIBIT 1

General Information – "Financial Statements", Note Disclosures and Required Supplementary Information for a Single-Employer Pension Plan

Plan Description

Plan administration. The Los Angeles City Employees' Retirement System (LACERS) was established by City Charter in 1937. LACERS is a single employer public employee retirement system whose main function is to provide retirement benefits to the civilian employees of the City of Los Angeles.

Under the provisions of the City Charter, the Board of Administration (the "Board") has the responsibility and authority to administer the Plan and to invest its assets. The Board members serve as trustees and must act in the exclusive interest of the Plan's members and beneficiaries. The Board has seven members: four members, one of whom shall be a retired member of the system, shall be appointed by the Mayor subject to the approval of the Council; two members shall be active employee members of the system elected by the active employee members; one shall be a retired member of the system elected by the retired members of the system.

Plan membership. At June 30, 2017, pension plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits	18,805
Vested terminated members entitled to, but not yet receiving benefits(1)	7,428
Active members	25,457
Total	51,690

(1) Includes terminated members due a refund of employee contributions.

Benefits provided. LACERS provides service retirement, disability, death and survivor benefits to eligible employees. Employees of the City become members of LACERS on the first day of employment in a position with the City in which the employee is not excluded from membership. Members employed prior to July 1, 2013 are designated as Tier 1, and pursuant to Ordinance No. 184134, all Tier 2 employees who became members of the Retirement System between July 1, 2013 and February 21, 2016 were transferred to Tier 1 effective February 21, 2016. Those employed on or after February 21, 2016 are designated as Tier 3 (unless a specific exception applies to the employee, providing a right to Tier 1 status).

Tier 1 members are eligible to retire for service with a normal retirement benefit once they attain the age of 70, or the age of 60 with 10 or more years of continuous City service, or the age of 55 with 30 or more years of City service. Tier 3 members are eligible to retire for service with a normal retirement benefit at 1.50% of final average monthly compensation per year of service credit once they attain the age of 60 with 10 years of service (but with less than 30 years of service), including 5 years of continuous City service, or at 2.00% of final average monthly compensation per year of service credit once they attain the age of 60 with 30 years of service, including 5 years of continuous City service.

Tier 1 and 3 members are eligible to retire for disability once they have 5 or more years of continuous service.

Under the Tier 1 formula, the monthly service retirement allowance at normal retirement age is 2.16% of final average monthly compensation per year of service credit. Reduced retirement allowances are available for early retirement for Tier 1 members reaching age 55 with 10 or more years of continuous City service, or with 30 or more years of City service at any age. The Tier 1 early retirement reduction factors, for retirement below age 60, are as follows:

Age	Factor	Age	Factor
45	0.6250	53	0.8650
46	0.6550	54	0.8950
47	0.6850	55	0.9250
48	0.7150	56	0.9400
49	0.7450	57	0.9550
50	0.7750	58	0.9700
51	0.8050	59	0.9850
52	0.8350	60	1.0000

Under the Tier 3 formula, the monthly service retirement allowance at normal retirement age is 2.00% of final average monthly compensation per year of service credit. Reduced retirement allowances are available for early retirement for Tier 3 members prior to reaching age 60 with 30 years of service, including 5 years of continuous City service. The Tier 3 retirement reduction factors at early retirement ages are as follows:

Age	Factor	Age	Factor
45	0.6250	50	0.7750
46	0.6550	51	0.8050
47	0.6850	52	0.8350
48	0.7150	53	0.8650
49	0.7450	54	0.8950
		55-60	1.0000

Tier 3 members are eligible to retire with an enhanced retirement benefit at 2.00% of final average monthly compensation per year of service credit once they attain the age of 63 with 10 years of service (but with less than 30 years of service), including 5 years of continuous City service, or at 2.10% of final average monthly compensation per year of service credit once they attain the age of 63 with 30 years of service, including 5 years of continuous City service.

Under Tier 1, pension benefits are calculated based on the highest average salary earned during a 12-month period (including base salary plus regularly assigned pensionable bonuses or premium pay). Under Tier 3, pension benefits are calculated based on the highest average salary earned during a 36-month period (limited to base salary and any items of compensation that are designated as pension based). The IRC Section 401(a)(17) compensation limit applies to all employees who began membership in LACERS after June 30, 1996.

For Tier 1 members, the maximum monthly retirement allowance is 100% of the final average monthly compensation. For Tier 3 members, the maximum monthly retirement allowance is 80% of the final average monthly compensation, except when the benefit is based solely on the annuity component funded by the member's contributions.

In lieu of the service retirement allowance under the Tier 1 and Tier 3 formula ("unmodified option"), the member may choose an optional retirement allowance. The unmodified option provides the highest monthly benefit and a 50% continuance to an eligible surviving spouse or domestic partner for Tier 1 and Tier 3 members. The optional retirement allowances require a reduction in the unmodified option amount in order to allow the member the ability to provide various benefits to a surviving spouse, domestic partner, or named beneficiary.

LACERS provides annual cost-of-living adjustments (COLAs) to all retirees. The cost-of-living adjustments are made each July 1 based on the percentage change in the average of the Consumer Price Index for the Los Angeles-Riverside-Orange County Area--All Items For All Urban Consumers. It is capped at 3.0% for Tier 1 and 2.0% for Tier 3.

The City of Los Angeles contributes to the retirement plan based upon actuarially determined contribution rates adopted by the Board of Administration. Employer contribution rates are adopted annually based upon recommendations received from LACERS' actuary after the completion of the annual actuarial valuation. The combined employer contribution rate as of June 30, 2017 was 22.98% of compensation .[2]

All members are required to make contributions to LACERS regardless of the tier in which they are included. Currently, all Tier 1 members contribute at 11.0% or 11.5% of compensation and all Tier 3 members contribute at 11.0% of compensation.

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[2] *Based on the June 30, 2015 funding valuation (which established funding requirements for fiscal year 2016/2017). Exhibit 4 in Section 2 of this report provides details on how this rate was calculated.*

EXHIBIT 2

Net Pension Liability

The components of the Net Pension Liability of LACERS are as follows:

	June 30, 2017	June 30, 2016
Total Pension Liability	$18,458,187,953	$17,424,996,329
Plan Fiduciary Net Position	-13,180,515,725	-11,809,329,415
System's Net Pension Liability	$5,277,672,228	$5,615,666,914
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	71.41%	67.77%

The Net Pension Liability (NPL) was measured as of June 30, 2017 and 2016. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement date, while the Total Pension Liability (TPL) was determined based upon the results of the actuarial valuations as of June 30, 2017 and 2016, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of June 30, 2017 and 2016 are the same as those used in the LACERS funding valuations as of June 30, 2017 and 2016, respectively.

Actuarial assumptions. The TPL as of June 30, 2017 was determined by an actuarial valuation as of June 30, 2017. The actuarial assumptions used in the June 30, 2017 valuation were based on the results of an experience study for the period from July 1, 2011 through June 30, 2014 and on the results of an economic actuarial assumptions study as of June 30, 2017. They are the same as the assumptions used in the June 30, 2017 funding actuarial valuation for LACERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	Ranges from 10.00% to 3.90% based on years of service, including inflation
Investment rate of return	7.25%, net of pension plan investment expense, including inflation
Other assumptions	Same as those used in the June 30, 2017 actuarial valuation

The TPL as of June 30, 2016 was determined by an actuarial valuation as of June 30, 2016. The actuarial assumptions used in the June 30, 2016 valuation were based on the results of an experience study for the period from July 1, 2011 through June 30, 2014. They are the same as the assumptions used in the June 30, 2016 funding actuarial valuation for LACERS. In particular, the following actuarial assumptions were applied to all periods included in the measurement:

Inflation	3.25%
Salary increases	Ranges from 10.50% to 4.40% based on years of service, including inflation
Investment rate of return	7.50%, net of pension plan investment expense, including inflation
Other assumptions	Same as those used in the June 30, 2016 actuarial valuation

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term (Arithmetic) Expected Real Rate of Return
U.S. Large Cap Equity	19.00%	5.61%
U.S. Small Cap Equity	5.00%	6.48%
Developed International Equity	19.00%	7.08%
Developed International Small Cap Equity	3.00%	7.32%
Emerging Market Equity	7.00%	9.35%
Core Bonds	19.00%	1.08%
Private Real Estate	5.00%	4.44%
Cash	1.00%	(0.06)%
Credit Opportunities	5.00%	3.75%
Public Real Assets	5.00%	3.35%
Private Equity	12.00%	8.97%
Total	100.00%	

Discount rate: The discount rate used to measure the Total Pension Liability was 7.25% as of June 30, 2017 and 7.50% as of June 30, 2016. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer and employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both June 30, 2017 and June 30, 2016.

Sensitivity of the Net Pension Liability to changes in the discount rate. The following presents the Net Pension Liability of LACERS as of June 30, 2017, calculated using the discount rate of 7.25%, as well as what LACERS' Net Pension Liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)	**Current Discount (7.25%)**	**1% Increase (8.25%)**
Net Pension Liability as of June 30, 2017	$7,722,365,456	$5,277,672,228	$3,243,284,183

EXHIBIT 3

Schedules of Changes in LACERS Net Pension Liability – Last Two Fiscal Years

	2017	2016
Total Pension Liability		
Service cost[1]	$340,758,622	$322,574,274
Interest	1,302,278,282	1,263,555,893
Change of benefit terms	0	0
Differences between expected and actual experience	-146,474,065	-300,812,751
Changes of assumptions	340,717,846	0
Benefit payments, including refunds of employee contributions	-804,089,061	-770,317,467
Net change in Total Pension Liability	$1,033,191,624	$514,999,949
Total Pension Liability – beginning	17,424,996,329	16,909,996,380
Total Pension Liability – ending (a)	$18,458,187,953	$17,424,996,329
Plan Fiduciary Net Position		
Contributions – employer	$453,356,059	$440,546,011
Contributions – employee	221,828,781	206,377,251
Net investment income	1,517,544,363	29,357,755
Benefit payments, including refunds of employee contributions	-804,089,061	-770,317,467
Administrative expense	-17,453,832	-17,204,154
Other	0	0
Net change in Plan Fiduciary Net Position	$1,371,186,310	-$111,240,604
Plan Fiduciary Net Position – beginning	11,809,329,415	11,920,570,019
Plan Fiduciary Net Position – ending (b)	$13,180,515,725	$11,809,329,415
System's Net Pension Liability – ending (a) – (b)	$5,277,672,228	$5,615,666,914
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	71.41%	67.77%
Covered-employee payroll[2]	$1,973,048,633	$1,876,946,179
Plan Net Pension Liability as percentage of covered-employee payroll	267.49%	299.16%

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[1] *The service cost is based on the previous year's valuation, meaning the 2017 and 2016 values are based on the valuations as of June 30, 2016 and June 30, 2015, respectively. Both of the service costs have been calculated using the assumptions shown on page iii in the 2016 column as there had been no changes in the actuarial assumptions between the June 30, 2015 and 2016 valuations.*

[2] *Covered-employee payroll represents the collective total of the pensionable wages of all LACERS membership tiers.*

EXHIBIT 4

Schedule of Employer Contributions – Last Ten Fiscal Years

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency / (Excess)	Covered-Employee Payroll[1]	Contributions as a Percentage of Covered-Employee Payroll
2008	$288,119,041	$288,119,041	$0	$1,741,849,669	16.54%
2009	274,554,786	274,554,786	0	1,832,795,577	14.98%
2010	258,642,795	258,642,795	0	1,827,864,283	14.15%
2011	303,560,953	303,560,953	0	1,678,059,440	18.09%
2012	308,539,905	308,539,905	0	1,715,197,133	17.99%
2013	346,180,852	346,180,852	0	1,736,112,598	19.94%
2014	357,649,232	357,649,232	0	1,802,931,195	19.84%
2015	381,140,923	381,140,923	0	1,835,637,409	20.76%
2016	440,546,011	440,546,011	0	1,876,946,179	23.47%
2017	453,356,059	453,356,059	0	1,973,048,633	22.98%

(1) *Covered-employee payroll represents the collective total of the pensionable wages of all LACERS membership tiers.*

Notes to Exhibit 4

Methods and assumptions used to establish "actuarially determined contribution" (ADC) rates:	
Valuation date	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported
Actuarial cost method	Entry Age Cost Method (individual basis)
Amortization method	Level percent of payroll
Amortization period	Multiple layers, closed amortization periods. Actuarial gains/losses are amortized over 15 years. Assumption or method changes are amortized over 20 years. Plan changes, including the 2009 ERIP, are amortized over 15 years. Future ERIPs will be amortized over 5 years. Actuarial surplus is amortized over 30 years. The existing layers on June 30, 2012, except those arising from the 2009 ERIP and the two GASB 25/27 layers, were combined and amortized over 30 years.
Asset valuation method	Market value of assets less unrecognized returns in each of the last seven years. 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. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.
Actuarial assumptions:	June 30, 2017 valuation date
Investment rate of return	7.25%
Inflation rate	3.00%
Real across-the-board salary increase	0.50%
Projected salary increases[(1)]	Ranges from 10.00% to 3.90%, based on years of service
Cost of living adjustments	3.00% for Tier 1; 2.00% for Tier 3 (actual increases are contingent upon CPI increases with a 3.00% maximum for Tier 1 and a 2.00% maximum for Tier 3)
Mortality	Healthy: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and with no setback for females
Other assumptions	Same as those used in the June 30, 2017 funding actuarial valuation

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(1) *Includes inflation at 3.00% plus across the board salary increases of 0.50% plus merit and promotional increases.*

EXHIBIT 5

Projection of Pension Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2017

($ in millions)

Year Beginning July 1,	Projected Beginning Plan Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Plan Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2016	$11,809	$675	$804	$17	$1,518	$13,181
2017	13,181	681	917	19	943	13,868
2018	13,868	684	946	20	991	14,576
2019	14,576	681	1,005	22	1,040	15,270
2020	15,270	679	1,067	23	1,088	15,948
2021	15,948	697	1,131	24	1,135	16,626
2022	16,626	707	1,197	25	1,182	17,293
2023	17,293	699	1,265	26	1,227	17,928
2024	17,928	659	1,332	26	1,269	18,498
2043	24,126	114 *	2,269	36	1,660	23,596
2044	23,596	109 *	2,270	35	1,622	23,021
2045	23,021	103 *	2,266	34	1,580	22,405
2046	22,405	98 *	2,259	33	1,535	21,745
2047	21,745	92 *	2,250	32	1,488	21,043
2080	1,224	11 *	280	2	78	1,032
2081	1,032	10 *	243	2	65	863
2082	863	9 *	209	1	54	716
2083	716	8 *	179	1	45	589
2084	589	7 *	151	1	37	481
2100	12	0 *,**	4	0	1	10
2101	10	0 *,**	3	0	1	8
2102	8	0 *,**	2	0	0	6
2103	6	0 *,**	2	0	0	5
2104	5	0 *,**	1	0	0	4
2105	4	0 *,**	1	0	0	3
2106	3	0 *,**	1	0	0	3
2107	3	0 *,**	1	0	0	2
2108	2	0 *,**	1	0	0	2
2109	2	0 *,**	0 **	0	0	1
2110	1	0 *,**	0 **	0	0	1
2111	1	0 *,**	0 **	0	0	1
2112	1	0 *,**	0 **	0	0	1
2113	1	0 *,**	0 **	0	0	0
2114	0	0 *,**	0 **	0	0	0
2115	0	0 *,**	0 **	0	0	0

* Mainly attributable to employer contributions to fund each year's annual administrative expenses.

** Less than $1 million, when rounded.

Note that in preparing the above projections, we have not taken into consideration the one-year delay between the date of the contribution rate calculation and the implementation.

EXHIBIT 5

Projection of Pension Plan's Fiduciary Net Position for Use in Calculation of Discount Rate as of June 30, 2017

($ in millions) - continued

Notes:

(1) Amounts may not total exactly due to rounding.

(2) Amounts shown for the year beginning July 1, 2016 row are actual amounts, based on the unaudited financial statements provided by LACERS.

(3) Years 2025-2042, 2048-2079, and 2085-2099 have been omitted from this table.

(4) Column (a): None of the projected beginning Plan Fiduciary Net Position amounts shown have been adjusted for the time value of money.

(5) Column (b): Projected total contributions include employee and employer normal cost contributions based on closed group projections (based on covered active members as of June 30, 2017); plus employer contributions to the unfunded actuarial accrued liability; plus contributions to fund each year's annual administrative expenses reflecting a 15-year amortization schedule. Contributions are assumed to occur halfway through the year, on average.

(6) Column (c): Projected benefit payments have been determined in accordance with paragraph 39 of GAS Statement No. 67, and are based on the closed group of active, inactive vested, retired members, and beneficiaries as of June 30, 2017. The projected benefit payments reflect the cost of living increase assumptions used in the June 30, 2017 funding valuation report. Benefit payments are assumed to occur halfway through the year, on average. In accordance with paragraph 31.b.(1)(e) of GASB Statement No. 67, the long-term expected rate of return on Plan investments of 7.25% was applied to all periods of projected benefit payments to determine the discount rate.

(7) Column (d): Projected administrative expenses are calculated as approximately 0.15% of the projected beginning Plan Fiduciary Net Position amount. The 0.15% portion was based on the actual fiscal year 2016 - 2017 administrative expenses as a percentage of the beginning Plan Fiduciary Net Position amount as of July 1, 2016. Administrative expenses are assumed to occur halfway through the year, on average.

(8) Column (e): Projected investment earnings are based on the assumed investment rate of return of 7.25% per annum.

(9) As illustrated in this Exhibit, the Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments for current Plan members. In other words, there is no projected 'cross-over date' when projected benefits are not covered by projected assets. Therefore, the long-term expected rate of return on Plan investments of 7.25% per annum was applied to all periods of projected benefit payments to determine the Total Pension Liability as of June 30, 2017 shown earlier in this report, pursuant to paragraph 44 of GASB Statement No. 67.

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Segal Consulting

Los Angeles City Employees' Retirement System

Governmental Accounting Standards (GAS) 74 Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2017

This report has been prepared at the request of the Board of Administration to assist in administering the Fund. This valuation report may not otherwise be copied or reproduced in any form without the consent of the Board of Administration and may only be provided to other parties in its entirety. The measurements shown in this actuarial valuation may not be applicable for other purposes.

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November 7, 2017

Board of Administration
Los Angeles City Employees' Retirement System
202 W. 1st Street, Suite 500
Los Angeles, CA 90012-4401

Dear Board Members:

We are pleased to submit this Governmental Accounting Standards (GAS) 74 Actuarial Valuation as of June 30, 2017. It contains various information that will need to be disclosed in order to comply with GAS 74.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the System. The census and financial information on which our calculations were based was prepared by LACERS. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

The actuarial calculations were completed under the supervision of Thomas Bergman, ASA, MAAA, Enrolled Actuary and Andy Yeung ASA, MAAA, FCA, Enrolled Actuary. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and expectations for the System.

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

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: Andy Yeung

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

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

JAC/bqb

SECTION 1

VALUATION SUMMARY

SECTION 2

GASB 74 INFORMATION

Purpose

This report has been prepared by Segal Consulting to present certain disclosure information required for "Other Postemployment Benefits (OPEB)" plans by Statement No. 74 of the Governmental Accounting Standards Board as of June 30, 2017. This valuation is based on:

- The benefit provisions of the OPEB Plan, as administered by the Board of Administration;
- The characteristics of covered active members, inactive vested members, and retired members and beneficiaries as of June 30, 2017, provided by LACERS;
- The assets of the Plan as of June 30, 2017, provided by LACERS;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

General Observations on GAS 74 Actuarial Valuation

The following points should be considered when reviewing this GAS 74 report:

- The Governmental Accounting Standards Board (GASB) rules only define OPEB liability and expense for financial reporting purposes, and do not apply to contribution amounts for OPEB funding purposes. Employers and plans still develop and adopt funding policies under current practices.
- When measuring OPEB liability, GASB uses the same actuarial cost method (Entry Age) and, for benefits that are being fully funded on an actuarial basis, the same expected return on Plan assets as used for funding. This means that the Total OPEB Liability (TOL) measure for financial reporting shown in this report is determined on the same basis as the Actuarial Accrued Liability (AAL) measure for funding.
- The Net OPEB Liability (NOL) is equal to the difference between the TOL and the Plan's Fiduciary Net Position. The Plan's Fiduciary Net Position is equal to the market value of assets. The NOL reflects all investment gains and losses as of the measurement date.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The discount rate used in the valuation for financial disclosure purposes as of June 30, 2017 is the assumed investment return on Plan assets (e.g. 7.25% for the June 30, 2017 funding valuation). As contributions that are required to be made by the City to amortize the unfunded Actuarial Accrued Liability in the funding valuation are determined on an actuarial basis, the future Actuarially Determined Contributions and current Plan assets, when projected in accordance with the method prescribed by GAS 74, are expected to be sufficient to make all benefit payments to current members.
- The NOL has decreased from $658.8 million as of June 30, 2016 to $566.9 million as of June 30, 2017.
- The NOLs measured as of June 30, 2017 and 2016 have been determined from the valuations as of June 30, 2017 and 2016, respectively.
- Pursuant to Ordinance No. 184853 ("the Ordinance"), which was adopted by the City Council on March 28, 2017, Airport Peace Officers (APO) at LACERS can elect to remain in LACERS or transfer to Los Angeles Fire and Police Pension Plan (LAFPP) Tier 6 prior to January 7, 2018. All new APO hired after that date would be enrolled in LAFPP Tier 6, rather than in LACERS. Under the Ordinance, APO members who elect to remain in LACERS would be a Tier 1 member and would be eligible for enhanced retirement plan benefits at LACERS. A description of the enhanced retirement plan benefits and the cost to provide those benefits were detailed in our APO report dated February 8, 2017. Subsequently, we issued a letter dated March 8, 2017 that provided LACERS with the adjusted fiscal year 2017/2018 employer contributions rates previously provided in our June 30, 2016 valuations for the retirement and health plans to reflect the enhanced Tier 1 benefits should some of the APO members decide to remain at LACERS on January 7, 2018. A copy of the letter and the APO report have been attached as an Appendix to the June 30, 2017 retirement valuation report.

  It should be noted that in this GAS 74 valuation report, we have not included the liabilities (if any) to reflect any potential future elections for APO members to remain at LACERS, since the elections for APO members to remain at LACERS have not yet been completed.

Summary of Key Valuation Results

	2017	2016
Disclosure elements for fiscal year ending June 30:		
Service cost(1)	$68,385,120	$62,359,771
Total OPEB Liability	3,005,806,234	2,793,688,955
Plan Fiduciary Net Position	2,438,861,850	2,134,877,117
Net OPEB Liability	566,944,384	658,811,838
Schedule of contributions for fiscal year ending June 30:		
Actuarially determined contributions	$97,457,455	$105,983,112
Actual contributions	97,457,455	105,983,112
Contribution deficiency / (excess)	0	0
Demographic data for plan year ending June 30:		
Number of retired members and beneficiaries(2)	14,652	14,313
Number of vested terminated members	1,280	1,119
Number of active members	25,457	24,446
Key assumptions as of June 30:		
Discount rate	7.25%	7.50%
Health care premium trend rates		
Non-Medicare medial plan	Graded from 6.87% to ultimate 4.50% over 10 years	Graded from 6.38% to ultimate 5.00% over 6 years
Medicare medical plan	Graded from 6.37% to ultimate 4.50% over 8 years	Graded from 6.38% to ultimate 5.00% over 6 years
Dental and Medicare Part B	4.50%	5.00%

(1) *The service cost is always based on the previous year's valuation, meaning the 2017 and 2016 values are based on the valuations as of June 30, 2016 and June 30, 2015, respectively.*

(2) *The total number of participants, including married dependents, receiving benefits is 19,539 as of June 30, 2017 and 19,086 as of June 30, 2016.*

Important Information about Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the defining future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare an actuarial valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan description in this report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Retirement Office. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved on the plan's assets. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important for any user of an actuarial valuation to understand and accept this constraint. The actuarial model may use approximations and estimates that will have an immaterial impact on our results and will have no impact on the actual cost of the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.
- **Assets** This valuation is based on the market value of assets as of the valuation date, as provided by the Retirement Office.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The valuation is prepared at the request of LACERS. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If LACERS is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. LACERS should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of LACERS, it is not a fiduciary in its capacity as actuaries and consultants with respect to LACERS.

EXHIBIT 1

General Information – "Financial Statements", Note Disclosures and Required Supplementary Information for a Single-Employer OPEB Plan

Plan Description

Plan administration. The Los Angeles City Employees' Retirement System (LACERS) was established by City Charter in 1937. LACERS is a single employer public employee retirement system whose main function is to provide retirement benefits to the civilian employees of the City of Los Angeles.

Under the provisions of the City Charter, the Board of Administration (the "Board") has the responsibility and authority to administer the Plan and to invest its assets. The Board members serve as trustees and must act in the exclusive interest of the Plan's members and beneficiaries. The Board has seven members: four members, one of whom shall be a retired member of the system, shall be appointed by the Mayor subject to the approval of the Council; two members shall be active employee members of the system elected by the active employee members; one shall be a retired member of the system elected by the retired members of the system.

Plan membership. At June 30, 2017, OPEB plan membership consisted of the following:

Retired members or beneficiaries currently receiving benefits(1)	14,652
Vested terminated members entitled to, but not yet receiving benefits(2)	1,280
Active members	25,457
Total	41,389

(1) The total number of participants, including married dependents, receiving benefits is 19,539.

(2) Includes terminated members due a refund of employee contributions.

Benefits provided. LACERS provides benefits to eligible employees.

Membership Eligibility:

Tier 1 (§4.1002(a))	All employees who became members of the Retirement System before July 1, 2013, and certain employees who became members of the Retirement System on or after July 1, 2013. In addition, pursuant to Ordinance No. 184134, all Tier 2 employees

who became members of the Retirement System between July 1, 2013 and February 21, 2016 were transferred to Tier 1 effective February 21, 2016.

Tier 3 (§4.1080.2(a))

All employees who became members of the Retirement System on or after February 21, 2016, except as provided otherwise in Section 4.1080.2(b) of the Los Angeles Administrative Code.

Benefit Eligibility:

Tier 1 (§4.1111(a)) and Tier 3 (§4.1126(a))

Retired age 55 or older with at least 10 years of service (including deferred vested members who terminate employment and receive a retirement benefit from LACERS), or if retirement date is between October 2, 1996, and September 30, 1999 at age 50 or older with at least 30 years of service. Benefits are also payable to spouses, domestic partners, or other qualified dependents while the retiree is alive. Please note that the health subsidy is not payable to a disabled retiree before the member reaches age 55.

Medical Subsidy for Members Not Subject to Cap:

Under Age 65 or Over Age 65 Without Medicare Part A

Tier 1 (§4.1111(d)) and Tier 3 (§4.1126(c))

The System will pay 4% of the maximum health subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum health subsidy. As of July 1, 2017, the maximum health subsidy is $1,736.88 per month, increasing to $1,790.80 in calendar year 2018.

Over Age 65 and Enrolled in Both Medicare Parts A and B

Tier 1 (§4.1111(e)) and Tier 3 (§4.1126(d))

For retirees, a maximum health subsidy shall be paid in the amount of the single-party monthly premium of the approved Medicare supplemental or coordinated plan in which the retiree is enrolled, subject to the following vesting schedule:

Completed Years of Service	Vested Percentage
1-14	75%
15-19	90%
20+	100%

Subsidy Cap for Tier 1:

(§4.1111(b))

As of the June 30, 2011 valuation, the retiree health benefits program was changed to cap the medical subsidy for non-retired members who do not contribute an additional 4% or 4.5% of employee contributions to the Pension Plan.

The capped subsidy is different for Medicare and non-Medicare retirees.

The cap applies to the medical subsidy limits at the 2011 calendar year level.

The cap does not apply to the dental subsidy or the Medicare Part B premium reimbursement.

Dependents:

Tier 1 (§4.1111(e)(4))
and Tier 3 (§4.1126(d)(4))

An additional amount is added for coverage of dependents which shall not exceed the amount provided to a retiree not enrolled in Medicare Parts A and B and covered by the same medical plan with the same years of service. The combined member and dependent subsidy shall not exceed the actual premium.

Dental Subsidy for Members:

Tier 1 (§4.1114(b)) and Tier 3 (§4.1129(b))	The System will pay 4% of the maximum dental subsidy (limited to actual premium) for each year of Service Credit, up to 100% of the maximum dental subsidy. As of July 1, 2017, the maximum dental subsidy is $44.60 per month; remaining unchanged in calendar year 2018. There is no subsidy available to spouses or domestic partners or for dependent coverage. There is also no reimbursement for dental plans not sponsored by the System.

Medicare Part B Reimbursement for Members:

Tier 1 (§4.1113) and Tier 3 (§4.1128)	If a Retiree is covered by both Medicare Parts A and B, and enrolled in a LACERS medical plan or participates in the LACERS Retiree Medical Premium Reimbursement Program, LACERS will reimburse the retiree the basic Medicare Part B premium.

Surviving Spouse Medical Subsidy

Tier 1 (§4.1115) and Tier 3 (§4.1129.1)	The surviving spouse or domestic partner will be entitled to a health subsidy (limited to the actual lowest cost plan available single-party premium) based on the member's years of service and the surviving dependent's eligibility for Medicare.
Under Age 65 or Over Age 65 Without Medicare Part A	The maximum health subsidy available for survivors is the lowest cost plan available (currently Kaiser) single-party premium ($826.43 per month as of July 1, 2017, increasing to $853.39 on January 1, 2018).

Over Age 65 and Enrolled in Both Medicare Parts A and B

For survivors, a maximum health subsidy limited to the single-party monthly premium of the plan in which the survivor is enrolled, is provided subject to the following vesting schedule:

Completed Years of Service	Vested Percentage
1-14	75%
15-19	90%
20+	100%

EXHIBIT 2

Net OPEB Liability

The components of the Net OPEB Liability of LACERS are as follows:

	June 30, 2017	June 30,2016
Total OPEB Liability	$3,005,806,234	$2,793,688,955
Plan Fiduciary Net Position	-2,438,861,850	-2,134,877,117
System's Net OPEB Liability	$566,944,384	$658,811,838
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	81.14%	76.42%

The Net OPEB Liability was measured as of June 30, 2017 and 2016. The Plan's Fiduciary Net Position (plan assets) was valued as of the measurement date, while the Total OPEB Liability was determined based upon the results of the actuarial valuations as of June 30, 2017 and 2016, respectively.

Plan provisions. The plan provisions used in the measurement of the NPL as of June 30, 2017 and 2016 are the same as those used in the LACERS funding valuations as of June 30, 2017 and 2016, respectively.

Actuarial assumptions. The Total OPEB Liabilities as of June 30, 2017 and June 30, 2016 were determined by actuarial valuations as of June 30, 2017 and June 30, 2016, respectively. The actuarial assumptions used in both the June 30, 2017 and June 30, 2016 valuations were based on the results of an experience study for the period from July 1, 2011 through June 30, 2014. However, based on the results of an economic actuarial assumptions study as of June 30, 2017, the investment return and inflation rate assumptions were changed for the 2017 valuation. The assumptions used in the June 30, 2017 funding actuarial valuation for LACERS were applied to all periods included in the measurement:

Investment rate of return	7.25%, net of OPEB plan investment expense, including inflation
Inflation	3.00%
Salary increases	Ranges from 10.00% to 3.90% based on years of service, including inflation
Other assumptions	Same as those used in the June 30, 2017 funding valuation

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These returns are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table:

Asset Class	Target Allocation	Long-Term (Arithmetic) Expected Real Rate of Return
U.S. Large Cap Equity	19.00%	5.61%
U.S. Small Cap Equity	5.00%	6.48%
Developed International Equity	19.00%	7.08%
Developed International Small Cap Equity	3.00%	7.32%
Emerging Market Equity	7.00%	9.35%
Core Bonds	19.00%	1.08%
Private Real Estate	5.00%	4.44%
Cash	1.00%	(0.06)%
Credit Opportunities	5.00%	3.75%
Public Real Assets	5.00%	3.35%
Private Equity	12.00%	8.97%
Total	100.00%	

Discount rate: The discount rate used to measure the Total OPEB Liability was 7.25% as of June 30, 2017 and 7.50% as of June 30, 2016. As contributions that are required to be made by the City to amortize the unfunded Actuarial Accrued Liability in the funding valuation are determined on an actuarial basis, the future Actuarially Determined Contributions and current Plan assets, when projected in accordance with the method prescribed by GAS 74, are expected to be sufficient to make all benefit payments to current members.

Sensitivity of the Net OPEB Liability to changes in the discount rate. The following presents the Net OPEB Liability of LACERS as of June 30, 2017, calculated using the discount rate of 7.25%, as well as what LACERS' Net OPEB Liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)	Current Discount (7.25%)	1% Increase (8.25%)
Net OPEB Liability as of June 30, 2017	$973,449,819	$566,944,384	$229,418,304

Sensitivity of the Net OPEB Liability to changes in the healthcare cost trend rate. The following presents the Net OPEB Liability of LACERS as of June 30, 2017, calculated using the trend rate as well as what LACERS' Net OPEB Liability would be if it were calculated using a trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

	1% Decrease*	Current Trend Rates*	1% Increase*
Net OPEB Liability as of June 30, 2017	$176,652,565	$566,944,384	$1,072,553,347

**Current trend rates: 6.87% graded down to 4.5% over 10 years for Non-Medicare medical plan costs; 6.37% graded down to 4.5% over 8 years for Medicare medical plan costs and 4.5% for all years for Dental and Medicare Part B subsidy cost.*

EXHIBIT 3

Schedules of Changes in LACERS Net OPEB Liability – Last Two Fiscal Years

	2017	2016
Total OPEB Liability		
Service cost[(1)]	$68,385,120	$62,359,771
Interest	210,169,949	199,078,412
Change of benefit terms	0	17,214,744
Differences between expected and actual experience	7,216,062	-22,012,716
Changes of assumptions	45,962,336	0
Benefit payments	-119,616,188	-109,940,623
Net change in Total OPEB Liability	$212,117,279	$146,699,588
Total OPEB Liability – beginning	2,793,688,955	2,646,989,367
Total OPEB Liability – ending (a)	$3,005,806,234	$2,793,688,955
Plan Fiduciary Net Position		
Contributions – employer	$97,457,455	$105,983,112
Contributions – employee	0	0
Net investment income	330,707,601	-342,591
Benefit payments	-119,616,188	-109,940,623
Administrative expense	-4,564,135	-4,528,590
Other	0	0
Net change in Plan Fiduciary Net Position	$303,984,733	-$8,828,692
Plan Fiduciary Net Position – beginning	2,134,877,117	2,143,705,809
Plan Fiduciary Net Position – ending (b)	$2,438,861,850	$2,134,877,117
System's Net OPEB Liability – ending (a) – (b)	$566,944,384	$658,811,838
Plan Fiduciary Net Position as a percentage of the Total OPEB Liability	81.14%	76.42%
Covered-employee payroll[(2)]	$1,973,048,633	$1,876,946,179
Plan Net OPEB Liability as percentage of covered-employee payroll	28.73%	35.10%

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(1) *The service cost is always based on the previous year's valuation, meaning the 2017 and 2016 values are based on the valuations as of June 30, 2016 and June 30, 2015, respectively.*

(2) *Covered-employee payroll represents the collective total of the pensionable wages of all LACERS membership tiers.*

EXHIBIT 4

Schedule of Employer Contributions – Last Ten Fiscal Years

Year Ended June 30	Actuarially Determined Contributions[1]	Contributions in Relation to the Actuarially Determined Contributions[1]	Contribution Deficiency / (Excess)	Covered-Employee Payroll[2]	Contributions as a Percentage of Covered-Employee Payroll
2008	$108,848,499	108,848,499	$0	$1,741,849,669	6.25%
2009	95,122,090	95,122,090	0	1,832,795,577	5.19%
2010	96,511,234	96,511,234	0	1,827,864,283	5.28%
2011	107,395,804	107,395,804	0	1,678,059,440	6.40%
2012	115,208,835	115,208,835	0	1,715,197,133	6.72%
2013	72,916,729	72,916,729	0	1,736,112,598	4.20%
2014	97,840,554	97,840,554	0	1,802,931,195	5.43%
2015	100,466,945	100,466,945	0	1,835,637,409	5.47%
2016	105,983,112	105,983,112	0	1,876,946,179	5.65%
2017	97,457,455	97,457,455	0	1,973,048,633	4.94%

(1) *All "Actuarially Determined Contributions" through June 30, 2017 were determined as the "Annual Required Contribution" under GAS 43 and 45.*

(2) *Covered-employee payroll represents the collective total of the pensionable wages of all LACERS membership tiers.*

Notes to Exhibit 4

Methods and assumptions used to establish "actuarially determined contribution" (ADC) rates:	
Valuation date	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported
Actuarial cost method	Entry Age Cost Method (level percent of payroll)
Amortization method	Level percent of payroll
Amortization period	Multiple layers, closed amortization periods. The costs associated with the 2009 ERIP have been amortized over 15 years beginning with the June 30, 2009 valuation date. The unfunded actuarial accrued liability as of June 30, 2012 is amortized over a fixed period of 30 years beginning July 1, 2012. Assumption changes resulting from the triennial experience study will be amortized over 20 years. Health trend and premium assumption changes, plan changes, and gains and losses will be amortized over 15 years.
Asset valuation method	Market value of assets less unrecognized returns in each of the last seven years. 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. The actuarial value of assets cannot be less than 60% or greater than 140% of the market value of assets.
Actuarial assumptions:	June 30, 2017 valuation date
Investment rate of return	7.25%
Inflation rate	3.00%
Real across-the-board salary increase	0.50%
Projected salary increases(1)	Ranges from 10.00% to 3.90%, based on years of service
Mortality	Healthy: RP-2000 Combined Healthy Mortality Table projected with Scale BB to 2020, set back one year for males and with no setback for females
Other assumptions	Same as those used in the June 30, 2017 funding actuarial valuation

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(1) *Includes inflation at 3.00% plus across the board salary increases of 0.50% plus merit and promotional increases.*